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BASAL METABOLISM DETERMINATIONS IN GENERAL INTERNAL DIAGNOSIS

CLINICAL APPLICATION, WITH ILLUSTRATIVE CASES

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Basal metabolism determinations have been placed on a practical clinical basis by the Benedict¹ method. The general physiologic and clinical significance of fluctuations in the metabolic rate is now also well understood. The next step is for clinicians to work out the range and value of their clinical application in suitably selected cases in routine diagnostic work. This is really the "touchstone" of any diagnostic method. Unless its clinical value can be shown to be commensurate with the time, labor and equipment required, and in this instance these items are rather large, it cannot and should not endure. This paper is offered as an additional contribution to this end.

It may fairly be said that the basal metabolism test rests on an established scientific basis. The main facts were quite fully understood for a quarter of a century before they became clinically applicable outside of institutional work. There is little that is new except the introduction of clinically practical methods.

This method of investigation involves more than simply the thyroid problem. The entire endocrine system, as yet so little understood and so difficult of interrogation, is involved, and stands in pressing need of both clinical and scientific investigation. It is not, indeed, limited to the endocrine system, as a careful consideration of all the facts will make perfectly obvious. For instance, if the thyroid gland is completely removed, the basal metabolism drops only 40 per cent. below the average normal, where it remains substantially constant. The question as to what keeps the basal metabolism up to this level instead of dropping to zero, considerably short of which would be death, is discussed by Kendall.² While it is not fully understood, he believes that amino-acids, proteins, creatin, creatinin, and probably other substances, play an important rôle in the stimulation and regulation of the basal metabolic rate. There seems to be no doubt that other members of the endocrine system play with thyroxin a synergistic rôle, while, of course, other bodies known and unknown, with entirely different physiologic effects, may have to be considered. This is undoubtedly true of the suprarenals. Tompkins,

Sturgis and Wearn,³ for instance, have shown that there is a marked increase in the basal metabolic rate, after the hypodermic administration of 0.5 c.c. of 1:1,000 solution (about 0.5 mg.) of epinephrin, amounting to 15 or 20 per cent. The *modus operandi* of epinephrin in the production of increased basal metabolism is probably quite different from that of thyroxin, and the effect is strikingly less in degree. These investigators attribute to the effect of epinephrin on the sympathetic autonomic nervous system the tremor and increased general muscular tonicity, the disturbed carbohydrate metabolism, and in some cases—but not all—the increased cardiac activity.

There is also the possibility that other endocrine hormones aside from the thyroid produce their effect on metabolism indirectly through the thyroid by neuro-circulatory influences on the thyroid gland. Thyroxin, on the other hand, according to Plummer,⁴ acts directly on all body cells. What has been said of the effect of epinephrin on the metabolic rate is probably true, though to a much smaller extent, of the pituitary, parathyroid, and pancreatic internal secretions.

A careful review of all the facts will, I think, convince any one that the one important controlling factor in the regulation of basal metabolism is thyroxin, on which the functional activity of the thyroid gland is largely, if not altogether, dependent. We are entirely ignorant at present of the identity of any other toxic substance, though some think there may be modification of the thyroxin molecule in some cases of exophthalmic goiter, or possibly even other endocrine hormones synergistic with or quite dissimilar to thyroxin.

The important question bearing on this clinical study is the dependability of fluctuations of the basal metabolic rate as an indication of thyroid activity; and this would obviously depend on whether the modified thyroxin molecule, if such exists, or possibly other unknown hormones, would retain the specific autocoid effect of the thyroxin molecule on cellular metabolism, or might possibly produce other toxic phenomena. Perhaps we cannot be too dogmatic on this point at present; but while recognizing the paramount position of the general clinical judgment in every case, variations in the metabolic rate as indirectly determined by the oxygen consumption must be regarded as the most scientific and practical index of thyroid toxicity.

In what group or groups of cases are the routine determinations of basal metabolism worth while? In general, this question may be thus answered:

1. In all cases of definite goiter, and especially if associated with health disturbances, to ascertain the degree, if any, of its toxicity.

1. Benedict, F. G.: A Portable Respiration Apparatus for Clinical Use, *Boston M. & S. J.* 178:667 (May 16) 1918.

2. Kendall, E. C.: The Thyroid Hormone and Its Relation to the Other Ductless Glands, *Endocrinology* 2:81 (April-June) 1918.

3. Tompkins, Edna H.; Sturgis, C. C., and Wearn, J. T.: Studies on Epinephrin, II, *Arch. Int. Med.* 24:269 (Sept.) 1919.

4. Plummer, H. S.: The Function of the Thyroid, Normal and Abnormal, *Tr. Assn. Am. Phys.* 31:128, 1916.

2. In a large group of cases either with or without goiter, with symptoms resembling, either closely or remotely, those of thyrotoxicosis.

In regard to the first group, whenever a patient has a goiter, large or small, and there is impairment of general health, whether the symptoms are typical of thyrotoxicosis or not, the toxicity of the goiter should be ascertained by the determination of the basal metabolism. This is especially true when considering the necessity for and character of therapeutic measures, surgical or medical. In any case with a goiter requiring a general diagnostic study, this accurate index of goiter toxicity should not be neglected. In judging of the operative risk in thyroidectomy, it is of the first importance. It appears to be true that this risk increases to an appalling degree when the metabolic rate attains an increase of around 100 per cent. Non-surgical measures should be exhausted in such cases in an effort to reduce the metabolic rate before operation, if the latter is decided on. The success of therapeutic measures can now for the first time be accurately gaged by basal metabolism determinations, instead of depending on the notoriously unreliable clinical data, such as pulse rate or nervousness.

Equally important, and presenting great diagnostic difficulties, is the second group indicated. It does not matter much in the final judgment whether the patients have or have not a palpable thyroid. I have seen several cases in which the thyroid was very doubtfully palpable, with the metabolic rate increased more than 50 per cent. Much more important than the goiter is the history of the case and the character of the symptoms. Among the symptoms suggesting investigation along these lines may be mentioned:

1. Psychoneurotic disturbances.
2. Circulatory disturbances:
 - (a) Tachycardia or bradycardia.
 - (b) Cardiac myasthenias.
 - (c) Certain arrhythmias.
3. Fine tremors.
4. Hyperhidrosis and hypohidrosis.
5. General debility.
6. Loss of weight.
7. Slight temperature disturbances.

Not one of the foregoing symptoms can be regarded as strongly diagnostic, much less pathognomonic, of hypothyroidism or hyperthyroidism. In fact, it is perhaps not too much to say that if the majority or perhaps even all of these symptoms were present in an individual case, it would still be possible that the syndrome could be due to something entirely aside from thyroid disease.

As a matter of course, if with these symptoms there are found a goiter and exophthalmos, the diagnosis of thyroid disease should be considered established. With the goiter alone this would not be so obvious, because if these symptoms, singly or collectively, can be due to causes other than thyroid disease, the presence or absence of a goiter would really prove nothing, although creating a strong presumption in favor of hypothyroidism or hyperthyroidism to be verified by subsequent investigations.

It is probably unnecessary to comment at length on the individual symptoms enumerated above. Taking, for instance, such of the symptoms as psychoneurotic instability and tachycardia, which may be regarded as the most characteristic symptoms of the thyroid syndrome, it is perfectly obvious that they may be due to

causes of the most diverse character. Nervous or mental overstrain, various chronic infections, but especially syphilis and tuberculosis, and a great variety of pathologic conditions occurring in the various glandular organs of the body, malnutrition, from whatever cause, gastro-intestinal disturbances, and many other conditions must be kept in mind as possible explanations of such a symptom group. Their differentiation from thyrotoxicosis can usually be made with a certain degree of probability by the general clinical picture and the usual diagnostic methods for the recognition of these pathologic conditions. The final court of appeal, so far as the thyroid problem is concerned, however, is the determination of the basal metabolism, which furnishes the most reliable proof either for or against the existence of thyroid disease.

The following cases are selected because in them the metabolic rate furnished a more or less decisive factor in the diagnosis, which could not have been ascertained in any other way. In most, or perhaps all of these cases, unlike the outspoken cases of exophthalmic goiter or myxedema, the disturbances of metabolism that are always largely determined by thyroid activity were masked by or associated with other conditions which obscured the clinical picture. This, in fact, is the very reason why these cases are selected, in order to illustrate the practical clinical value of these methods.

REPORT OF CASES

CASE 1.—*Hypothyroidism and tonsillar infection.*—History.—Mrs. L., aged 28, complained of nervousness, general pains and enlargement of the neck. An older sister had goiter, but was now symptomless. In April, 1918, the patient had tonsillitis, followed in two weeks by "rheumatism." She had enlargement of the neck for many years, since she was 14; "misery" in the neck began about one year before I saw her, soon followed by general pains. She was in bed with "rheumatism" for three or four days, and had occasional "rheumatic" pain for several weeks afterward. She had "nervous" headaches, and became dyspneic when excited or on exertion. The goiter was symptomless until one year before when she had some pain up and down the spine and the back of the neck, and since then the goiter had annoyed her considerably. There had been no increase in size for a number of years.

Physical Examination.—The pulse was 72; the blood pressure, 135 systolic and 100 diastolic. There was a very slight tremor of both hands. The tonsils were moderately enlarged and cryptic. The urine was negative. Blood examination revealed: hemoglobin, 85 per cent.; red blood cells, 3,731,000; white blood cells, 7,200; polymorphonuclear neutrophils, 60 per cent.; small lymphocytes, 27 per cent.; large lymphocytes, 10 per cent.; transitional cells, 1 per cent., and eosinophils, 2 per cent. The Wassermann reaction was negative. The alimentary hyperglycemia test revealed: fasting, 120 mg. per hundred c.c. of blood; one hour after 100 gm. of glucose, 241 mg. per hundred c.c. of blood. 2 hours, 124 mg. per hundred c.c. of blood.

August 15, the basal metabolism was—29 per cent. The patient was put on 1 grain of thyroid extract, three times a day, at the beginning of the treatment. The basal metabolism eight days later, August 23, was still—30 per cent.; August 27, it was—11.3 per cent.; September 3, normal, and September 10, —11 per cent. September 16 the tonsils were enucleated, and found markedly infected. September 25 the basal metabolism was +11.9 per cent.

This patient was referred for an opinion as to the advisability of a thyroidectomy which had been advised. She was told that the removal of the thyroid would probably have no influence on her general health, and she was placed on thyroid extract, as indicated above. The tonsillar infection was thought to have been an important factor in the case, so the tonsils

were removed. It illustrates the prompt effect of thyroid extract on basal metabolism which, together with the removal of the tonsillar infection, produced a marked improvement in the clinical condition of the patient. It will be noted that the basal metabolism dropped to — 11 per cent. after having reached the normal level, because the thyroid extract had been discontinued at that time. The alimentary hyperglycemia in this case is very interesting. The fasting blood sugar was somewhat high, and following the 100 gm. of glucose there was a very marked hyperglycemia, which illustrates the unreliability of alimentary hyperglycemia as a test for thyrotoxicosis. As stated elsewhere,⁵ alimentary hyperglycemia is due to a variety of other causes aside from thyrotoxicosis, although present in practically every case of the last named condition, but occasionally present, as in this case, in hypothyroidism.

CASE 2.—Hypothyroidism, with latent syphilis and old healed tuberculosis.—History.—Mrs. X., aged 36, had had boils, headaches, general weakness, and abdominal distress, particularly after riding or walking, for a period of six years. The trouble began with an indefinite ache in the neck. The patient noticed also pustules on the head. She felt weak and sick at that time. Soon boils appeared all over the body, continuing for about six months, after which they were limited to the scalp and the right side of the face and neck. The treatment given was unsuccessful. On forced feeding the patient gained 45 pounds, and was free from boils for one and one-half months. Then they recurred and have persisted. Dull, sore, "gnawing" feeling across the epigastrium, having no relation to meals, came on with boils. Usually there was but one boil at a time, associated with small sores on the scalp. The patient had nausea most of the time and felt numb and weak. Abdominal distress had been aggravated since the marked increase in weight. She had frequent headaches. She also had nightmares, and was very nervous. There were no menstrual disturbances.

Physical Examination.—The blood pressure was 120 systolic and 80 diastolic; the pulse was from 85 to 100 and regular. There was diffuse tenderness over the left half of the abdomen, and more or less discomfort in the region of the appendix on deep pressure. A roentgenogram disclosed a stationary tuberculous process in the lungs, without pleural involvement. There was cecal stasis with a typical picture of spastic colitis in the transverse colon, and ulcerative colitis from the splenic flexure downward. The urine was negative. Blood count revealed: hemoglobin, 85 per cent.; red blood cells, 5,810,000; white blood cells, 8,600; polymorphonuclear neutrophils, 51 per cent.; small lymphocytes, 43 per cent.; large lymphocytes, 2 per cent.; transitional cells, 1 per cent., and eosinophils, 3 per cent. The Wassermann reaction was + + +.

Blood sugar, fasting, was 81 mg. per hundred c.c. of blood; urine sugar was 0; one hour after 100 gm. of glucose, 142 mg. per hundred c.c. of blood; urine sugar, + +; two hours after 100 gm. of glucose, 88 mg. per hundred c.c. of blood; urine sugar, +.

A test meal revealed: one hour, free hydrochloric acid, 8; total, 22; one and one-half hours, free hydrochloric acid, 10; total, 25.

The stool was negative.

Because of the tachycardia and nervousness, a basal metabolism determination was made, showing an increase of 53.4 per cent. We have, therefore, to deal in this case with an old tuberculous infection, together with a latent syphilitic infection, probably hereditary, and a moderately severe grade of thyrotoxicosis. The rational treatment of the case is thus clearly indicated, the basal metabolism determination furnishing the necessary proof of overaction of the thyroid gland.

CASE 3.—Hypothyroidism.—History.—Mr. A., aged 41, who complained of "liver trouble," had had erysipelas at the age of 3, and used to have attacks of headache associated with "torpid liver." About ten years before he began to notice constipation. He had attacks of nausea and vomiting every few weeks, gradually becoming worse. He was unable to do any work. He had constipation, with vague gastro-intestinal symptoms.

Physical Examination.—The pulse was 68; the blood pressure, 125 systolic and 95 diastolic. The urine was negative. Blood examination revealed: hemoglobin, 80 per cent.; red blood cells, 5,690,000; white blood cells, 8,200; polymorphonuclear neutrophils, 40 per cent.; small lymphocytes, 40 per cent.; large lymphocytes, 16 per cent.; transitional cells, 1 per cent., and eosinophils, 3 per cent. The Wassermann test was negative.

The alimentary hyperglycemia test revealed: fasting 61 mg. per hundred c.c. of blood; urine sugar, negative; one hour after 100 gm. of glucose, 123 mg. per hundred c.c. of blood; urine sugar, + + +; two hours after 100 gm. of glucose, 115 mg. per hundred c.c. of blood; urine sugar, + +.

Roentgen-ray examination of the gastro-intestinal tract was negative.

A test meal revealed: one hour, hydrochloric acid, 72; total, 88; one and one-half hours, hydrochloric acid, 41; total, 61.

The stool showed many fatty acid needles and crystals, but was otherwise negative.

Aug. 6, 1919, the basal metabolism was — 11.3 per cent. The patient was given thyroid extract, one-fourth grain, three times a day.

August 26, the basal metabolism was + 20.1 per cent. Thyroid extract was stopped.

October 4, the basal metabolism was + 81.3 per cent. On his own initiative he had taken 3-grain doses of thyroid extract three times a day for some time. He was told to stop all thyroid.

October 10, the basal metabolism was + 32.5 per cent.

The clinical improvement occurring in this case was very marked. The patient had been unable to work for a year, and while neither the basal metabolism nor the pulse rate indicated any serious deficiency in thyroid secretion, I decided to make a clinical test. Aside from the clinical improvement that occurred, the most interesting feature of the case was the fluctuation of the basal metabolism in response to thyroid extract, reaching a point as high as + 81.3 per cent. at one time. This occurred without any of the usual symptoms of "exophthalmic goiter," though the basal metabolism test placed it within the group of severe cases. This is explained by the very transient duration of the increased metabolism, which produces the characteristic symptoms only after a considerable period of time. The patient had some slight headache at the time when the basal metabolism reached its highest point, and was perhaps rather nervous. It should be remembered that the patient on his own initiative had taken 3 grain doses of thyroid extract for some time, which accounted for the rather extraordinary rise in basal metabolism. It will be noted that it dropped to + 32.5 per cent. within twenty-four days after the medication had been stopped. The marked clinical improvement in this case following thyroid medication, with very slight manifestations of hypothyroidism, seems to me to be a suggestive and interesting therapeutic observation. This patient has resumed his usual vocation with apparently normal health and nutrition.

CASE 4.—Tuberculosis clinically simulating hyperthyroidism.—History.—Miss R., aged 24, had headache, severe and constant, during waking hours, with general weakness. She had an acute attack of "influenza" Feb. 3, 1919, and was in bed ten days with nausea and vomiting, but with no fever. She had headache, which had continued since. The blood was examined in April, and the Wassermann reaction reported

5. McCaskey, G. W.: The Differential Diagnosis of Hyperthyroidism by Basal Metabolism and Alimentary Hyperglycemia, New York M. J. 110: 607 (Oct. 11) 1919.

positive. She had headache "all over the head," worse in the morning. There was throbbing all over the body at times.

Physical Examination.—The pulse was 100 to 115, the systolic blood pressure, 145, and the diastolic, 90. The temperature was 98.8. There was a definite enlargement of the thyroid, more of the left and middle lobes. There was tremor, both fine and coarse. The heart was rapid; there were no bruits; rhythm was normal; the left border of the heart was 1 cm. to the left of the nipple. Examination of the lungs disclosed impaired resonance and diminished breath sounds over the right apex. The basal metabolism was +10 per cent. A roentgenogram disclosed evidence of early pulmonary tuberculosis. The urine was negative.

Blood examination revealed: hemoglobin, 70 per cent.; white blood cells, 9,800; polymorphonuclear neutrophils, 51 per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 25 per cent.; transitional cells, 2 per cent., and eosinophils, 2 per cent. Blood sugar, fasting, was 97 mg. per hundred c.c. of blood; one hour after 100 gm. of glucose, 152 mg. per hundred c.c. of blood; two hours after 100 gm. of glucose, 134 mg. per hundred c.c. of blood. The Wassermann test was negative, on several examinations. The tuberculosis fixation test was + + +.

The stool was negative. The sputum was scant and mucopurulent; streptococci, + +; staphylococci, +; diplococci, +; influenza, +; pus cells, but no tubercle bacilli.

August 1, the patient was given 2 mg. of old tuberculin hypodermically, with no reaction; August 3, 5 mg. with no reaction; August 6, 8 mg. with a temperature of 101+. The patient felt quite sick during the night; there was a definite general and local reaction.

The weight was 93 pounds, 10 pounds below normal.

In this case there were several of the most important symptoms of thyrotoxicosis, namely, a well marked tachycardia of 100 to 115, and definite fine tremor, together with moderate enlargement of the thyroid gland. There were also general debility, loss of weight, and moderate elevation of blood pressure, with the throbbing indicative of vasomotor disturbance, all of which fit in very well with the theory of thyroid intoxication. The temperature recorded for more than a week showed no elevation. Stereoscopic plates of the lungs revealed lesions which were evidently tuberculous. The physical signs, while not very definite, indicated a lesion, either recent or old, at the right apex. There was some expectoration, showing a mixed infection, as stated above, but no tubercle bacilli were found by the antiformin method. While the case was one in which there was fairly strong suspicion of a chronic infection, yet it was one also in which thyroid intoxication might very easily have played at least a coordinate rôle. This was ruled out by the basal metabolism determination, which was strictly within the normal range, although at the high limit. In such a case one must keep in mind the clinical fact of considerable fluctuation in the metabolic rate in cases of hyperthyroidism of any grade of severity. A single observation of this sort, therefore, must be interpreted with caution, and has the same value as any other single laboratory observation in regard to a fluctuating pathologic condition. In this respect it is probably on a par with a mild positive Wassermann reaction, which is frequently inconstant, or the occurrence of albuminuria or glycosuria. On the other hand, a definite tuberculin reaction, both local and general, together with corroborative roentgen-ray findings, a positive tuberculosis complement fixation test, and suggestive physical findings, seemed to justify the working diagnosis of a tuberculous infection as the principal factor in the case.

CASE 5.—Hyperthyroidism; psoriasis; perverted carbohydrate metabolism.—History.—Mrs. S., aged 46, was operated on two years before for disease of the appendix and ovaries.

She developed blood poison, for which she was given serum. This caused a breaking out on the left foot and left side of the body. Rash came on over the whole body, lasted twenty-four hours and then disappeared. For months afterward she was troubled with small pus collections under the nails of both hands. Lesions of the left arm appeared fifteen months before I saw her and had persisted. Similar spots on the left foot dried up but never healed. They burned, but did not itch. The initial lesions were elevated, indurated patches, that soon turned to "blood blisters," and finally the patient picked them off. She stated that her temperature had not been under 100 for many months. She had occasional headache, some vertigo and dyspnea.

Physical Examination.—Sept. 10, 1919, the pulse was 96; blood pressure, systolic, 140; diastolic, 90; temperature, 100.2. There was a definite fine tremor of the hands. There was a symmetrical enlargement of the thyroid; the right lobe was quite palpable and hard. The cervical glands on the right side were palpable and tender. There was an enlarged epitrochlear on the left. There were no bruits or arrhythmia. There was definite edema of the ankles and legs, and general tenderness of the lower abdomen. Skin lesions, typical patches of psoriasis, were found on the left arm and left leg. Roentgen-ray examination of the heart and lungs was negative. The urine was negative. The teeth and tonsils were negative. Phenolsulphonephthalein: $41 + 14 = 55$. The blood count Wassermann test and tuberculosis complement fixation were negative.

Blood sugar, fasting, was 168 mg. per hundred c.c. of blood; one hour after 100 gm. of glucose, 192 mg. per hundred c.c. of blood. The nonprotein nitrogen was 27.12 mg. per hundred c.c. of blood. After one week on a carbohydrate free diet, during which the blood sugar slowly dropped, the fasting blood sugar was 148 mg. per hundred c.c. of blood. The same diet was continued twelve days longer. The fasting blood sugar dropped to 86 mg. per hundred c.c. of blood, and continued so for a month, during which time the patient was under rather strict starch restriction (about 50 gm. a day). The basal metabolism was: September 12, +41.5 per cent.; September 16, +52 per cent.; September 20, +49 per cent.

This case presents several interesting features aside from the moderately severe thyrotoxicosis demonstrated by several basal metabolism determinations. The hyperthyroidism itself may easily have been the result of the sepsis, residual evidence of which was found in a suppurating process in the left foot. The fasting blood sugar values are among the highest I have seen aside from cases of diabetes. It is of special interest to note that the hyperglycemia following 100 gm. of glucose amounted to an increase of only 24 mg., or about 14 per cent. of the fasting blood sugar value. The fasting hyperglycemia is not, in my opinion, even suggestive of thyrotoxicosis. It is reasonable to assume that the disturbances of carbohydrate metabolism indicated by a high fasting blood sugar content played an important rôle in the general pathology of the case, including the psoriasis, which, it may be added, improved remarkably on the regimen of starch restriction.

The thyrotoxicosis, whatever may have been its origin, probably played a considerable part in the general syndrome, and could have been recognized only by the basal metabolism determinations. Diabetes mellitus, which might have been suggested by the high fasting blood sugar content, was improbable because of the low blood lipid content.

CASE 6.—Hypothyroidism of puberty.—History.—Miss P., aged 16, had choking sensations in the throat. About eight or nine months before the family noticed that she began to gain rapidly in weight. Symptoms began about six months before, and had been getting worse. For the past three or four weeks she had become nauseated at from 10 to 10:30 a. m., being relieved by eating lunch. The menses were normal.

Physical Examination.—The pulse was from 60 to 80. Roentgen-ray examination was negative. The urine was negative. The blood count was normal. The Wassermann test was ++. A test meal revealed: one hour, free hydrochloric acid, 32 degrees; total, 56; two hours, free hydrochloric acid, 20; total, 34.

December 24, the basal metabolism was —15 per cent. The patient was given thyroid extract, one-eighth grain twice daily, which was followed by rapid improvement.

This case apparently belongs in the group described by Nobecourt⁶ as "hypothyroidea of puberty," which he defines as a minor degree of thyroid insufficiency, a condition which he says is frequently encountered.

The positive Wassermann reaction must not, of course, be overlooked, and as a matter of fact this patient is one of an entire family suffering from various grades of hereditary syphilis. Of course, proper treatment is being given for this trouble.

CASE 7.—Hyperthyroidism, with chronic hypertension.—History.—Mr. K., aged 43, complained of nocturnal asthmatic attacks. He had had an acute illness, diagnosed as pneumonia, one month before. One year before, his health began to fail. He began to have some headache, and to lose weight. He had lost 30 pounds during the last year. For the last two years, and probably for the last four years, he had had high blood pressure, ranging from 170 to 200, but he had been getting along fairly well until his acute illness one month before. The trouble began suddenly while he felt in good health. One evening he had a sensation of difficult breathing, with wheezing in the chest, which got so bad that medical aid had to be called. His physician found him with distressing asthmatic dyspnea, and this had recurred every night, becoming very severe at times.

Physical Examination.—The pulse was 135, and regular. The systolic blood pressure ranged from 185 to 200, the diastolic from 130 to 145, indicating rather low pulse pressure. A systolic murmur was heard at the apex. There was an area of dulness over the manubrium. The urine showed some hyaline and granular casts, but the excretion of fluid and solids was within normal range. The blood was normal; the Wassermann test, negative.

June 23, 1919, the blood sugar, fasting, was 0.104; August 7, 0.121; one hour after 100 gm. of glucose, 0.233; two hours after 100 gm. of glucose, 0.140.

Roentgen-ray examination revealed definite dilatation of aortic arch, and enormous enlargement of the heart.

June 3, six days after the first examination, the basal metabolism was +50 per cent.; July 3, +70 per cent.; August 5, +97 per cent. There was a distinct gallop rhythm.

The patient died, October 13.

This case is one of extraordinary scientific and clinical interest. Under rest and varied drug treatment the dyspneic attacks disappeared and the patient improved clinically in every respect. It will be noted that the basal metabolism at the outset indicated a moderate grade of thyrotoxicosis, which it was thought would yield under treatment. No goiter could be detected by us or by the clinicians at the Mayo Clinic, where the patient went later for an examination. He had, however, a very short, thick neck, and a goiter of considerable size might have escaped detection. The subsequent marked increase in basal metabolism is thus best explained by increasing thyroid toxicity. The case was such a typical one of chronic hypertensive cardiovascular disease that the thyroid factor would be pushed entirely into the background unless forced to the front by basal metabolism determinations. The etiologic relationship of the thyrotoxicosis to the cardiovascular disease could not under the circumstances have been determined, but a careful study of

the case suggests, on the one hand, the possibility just indicated and, on the other hand, the desirability of carefully studying the basal metabolism in chronic hypertensive cases to determine the possible evolution of thyrotoxicosis.

CASE 8.—Hyperthyroidism, syphilophobia.—History.—Mr. S., aged 31, complained of being nervous and restless, and was always tired in the morning on arising. He had been "doctoring" for the past seven or eight years. He had had some palpitation and dyspnea, and was fully convinced that he had syphilis.

Physical Examination.—This was negative, except for fine tremor. Repeated Wassermann tests (four) were negative. The blood sugar, fasting, was 0.079; it was 0.152 one hour after 100 gm. of glucose, and 0.162 two hours after 100 gm. of glucose. The basal metabolism was +41 per cent.

In this case the determination of the basal metabolism converted a syphilophobic patient into a thyrotoxic one, from the standpoint of diagnosis.

COMMENT

I had hoped to present a larger number of cases, with more abbreviated outline. It seemed advisable, however, to make the case records so complete that the diagnostic bearings of the basal metabolism "settings" would be reasonably clear, even though this made it necessary to omit other interesting cases. There are many aspects of the cases presented which could, I think, be further discussed with profit, but this is also precluded by the length of the paper. So far as I am concerned, this procedure has passed the experimental stage and has been assigned its place in my diagnostic armamentarium by the side of the roentgen ray, the electrocardiograph, serology, colorimetry, clinical chemistry, etc., to be used as occasion requires. While its precise limitations and scope will, of course, be more clearly defined with larger experience, and especially with a fuller knowledge of the endocrinopathies, the attainment of which will be greatly stimulated by its use, the information which it gives in certain cases appears to me indispensable, and cannot be otherwise accurately obtained.

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THE TREATMENT OF BRONCHIAL ASTHMA

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The treatment of bronchial asthma is so much dependent on its etiology and a differentiation from other conditions which have similar symptoms, that it is mandatory that a short sketch of these necessary facts be presented before I enter on the main subject of this paper.

Bronchial asthma may be due to anaphylactic or reflex phenomena. It must be distinguished from asthmatic bronchitis, dyspnea due to cardiac decompensation, uremia, and obstructive dyspnea from inflammatory tissue, tumors or enlarged glands or organs in the lumen of the tracheobronchial tree or pressing on the outside of it. A proper physical examination, roentgenoscopy, urine and blood investigation and endoscopy will definitely exclude all the conditions mentioned except asthmatic bronchitis. The last can be excluded by the fact that it is not dependent on

6. Nobecourt, P.: *Le monde méd.*, November, 1919, p. 257.

anaphylaxis for its symptoms but on definite pathologic changes in the bronchial and peribronchial tissues, which may or may not be readily demonstrated by a roentgenogram.

These items must be determined before one can treat a case of asthma with hope of success:

1. Examination of the nose, throat and teeth, and roentgen-ray examination of the head to determine the presence or absence of pituitary enlargement, and disease in the alveolar processes of the jaws.

2. Search in other parts of the body for infected areas that may be possible sources of reflex irritation or absorption of toxic material, such as may occur from a diseased appendix, gallbladder, prostate, ovary, etc.

3. Bacteriology of the nasal discharges, pus from the tonsils and tooth sockets, bronchial secretions and stool. The suggestion for examining the stool bacteriologically may be open to criticism. I have had one case of colon bacillus anaphylaxis, and several other physicians within my acquaintance have seen similar cases. Furthermore, very often stools are encountered wherein colon bacilli have been partially or even completely replaced by other organisms, such as diphtheroids, unidentified gram-positive cocci, or pneumococci. Stools displaying these bacterial flora are an expression of an intestinal disturbance of bacterial origin which may or may not have a bearing on the bronchial asthma, and it would be unwise to overlook them. Suspensions of the individual bacteria isolated from the various secretions and discharges should be prepared for the purpose of making skin tests.

4. Skin tests with the autogenous bacteria as well as with stock bacterial proteins, epidermal and food proteins, and pollen. A patient has recently come to my notice who was found sensitive to the bacteria isolated from the nasopharynx, but not to the proteins of similar stock organisms. This has been found in other instances, but less strikingly, and is suggestive of a difference in the protein character in different strains of the same organism. Unless a patient is an infant and partaking of only a few foods, we deem it almost indispensable that the patient be tested with all available food proteins irrespective of the age of onset of the disease; for it has been found by us that a patient may be anaphylactic to certain proteins without exhibiting symptoms, and through some unknown reason develop asthma concomitant with or after some infectious disease, such as chronic ethmoiditis.

TREATMENT

Preventive.—In certain very definite instances, infants have been found to be anaphylactic to human milk from birth. Such a condition surely could not have been prevented, and is very unfortunate; however, the simple change from human milk to that of some other species, as cow's milk, will be followed by a complete restoration to the normal. Through some peculiar freak of nature, a child may show evidences of sensitiveness to cow's milk when it is fed such on the first occasion. In this instance the substitution of condensed or dried milks will, in the majority of instances, overcome what at first seems to be an unsurmountable difficulty. When a child is fed an article of diet for the first time, especially when there is a family history of asthma, urticaria, eczema, hay-fever, etc., it should be continued repeatedly and at frequent intervals and not sporadically; for in this way any anaphylaxis which a child might develop by occasionally feeding this particular food will be mitigated or obviated. Bacterial anaphylaxis is a demonstrable fact. It occurs as the result of intermittent absorption of the proteins of dead bacteria from infected areas. For this reason, and because the presence of an infection is a constant source of danger to the patient's health and life, all infected foci should be eradicated as soon as they are discovered. This particularly applies to infected nasal accessory sinuses, and infected tonsils and tooth

sockets, for these areas are most commonly infected and form the basis for innumerable ills besides bacterial sensitiveness.

Climatic.—Only in cases of asthma due to pollen is climatic change of any value, and then it is important to select that locality in which the particular offending plant does not grow. In the vicinity of New York, Fisher's Island, Block Island, Fire Island and Beach Haven are particularly good, except when there is a breeze blowing from the land. More distant localities are of decided benefit, such as the higher levels of the Rocky Mountains, White Mountains and Adirondacks. It is utter folly for one suffering with asthma due to food or epidermal proteins to expect relief by changing climate, because the same conditions will prevail in the new locality as in the old. After a proper diagnosis has been made and suitable treatment instituted, a change of scene and air would be of inestimable value.

Specific.—Generally speaking, it must be said that if a patient is anaphylactic to any one food, that article of diet may be eliminated and the patient recover if there is not a complicating bronchitis, in which instance suitable bacterial vaccine therapy must be given. However, most of the cases cannot be included in this class for the simple reason that patients usually suffer from sensitiveness to more than one food, and in addition may have epidermal, pollen or bacterial anaphylaxis or a combination of all of them. Most foods, however, may easily be eliminated from the diet except milk, eggs and meat. In our experience, patients are not usually sensitive to casein but are sensitive to lactalbumin. By boiling the milk, the lactalbumin becomes coagulated and rises to the surface as a scum and then can be removed. Milk treated in this way can be taken with impunity. In the case of eggs and meats, one of two methods may be employed to desensitize the individual. One of these is the gradual feeding of increasing amounts of egg or meat, beginning with a very small dose. The threshold of reaction must be determined before the treatment is instituted. This may be accomplished by either determining the largest amount of these foods that can be taken by mouth without causing symptoms or by means of skin reactions, following the same technic as described in the treatment of pollen anaphylaxis. The other method is the gradual increase of doses of egg or meat given subcutaneously. Patients sensitive to potatoes may eat them baked, but not boiled or fried. Well toasted wheat bread and puffed wheat, but wheat in no other form, may be partaken. It has been my experience and also that of others working in this field that occasionally a patient may not be sensitive to whole wheat but be anaphylactic to one or more of the individual proteins in wheat. For this reason it is essential that patients be tested with all of the five proteins isolated from wheat. I have observed that when a patient abstains from an article of food for some time, the skin reaction shows less sensitiveness, or no reaction is obtained. Under these circumstances it might be well to have the patient again partake of this food, as he or she may no longer have symptoms from it.

The treatment of bronchial asthmatics who are sensitive to epidermal proteins is very satisfactory, and it is in this class of cases that we procure our most striking results. Patients suffering from anaphylaxis due to cat hair, dog hair, mouse hair, chicken feathers, goose feathers and the feathers of pet birds, such as canaries and parrots, have no symptoms when they are removed from contact with these. When occupation

demands that a person be constantly in contact with the particular epidermal protein that is causing his asthma, such as in the case of furriers and cattle dealers, one of two things may be done; either the patient must change his occupation or be immunized against the particular offending substance; but, in my opinion, it would be necessary for him to discontinue working in that particular field while undergoing treatment. Patients suffering with horse dandruff anaphylaxis, if not very sensitive to horse dandruff, may be comparatively free from symptoms by avoiding contact with horses, or, if they reside near a stable, by changing their residence. For those patients who are sensitive to horse dandruff, in dilutions of the protein weaker than 1:500, desensitization treatment gives wonderful results, the patient usually showing improvement after a few treatments. It has been my experience that the effects of desensitization in horse dandruff cases is not permanent and has to be repeated from time to time. However, fewer treatments are necessary than in the first instance. The same rules as regards the determination of dosage are to be applied here as in the case of pollen anaphylaxis.

Patients may be sensitive to bacterial proteins alone or to other substances besides. Some patients having uncomplicated bronchial asthma show a very decided sensitiveness to certain bacteria. If the bronchial asthma is complicated by chronic bronchitis, the patient may or may not be sensitive to the predominant organism found in the sputum. When the bronchial asthma is complicated by chronic bronchitis, and there is no evidence that the bacteria found in the sputum are producing the asthmatic symptoms by virtue of sensitization, vaccines made from the organisms found should be of inestimable value when combined with the other measures for treating this disease. In some instances, it may be necessary to give three courses of hypodermic treatment at the same time; for instance, when a patient is suffering from chronic bronchitis and an important food and epidermal protein anaphylaxis. If the patient is sensitive to any of the bacteria found in the various discharges or secretions, it is very important not to overdose the patient with the vaccines made from these organisms. It has been my experience that patients suffering with bacterial anaphylaxis, and who are receiving vaccines made from the offending bacteria, do not as a rule exhibit local swelling, redness and pain where the injection is given, but suffer certain general symptoms which are akin to the milder or severer forms of anaphylaxis. For instance, a patient who is under my care at present has had an attack of nausea one-half hour after each injection, and in one instance vomited, six or seven hours later had a chill followed by fever, and a typical severe attack of asthma supervened without there being the slightest evidence of local reaction. It is extremely important, therefore, that the initial dose of bacteria should not be more than twenty million, and not increased more than twenty million each time and at not a shorter interval than four days.

In case that no alleviation from symptoms occurs from subcutaneous vaccine therapy, intravenous injections of vaccine may be tried. When bacterial vaccines are being used and the patient is not sensitive to these organisms, an initial dose of not more than twenty million bacteria may be given intravenously. If, however, the patient is sensitive to the bacteria contained in the vaccine, the initial dose intravenously should not be more than one quarter of that amount. Intra-

venous vaccine therapy is usually followed by a chill and rise of temperature, which may come on at any time between three quarters of an hour and eight hours after the exhibition of the vaccine. Such treatment as this should not be repeated more often than once weekly, and should be preceded in each instance by a urine examination with the idea in mind of demonstrating the presence or absence of red blood cells and other evidence of kidney irritation. Should this be present, the treatment must be postponed until such time as the urine is found to be normal again. A subcutaneous treatment may be sandwiched in between two intravenous treatments. If the patient receives no relief from the vaccine treatment given, it may be that the proper organism is not incorporated in the vaccine, and in that instance it is necessary to take another culture of the patient's secretions and discharges. Some patients require more than one series of vaccine treatments, and they usually do much better with the second and third series than they did with the first.

A large percentage of patients suffering from hay-fever become asthmatic during the hay-fever season. As a rule, asthma occurs only during the latter part of the hay-fever season, the reason for this being that the nose is obstructed because of the hay-fever, and the patient is compelled to breathe with his mouth open. Under these circumstances, pollen-laden air is inspired directly into the bronchial tubes without having the protective action of first passing through the nose. As a result, the pollen causes the same swelling to occur in the bronchial tubes as is present in the nose, thus producing an attack of true bronchial asthma. Because of mechanical nasal obstruction or extreme sensitiveness of the bronchial mucous membrane, some patients become asthmatic at the outset of the hay-fever season, and their bronchial symptoms in this instance overshadow the nasal and eye symptoms with which hay-fever patients ordinarily suffer. Having seen a patient affected with asthma of the aforementioned type, one can readily appreciate the suffering which these patients undergo. The symptoms usually last six weeks or more, and the patient is constantly bedridden. Nothing in the way of relief can be expected from specific treatment under these conditions. It is without reason to add to the pabulum of pollen protein by injecting pollen extracts into a person who is saturated with these and constantly absorbing more through his respiratory mucous membranes. The only logical and reasonable thing to do under these circumstances is to make every effort to prevent the patient from further contact with pollen. This can be accomplished by screening the windows with wet cheesecloth and hanging a moistened sheet over the door. If possible, it is wise to remove the patient to a room on the top floor of some very high building, such as a hotel. The room should have an eastern exposure, and the windows and doors should be protected according to the foregoing suggestion.

In about 50 per cent. of the cases of hay-fever asthma, the attack may be prevented or made so mild that the patient will be comfortable throughout the hay-fever season by prophylactic specific treatment. In New York, most of the spring cases of hay-fever are due to sweet vernal grass, timothy, Kentucky June grass, redtop, and orchard grass. In the fall, as far as my experience has gone, the vast majority are due to ragweed. The other pollens, such as tag alder, sheep sorrel, daisy and goldenrod, play an unimportant rôle. It is absolutely essential that the amount of sensitive-

ness be established by skin tests before treatment is undertaken. This is accomplished by applying the various dilutions of the pollen or pollens to which the patient is sensitive to small scratch marks made on any of the flexor or internal surfaces of the extremities. The dilution next higher to the one that gives a reaction is the dilution with which treatment may be begun. For instance, the patient is tested with dilutions of ragweed extract of 1:100, 1:500, 1:1,000, 1:5,000, 1:10,000, 1:50,000 and 1:100,000. If the patient reacts to all the dilutions up to and including 1:10,000, the dilution of 1:50,000 is that which should be used with which to begin treatment. The initial injection should be 0.2 c.c. of this dilution, and the dosage should be increased by 0.2 c.c. each succeeding time until 1 c.c. of this dilution is given. Then 0.2 c.c. of the 1:10,000 dilution should be injected, and so on as before.

If redness, swelling and itching occur at the site of the injection, it is wise either to repeat that dose at the next treatment or even to diminish it if the action is very severe. When the treatment is begun, as is usually the case, about six weeks before the known onset of the attack, the interval of treatment should not be less than four days. When it is possible, we are now giving weekly injections throughout the year, and our results have been far better than when the prophylactic treatment has been of short duration, just preceding the hay-fever season. This plan is being carried out in the hay-fever and asthma clinic at New York University and Bellevue Medical College. When the stronger dilutions of pollen extract are used, such as 1:500 and 1:100, a great deal of caution must be exercised in increasing the dose, because even a slight increase may precipitate an attack of anaphylaxis; and I would warn those who arrive at these dilutions that the increase in dosage should not at any time be greater than 0.02 c.c.

Drug.—During an attack of bronchial asthma, certain drugs may be used to alleviate the patient's suffering. The solution of epinephrin (adrenalin) chlorid, 1:1,000, when given hypodermically, has the effect of overcoming the spasmodic constriction of the bronchial tubes, and thus stops the paroxysm or ameliorates the symptoms. The effects of this drug begin to make themselves manifest within fifteen minutes, and last anywhere from one half to two hours. For this reason it is necessary to administer repeated doses while the attack, which may last for weeks, is in progress. The patient gradually becomes accustomed to repeated doses of epinephrin, so that the amount given has to be increased from time to time, and finally, the patient develops a complete tolerance to the drug and no more relief is obtained from its administration. The constant exhibition of this drug is not unattended by baneful after-effects; its immediate action of precipitately raising the blood pressure must necessarily have a damaging influence on a heart even in the healthiest condition. Besides this, its constant use is known to produce a sclerosis of the larger arteries. Epinephrin should never be given intravenously, or while the patient is in the physician's office, as I have seen very harmful effects from such practice. Recently Dr. Hugo R. Miller has been using the active epinephrin extract in oil and, when given prepared in this way, he finds that the effect of the drug comes on more gradually and lasts much longer. The adrenalin inhalant, from our experience, is inactive and does not produce the results which Dr. Miller claims for his preparation.

Atropin given subcutaneously or intramuscularly in gradually increasing doses, up to the point of tolerance, and especially when combined with small doses of morphin, will give the patient a great deal of comfort. Potassium iodid, 1 gm. every four hours, helps to render the bronchial secretions less tenacious and more liquid, and thus makes the coughing milder and of shorter duration. Preparations containing the salts of ammonia, especially liquor ammoniae anisatis, disturb the stomach less than potassium iodid, and are just as efficacious. A mixture containing tincture of belladonna, chloral hydrate and syrup of hydriodic acid has been found to make the patient comfortable in the majority of instances. It is surprising how much relief is obtained by inhaling the fumes from a smouldering powder made from nine parts of stramonium leaves and one part of potassium nitrate. This is the basis of most asthma powders on the market. In very severe cases, nothing short of large doses of morphin hypodermically will give the patient the necessary respite and mental rest from the distressing paroxysms. When the bronchitis persists between attacks, nothing is more efficacious to alleviate the cough and sustain and soothe the patient than Thompson's mixture of linseed oil¹ with codein or compound tincture of opium. Applications of cocain and epinephrin directly to the mucous membrane of the bronchial tubes through a bronchoscope during an attack certainly give respite from symptoms; but the duration of the relief is too short to warrant this trying procedure.

NUTRITIONAL EDEMA AND "WAR DROPSY" *

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Before the recent war, medical literature contained frequent references to the type of edema now recognized as "war edema." With the clinical picture in mind presented by meager reports that have appeared in the American¹ and British scientific journals of recent publication, a somewhat extended study of wars, famines and epidemics of the past has proved fruitful in bringing to light evidence of the prevalence of edema of this type under varying conditions of insufficient and inadequate food. This edema resembles that of renal disease. In mild cases it may be confined to the lower limbs, but in the severe type the edema may extend to all parts of the body. There is no albuminuria. Accompanying this edema there are emaciation, muscular weakness, depression, anemia, and very frequently gastro-intestinal disturbances.

While the term war edema is not found in early medical literature, there is much evidence that the condition known by this term has been of frequent occurrence in the past. In giving a name to this disease, the authors usually express the chief etiologic factor with the most pronounced clinical symptom, so that war edema, prison dropsy, hunger swelling, epidemic dropsy, edema from inadequate food, deficiency edema, edema without albuminuria, and many similar

1. Mixture of linseed oil (Thompson) consists of: dilute hydrocyanic acid, 10 c.c.; oil of wintergreen and oil of cinnamon, of each, 8 c.c.; glycerin, 20 c.c.; simple syrup, 300 c.c.; Irish moss, 15 gm.; linseed oil, 450 c.c., and water, 780 c.c.

* From the Otho S. A. Sprague Memorial Institute.

1. War Edema, Current Comment, J. A. M. A. 70: 627 (March 2) 1918. Warthin, A. S.: War Edema, Int. A. M. Museums Bull. 7: 196 (May) 1918.

terms have been used. In civil practice previous to the war, essential idiopathic or primary edema, salt edema in children, alimentary dropsy, anemic dropsy and edema following gastro-enteritis were some of the more common terms employed.

Prinzing² makes no mention of war edema from the time of the Peloponnesian Wars, from 430 to 425 B.C., to the siege of Port Arthur in 1904. In a large number of these etiologically related conditions, edema appears as a symptom rather than as a specific disease. In the destruction of the French army before Naples in 1528,³ "those soldiers who were not confined to bed in their tents were seen with pallid visages, swollen legs, and bloated bellies, scarcely able to crawl."

Vacher,⁴ writing of the conditions of childhood during the siege of Paris in 1870-1871, finds that the effect of insufficient nourishment showed itself in progressive emaciation, edema of the integument, anemia, and uncontrolled diarrhea, which were characteristic symptoms of the hunger fever which decimated the infant population. Between 1877 and 1880, there broke out in Calcutta a peculiar disease to which the term "epidemic dropsy" was applied.⁵ This disease followed an extensive famine in southern India.⁶ It persisted in epidemic form until 1880. The number of cases increases in each cold season and falls off in each hot season. It has continued to appear in Calcutta sporadically. Neighborhood and family groups continued to be reported until 1915.

Edema of war occurred during the Napoleonic campaigns, the siege of Paris, and in the concentration camps during the Boer War, when it was known as epidemic edema.⁷ Falta⁸ of Vienna mentions that the disease was known in Russia during famines before the war, and that the expression "swollen from hunger" was current in the affected districts. Landa⁹ related that in August, 1915, when the City of Mexico had been the seat of military operations for two or three months, the appearance of numerous cases of edema began to be noted. Starvation edema was reported by Dr. Patterson¹⁰ in 1899 after a season of famine in China. Holst,¹¹ in connection with his researches in ship beriberi and scurvy, furnishes this interesting group of historical data:

Many dropsical cases were observed during the Crimean War when scurvy was prevalent. Dropsy without sore gums occurs every year on board the French fishing vessels off the coast of Newfoundland. During the first part of the nineteenth century dropsy was common in European and American prisons. This prison dropsy is stated in 1847 to have been, besides typhoid fever and consumption, the most prevalent cause of death in forty-one prisons in England, France and North America. In 1857, it caused one-half the deaths in a prison in Breslau.

RECENT REPORTS OF EDEMA IN EUROPE

The first record of war edema in the recent war was made in 1915 by Strauss, who described the "hunger

disease" in Russian Poland and Galicia, where the poor had an insufficient and monotonous dietary, and were exposed to war epidemics. About the same time, in July, 1915, Budzynski and Chelchowski¹² described a series of 110 cases of a peculiar affection occurring among the inhabitants of certain towns in Poland as a result of insufficient and inadequate food caused by the German occupation. The name "hunger swelling" was applied to this disease because its most characteristic feature was the presence of marked edema, recalling that encountered in dropsical beriberi. All the patients suffering from the disease were in a state of semistarvation.

In Germany, war edema first made its appearance in prison camps in July, 1915. Rumper at first considered relapsing fever responsible, but in 1916, when many cases with dysenteric symptoms occurred in prison camps free from relapsing fever Rumper and Knack¹³ regarded dysentery as a predisposing cause. At this time, cases were reported among Russian soldiers at the front. Early in 1917, there were many cases in the civil population and labor battalions in Germany, and in the spring, cases appeared in Austria among civilians, especially workmen, but rarely among the troops. The disease appeared in Vienna with great suddenness. In 1917, marked attention was given in German medical journals to this peculiar disease, which seemed to have become widespread throughout Germany. The first cases noted in Berlin were in January, 1917.

Guillermín and Guyot¹⁴ made personal observations and reported in March, 1919, that insufficient food in Russia, Germany and Austria had caused a specific disease of hunger which was known as hunger edema. These authors described the disease as it occurred among French prisoners of war.

In Poland, the patients were in a state of semistarvation, none having eaten meat for several months and some not since the beginning of the war. The cases occurred almost exclusively among the poorest of the people and the unemployed factory hands, who were without money to buy food at the famine prices. The staple diet of the people consisted of potatoes supplemented by small quantities of soup and bad bread on certain days. The amount of potatoes eaten averaged 5 pounds for each person daily, a dietary which caused diarrhea and eventually led to most of the food's being passed through the gastro-intestinal tract undigested. The causes of the disease, according to the Polish authors Budzynski and Chelchowski, were lack of proper food, especially the absence of fats, and the large amount of bad potatoes consumed. Maase and Zondek,¹⁵ in agreement with other authors, consider the cause of the disease to be underfeeding, resulting especially from the diminished quantity of fats. Another factor suggested was the amount of fluid ingested. Owing to the changed conditions, most of the sufferers had been taking a more watery diet than normally, in the form of soups, turnips, etc., and the occurrence of diarrhea was fairly common. Schiff¹⁶ suggests that this purely war disease has obvious similarities to beriberi and other diseases resulting from a lack of vitamins. Falta says that all of the patients

2. Prinzing, F.: *Epidemics Resulting from Wars*, New York, Oxford University Press, 1916.

3. Hecker, J. F. C.: *Epidemics of the Middle Ages*, London, 1846, p. 231.

4. Vacher: *La mortalité à Paris en 1870*, *Gaz. méd. de Paris*, 1871, p. 9, cited by Prinzing (Footnote 2).

5. Green: *Epidemic Dropsy in Encyclopedia of Medicine and Surgery*, Edinburgh and London 2: 422.

6. Leys, J. F.: *Epidemic Dropsy*, *Reference Handbook of Medical Sciences*, Ed. 3, New York, William Wood & Co., 3: 696, 1914.

7. Maliwa, E.: *Wien. klin. Wchnschr.* 30: 1477, 1917.

8. Falta, W.: *Wien. klin. Wchnschr.* 30: 1736, 1917.

9. Landa, E.: *Deficiency Edema*, *Gaceta méd., Mexico* 11: 67 (Jan.-June) 1917; abstr. *J. A. M. A.* 78: 424 (Feb. 9) 1918.

10. Patterson, A. H.: *Starvation Edema*, *Med. Rec.*, November, 1899, p. 715.

11. Holst, A.: *Experimental Studies Relating to Ship Beriberi and Scurvy*, *J. Hyg.* 7: 621, 1907. Holst, A., and Frölich, T.: *J. Hyg.* 7: 670, 1907.

12. Budzynski, B., and Chelchowski, J. M. H.: *Hunger Swelling in Poland*, *J. Trop. M.* 19: 141 (June 15) 1916.

13. Rumper and Knack: *Brit. M. J.* 2: 560 (Oct. 27) 1917.

14. Guillermín, R., and Guyot, F.: *Undernourishment and Famine Edema*, *Rev. méd. de la Suisse Rom.* 39: 115 (March) 1919.

15. Maase, C., and Zondek, H.: *Berl. klin. Wchnschr.* No. 36, Sept. 3, 1917; abstr. *Brit. M. J.* 2: 560 (Oct. 27) 1917.

16. Schiff: *München. med. Wchnschr.* No. 22, 1917.

had been improperly fed for a long time, especially as regards proteins, and the liability to edema, always present in malnutrition, was aggravated by the large quantity of sodium chlorid in the food. He states that persons showing war dropsy had usually been getting from 1,200 to 1,400 calories a day, including only 30 to 50 gm. of protein. But as such degrees of edema do not ordinarily occur in simple starvation, he believes that another factor must be present in these cases, namely, the ingestion of large amounts of fluid and salt in the attempt to sustain life on the thin vegetable soups common in prison camps and in famine districts. Cold, hard work and infectious diseases increase the tendency to edema simply because they increase the deficiency in food calories.

The Swiss authors found that in some regions the conditions of underfeeding were extreme, resembling the great famines of history. The disease was also very frequently found in men who were subject to hard work on a diet of from 800 to 1,200 calories, consisting of 15 per cent. and more of indigestible cellulose, bread containing 97 per cent. potatoes, very little fat, and a ration of 50 gm. of albumin, daily, at the highest. Exposure to cold and hard physical labor were contributing factors in the development of this disease.

Maase and Zondek¹⁵ suggest that the toxic products of protein metabolism may cause damage to the endothelial lining of the blood vessels and so lead to edema. The high residual nitrogen and ammonia values found by them in the urine, blood and edema fluids were considered to be evidence of this hypothesis. Franke and Gottesmann,¹⁷ in their study of the functional efficiency of the kidney in seventeen cases of war edema, found delay in excretion of urea and sodium chlorid in ten patients, and of potassium iodid and lactose in seven. They therefore call war edema a nephritis without albuminuria.

Maliwa,⁷ from investigations of four cases, correlates the stage of polyuria with an excess of sodium chlorid in the blood, and finds that after the polyuria has passed off the blood is deficient in the sodium chlorid content. The change in the osmotic relations of the tissue is the essential factor in the disease, the polyuria and edema, though prominent clinical features, being secondary in importance. To determine the cause of the edema, Knack and Neumann¹⁸ sought to secure its return in convalescents by restricting the diet principally to turnips, and by giving large quantities of water internally. Neither measure separately ever produced the result, but with the restriction of the diet, plus water drinking, the edema rapidly returned in convalescent patients. Lange¹⁹ discusses the causation of a group of cases observed by him in West Prussia, and concludes that an altered permeability of the blood vessels was present, owing to a qualitative alteration in the food, perhaps to the extreme deficiency of calcium. Hulse²⁰ reaches similar conclusions, except that the edema was more frequently found as a sequel to relapsing fever, and in men who had been previously exposed to extreme cold. Recent writers discuss the subject of vitamins and the rôle they play in deficiency diseases, especially those belonging to the beriberic type, but gen-

erally recognize that it is not a well-defined deficiency disease, and in the majority of cases is the result of an inadequacy of diet to supply the nutritional requirements of the body.

The characteristic symptoms found among the inhabitants of certain towns in Poland were edema, debility, muscular weakness, intestinal disorders, mental depression, dimness of vision, disappearance of sexual impulses, and alterations in the blood and urine. With the disappearance of the edema the wasting was evident, the patients sometimes being reduced to mere skin and bones. Maase and Zondek¹⁵ state that there were no noteworthy premonitory symptoms, but suddenly marked edema developed, especially in the lower limbs, with anemia and frequent diarrhea. Among French prisoners, there was great emaciation, the loss of weight being frequently 40 per cent. of the initial weight, anemia, general edema, muscular weakness and nervous exhaustion; and apathy and depression were associated with a "facies pestica." Falta states that prostration, apathy and weakness were almost constant; a feeling of heaviness in the legs, and diminished reflexes were found, but no typical polyneuritic symptoms occurred. The nutritional value of the food was still further diminished by diarrhea and dysentery, which were frequently associated early in the development of the disease.

In cases among the civil population, the edema was generally located in the feet and legs, occasionally in the thighs and trunk. In more than one-half the cases there was some degree of facial swelling; in one-sixth, the hands were swollen, and in one-ninth ascites was present. The face and scrotum were often affected, and in a small number of cases, ascites and hydrothorax occurred. Its features were remarkably uniform: the edema resembled that of renal disease and in mild cases was confined to the lower limbs; but in severe cases it was universal and caused considerable limitation of movement, sometimes interfering with the opening of the eyes. The edematous tissue was soft and elastic; the skin and puncture fluids were pale. In some cases the edema came on gradually, but after severe physical exertion, more rapidly. Following the disappearance of the dropsy, relapses were prone to occur, especially if there was any return to hard work or unsuitable food. The edema sometimes led to bursting of the skin with serous exudation, or so stretched the skin that pink scars like striae gravidarum resulted from it. The swollen extremities felt cold, and were painful when touched. Beyermann²¹ states that twelve cases among the insane suggested scurvy or purpura except for the remarkably slow pulse and the absence of changes in the gums. On the addition of fresh vegetables to the ordinary diet, conditions returned to normal.

The urine was usually pale like water, alkaline, and contained neither sugar nor albumin. The amount of urine passed varied greatly in different cases, but on the whole was increased, sometimes reaching 60 ounces and over when the swelling was disappearing. As soon as the patient was put to bed, a marked diuresis began, and during the stage of recovery the amount of urine passed daily was from 3 to 4 liters. High residual nitrogen and ammonium values were found in the urine, blood and body fluids. Falta found polyuria and frequency of micturition; the urine being clear, of low

17. Franke, M., and Gottesmann, A.: *Wien. klin. Wchnschr.* 30: 1004, 1917.

18. Knack, A. V., and Neumann, J.: *Outbreaks of Edema in Germany*, *Deutsch. med. Wchnschr.*, July 19, 1917, p. 901; abstr. *Lancet* 2: 248 (Aug. 18) 1917.

19. Lange, F.: *Deutsch. med. Wchnschr.*, July 12, 1917, p. 876; abstr. *Lancet* 2: 248 (Aug. 18) 1917.

20. Hulse W.: *München. med. Wchnschr.*, July 10, 1917, p. 921; abstr. *Lancet* 2: 248 (Aug. 18) 1917.

21. Beyermann, W.: *Edema Disease in the Netherlands*, *Nederlandsch Tijdschr. v. Geneesk.* 1: 2265 (June 28) 1919; abstr. *J. A. M. A.* 73: 1172 (Oct. 11) 1919.

specific gravity, and free from albumin and formed elements, except a few hyaline casts. Tonin²² comments on the odd fact that polyuria constantly accompanied the hunger edema in ex-prisoners of war seen at the hospital. As noted by others, this polyuria usually began when the patients were at rest in bed.

Jensen's²³ study of the blood showed from 1.5 to 4 million red corpuscles with a color index greater than one, usually with a leukopenia, in 60 per cent. of the cases there being less than 5,000, with a relative lymphocytosis (from 30 to 55 per cent.). The coagulation time was usually shortened, and the blood proteins were nearly always decreased, generally being from 4 to 6.4 per cent. (normal is from 6.5 to 8.5 per cent.), that is, there was a hydremia with hypo-albuminosis. The freezing point was normal, the residual nitrogen normal or low, uric acid normal, and sugar and calcium usually low, chlorin usually approaching the upper normal figures, although it was occasionally low. Chemical examination of the blood and urine (Knack and Neumann) revealed a diminution in lipoids and in the organic phosphorus content of the blood. The depletion of the tissues in nutritive reserve in war dropsy is shown by Falta's statement that when absolute fasting is studied in these cases there are only from 2 to 3 gm. of nitrogen eliminated per day, as against 10 to 12 gm. of nitrogen excretion during the fasting of normal persons.

There were no cardiac symptoms reported by Maase and Zondek, but other observers found a condition suggestive of a cardiac lesion with failing compensation. Falta states that the slow pulse, from 35 to 40 a minute, characteristic of war edema, is best marked in males. Schiff reports a somewhat higher pulse rate of from 42 to 56. The edema was frequently observed with cardiac symptoms and infections in children, but in adults without these complications.

Hemeralopia frequently preceded the development of the edema. In severe cases, corneal ulcer and xerosis of the conjunctivae were troublesome. Ophthalmologists describe these eye changes as the result of debility and poor nourishment. Nyctalopia, or night blindness, is common in the spring and fall as a symptom of debility. Night blindness seldom occurs as a functional disorder except in cases of general debility, starvation or scurvy. The development of xerophthalmia is now recognized as due to a specific deficiency in fat-soluble vitamins. Maynard²⁴ discussed twenty cases of increased intra-ocular tension found in the course of epidemic dropsy. There was dimness of vision, the cornea was a little steamy, and the pupils were small or moderately dilated. The tension of the eyeball was distinctly increased. Halos, generally rainbow-like, were complained of at one time or another during the attack of dropsy.

Vandervelde and Cantineau²⁵ made observations on 200 patients treated by them in the St. Pierre Hospital at Brussels. Most of these cases were among deported Flemish civilians. There was marked edema of the lower limbs, frequently associated with "grave phlegmons." The general condition was brought about by lack of food and by deplorable hygiene. There were weakness and profound anemia; and dyspnea resulted from the slightest effort. Those deported

were recruited without any medical examination and were forced to do hard physical work. Minor symptoms and complications were common. Among these were: ringing in the ears and dry, painful skin with frequent secondary pyogenic infections; and in one or two instances dark pigmented patches were observed on the face, similar to the pigmentation in Addison's disease. (Noted by the Polish authors.)

In mild cases under the influence of a more generous dietary, recovery took place. The regulation treatment for the condition consisted in a better diet as far as possible and rest in bed until all swelling had disappeared. Knack and Neumann found that recovery always followed rest in bed on ordinary hospital diet and that the restriction of fluids was rarely necessary. Maase and Zondek, by giving three patients 100 gm. of fat daily for a week, were able to cure the disease completely without rest in bed or other remedial measures. The diet should be ample, especially in regard to protein. The lack of resistance to cold is striking, death following relatively slight chilling, so that warmth is an important part of the treatment. The prognosis is good if the patients are kept in bed on a proper diet, but severe cases frequently prove fatal. Postmortem findings are seldom reported. Chronic marasmus with atrophy of the viscera, especially the heart and spleen, fatty degeneration of the liver and kidneys, and in some instances, dysenteric ulcers were found. In three cases Budzynski and Chelchowski found a diminution in the amount of blood, and a reduction in the size of the liver.

REPORTS FROM INDIA, CHINA AND MEXICO

Leaving the recent reports of edema in Europe and turning to the literature of other countries, we find that in many lands similar epidemics of dropsy have resulted from famine. Until the appearance of "epidemic dropsy" in India following the famine in 1876-1877, "swellings" were regarded as a minor symptom, when arising in the course of famine diseases. During this famine the mortality was high, and in eight famine districts nine tenths of the total recorded deaths were caused by famine diseases—dysentery, dropsy, diarrhea and debility.²⁶ Government works and a system of rationing were established for men, women and children unable to earn the daily ration. To test the value of this ration, a system of weighing the people was undertaken. In these tests great caution was found necessary for, it was reported, many of the people who came into the camps appeared to be filling out and fattening, when in reality they were getting dropsical and in a fair way to die. In the nursery of the famine relief camp near Madras, many children were found to be in a dropsical condition, and most of the old people were in the same state. Old men and old women were bloated with dropsy, and others again, many of them in the prime of life, were mere skeletons, the bodies of full grown men weighing only from 58 to 85 pounds at necropsy.

To supply the vast population of southern India with the necessary amount of food for health was the "Hoover problem" of the famine relief agencies. Practically all the grain had to be imported, and transportation facilities were inadequate. It seemed necessary to keep the grain ration, principally rice, as low as possible. Animal foods were scarce. Dr. Cornish, adviser of the government of India on public health

22. Tonin, R.: *Gazz. d. osp.* 40: 636, 1919.

23. Jensen: *München. med. Wehnschr.* 65: 925, 1918.

24. Maynard, F. P.: Preliminary Note on Increased Intra-Ocular Tension Met with in Cases of Epidemic Dropsy, *Indian. M. Gaz.* 44: 373, 1909.

25. Vandervelde, M., and Cantineau, M.: Edema Among the Deported, *abstr. J. A. M. A.* 73: 1229 (Oct. 18) 1919.

26. Digby, W.: *The Famine Campaign in Southern India, 1876-1877.*

questions, pointed out that effects of insufficient nourishment might not be immediately apparent, and throughout the famine constantly emphasized the importance of the nitrogenous value of the ration, and advocated a ration consistent with age and work, sufficient to replace tissue waste. After this famine, reports began to appear in the *Indian Medical Gazette* of acute dropsy and acute anemic dropsy. In 1881, McLeod²⁷ termed the disease "epidemic dropsy." The "new disease" continued to be the subject of many reports and extensive bacteriologic investigations until 1909-1910. According to bacteriologic phraseology, it appeared endemically and epidemically, and much study was given to a specific organism, with no constant results.

Dr. Greig,²⁸ in his report on epidemic dropsy, states that there is evidence to show that epidemic dropsy is a nutritional disease which is brought about by a one-sided dietary, and that the two severe outbreaks of epidemic dropsy in Calcutta and Bengal, namely, from 1877 to 1879, and from 1907 to 1909, have been correlated with a sustained high price of food grains during this period, and the cessation of these epidemics has synchronized with the fall in prices of food grains. The study of the parasitic origin of disease has somewhat overshadowed the question of the relation of defects of dietary to the causation of disease in the tropics. In one locality, Greig found in 321 houses, with 4,637 inhabitants, 1,581 persons who were dropsical. The persons attacked consumed polished rice, and this was their staple diet. The amount of rice consumed daily varied from 2 to 16 ounces (from 1 to 8 chittaks). When the price of grains rose, the capacity for purchasing additional suitable articles of diet diminished and the diet became dangerously onesided.

The peculiar qualities of rice as a diet were pointed out by McCay²⁹ in his investigations of jail dietaries. Rice is the poorest of all cereals in protein, and when cooked it swells up and absorbs three and one-half times its weight in water. The percentage of starch in rice is high—up to 80 per cent. Rice is deficient in fat. Rice is a bulky diet, 26 ounces of dry rice when cooked measuring about 2,800 c.c. A large carbohydrate diet, by its mere presence in the intestinal canal, hinders the absorption of protein. On account of the fermentation processes that are quickly set up, there is increased peristalsis, and the food is hurried through the small intestine past the area most favorable for absorption. The amount of rice present in the diet influenced in a marked degree the quantity of urine excreted. The rice may have a diuretic action on the kidneys, or water may be formed in the tissues from the constituents of the rice, in addition to the large water intake with the boiled rice itself.

Dr. Patterson¹⁰ of Chinkiang, China, described a group of cases of dropsy occurring in dispensary patients after a famine season. The food of these people consisted largely of weeds and wild plant greens. As no literature could be found on the subject, the disease was called "greens dropsy." The only symptom complained of was the swelling. With some medical treatment and money to buy grain, the patients recovered rapidly.

When the City of Mexico had been the seat of military operations for two or three months, Landa⁹ related that many cases of edema in men, women and children began to be noted. Hundreds of cases were found with no albuminuria. As in other famine epidemics, many persons died of actual starvation, while others developed edema cachexia from defective nourishment. The mortality was high, the patients dying in marasmus with heart failure. There was hydremic anemia, hypothermia, slow pulse, reduction of the reflexes, and pain in the muscles. The only food obtainable had been vegetables of the families *Chenopodiaceae* and *Amaranthaceae*, such as beets and spinach.

RELATION OF WAR EDEMA TO DEFICIENCY DISEASES

Frequent reference is made to the similarity between the clinical symptoms found in war edema and those associated with diseases of the beriberi type. Faltz states that the wet form of beriberi is the only other deficiency disease in any way resembling war edema. In this group of edematous diseases, as discussed by various authors, are tropical beriberi, ship beriberi and epidemic edema. The polyneuritic symptoms in tropical beriberi have been so constantly emphasized that they have obscured the equally important edematous conditions which form the chief feature in the wet type of the disease. In epidemic edema and ship beriberi, nervous phenomena are rarely present, but edemas of various degrees constitute the major symptom. Infants nursed by beriberic mothers suffer from edema, dyspnea and cyanosis. Authorities agree that this is an infantile beriberi due to some deficiency in the mother's milk. Almost all cases of infantile beriberi are edematous. The pathologic findings observed at necropsy in 219 infants under 1 year of age showed a percentage of 56.6 of infantile beriberi. Vedder and Williams³⁰ regard this edema in infantile beriberi as due to a specific avitaminosis. Vedder³¹ furnished a list of food deficiencies found by the various investigators in beriberi: (1) deficiency in fat (Bremaud and Laurent); (2) nitrogen starvation (Takaki); (3) deficient vegetables combined with an infection (Fales); (4) deficiency in organic phosphorus (Schauman) and (5) deficiency of some unknown substance, not phosphorus (Fraser and Stanton, Chamberlain and Vedder, Shiga and Funk).

It is interesting to contrast with this group the findings by the various authors in war edema. The lack of calcium, fat, phosphorus in the blood, fresh vegetables, proteins and vitamins have each been emphasized in war edema. In addition there was general underfeeding; the diet as a whole was low in caloric value. The food was quantitatively as well as qualitatively deficient. There was semistarvation.

Lind,³² in his early account of scurvy, found dropsy a constantly recurring symptom. Scurvitic persons were found to have edematous swellings at first about the ankles, later extending to the legs and other parts. The face, especially, became pale, swelled and bloated. Long want, improper diet, melancholy and cold are given among the causes. Dr. Cook, in a letter to Lind at this time, finds the term "nervous disorders" universally applied to most chronic and cachectic ailments. The lower people "who live continually on

27. McLeod, K.: Epidemic Dropsy in Calcutta, *Indian M. Gaz.* **16**: 148, 1881.

28. Greig, E. D. W.: The Scientific Memoirs of the Government of India, No. 49, 1911-1912.

29. McCay, D.: The Scientific Memoirs of the Government of India, 1909-1911.

30. Vedder, E. B., and Williams, B.: Concerning the Beriberi-Preventing Substances or Vitamines Contained in Rice Polishings, *Philippine J. Sc.*, Sec. B, **8**: 175, 1913.

31. Vedder, E. B.: Beriberi, New York, William Wood & Co., 1913.

32. Lind, J.: A Treatise of the Scurvy, Edinburgh, 1753, p. 319.

farines and a gross diet," and among whom these complaints are found, had a universal lassitude, pains which they termed rheumatic, and a breathlessness on exercise. The legs were sometimes swollen and the abdomen almost always tender and tumefied. Professor d'Espine observed these edemas during the siege of Paris as a first stage of scurvy; and Guillermin and Guyot, commenting on similar scorbutic complications, ask if scurvy may not be simply a state more advanced in the evolution of this disease, of which edema is an initial symptom. But the number of deaths occurring without scorbutic symptoms seems to plead for war edema as "une entité morbide." Dropsical patients without sore gums were frequently observed in epidemics of scurvy in Russia during the Crimean War when scurvy was very prevalent.

In pernicious anemia associated with pregnancy, Williams³³ finds anemia, weakness, shortness of breath, and edema of the extremities. A general puffiness affecting the hands and face as well as the legs, without urinary findings, is common in hydremic patients. More than half of all pregnant women, according to DeLee,³⁴ show some edema of the feet, the hands or the face. Often this is an elastic puffiness that does not pit. The cause of this is not known. In reproductive processes throughout nature, growth occurs at the expense of the maternal tissue. The protein materials are chiefly concerned in the growth of the new cells. Miescher³⁵ showed that salmon, after entering the Rhine from the sea, virtually starve. Yet the genital organs of both male and female develop greatly at the expense of the liquefying muscles, which may lose 55 per cent. of their weight (protein) without destruction of the muscle cell.

In war edema and in the etiologically related edemas in deficiency diseases, hydremic anemia is a somewhat frequent symptom. Osler and McCrae,³⁶ in their study of the circulatory disturbances in a group of cases of chlorosis, find dyspnea in 318, palpitation in 254, and edema in 231. "Doubtless it is the occurrence of slight degrees of edema which gives chlorotic patients so plump a look." All the symptoms come on in the course of from three to twelve months. The disease is most common in ill fed and overworked girls.³⁷ A long continued unbalanced diet may play a large part in the process.

Sir Joseph Fayrer³⁸ finds that pernicious anemia in Europe resembles beriberi in the Orient. Bramwell,³⁹ in a table showing the most important symptoms in forty-five cases of pernicious anemia, records twenty-three cases of dropsy, associated with great prostration, weakness and loss of weight. The urine was normal in the majority of cases. This edema was considered as partly due to the watery condition of the blood, and partly to the enfeebled state of the heart. Functional derangements of the stomach and intestine are almost invariably present. A symptom⁴⁰ which is practically never wanting is edema, especially of the legs and

under eyelids, though it is also seen in other places on the body. The swelling is practically never marked, but is very persistent, and is noticeable as one of the earliest symptoms of the disease. Moreover, it readily recurs in patients who show a complete remission. As in other anemias, the edema is possibly due to alterations in the blood vessel walls. A gain in body weight in pernicious anemia when unattended with increase of hemoglobin indicates dilution of the blood and escape of serum into the tissues.

Edema occurring in the course of gastro-intestinal disorders and marasmic conditions in infancy is somewhat infrequent but well recognized by pediatricians. Chapin⁴¹ reports twenty-one cases of general and local edema in which neither the condition of the blood nor that of the urine explains satisfactorily the development of the edema. The clinical conditions in which these edemas are most frequently found are: (1) difficult digestion and malassimilation with gastro-intestinal disturbances and diarrhea; (2) exhaustive conditions, such as prematurity, marasmus, extreme secondary anemias, edema neonatorum, and in long debilitating diseases; (3) occasionally in various constitutional diseases, such as syphilis, tuberculosis, erysipelas, and pertussis, and (4) in angioneurosis of vasomotor origin.

Under the term essential, primary or idiopathic edema, Wagner,⁴² in 1887, records the earliest account of this disease. An epidemic of edema in which thirteen cases occurred in thirty-five babies in which gastro-enteritis was prevalent was thought by De Wolf⁴³ to be of infectious origin. The cases all occurred within a short time in a children's hospital in which the food supply was modified milk alone, or modified milk with the addition of a cereal or a proprietary food.

Potter,⁴⁴ in a group of cases of diarrhea with edema following a diet of barley water with a low percentage of fat and protein, increased the fats and proteins with the disappearance of the edema in a short time. The same author later reports a large group of cases in which he considers the edema a symptom of malnutrition and marasmus. In typical cases these babies had been treated for some time with boiled water, barley water or whey. A slight gain in weight occurred as the edema developed. Potter says that it is not what the babies are being fed that causes the dropsy, but what they are not being fed; also that it is entirely owing to the fact that they are not getting enough proteins in the diet, and this notwithstanding the intestinal disturbances that practically always accompany or precede the edema. It may be that in many of the cases the continuance of the diarrhea itself is due to the deprivations of solids in the food.

Czerny and Keller⁴⁵ use the term "Mehlnährschäden" to describe a condition found in infants fed on a high carbohydrate diet, but lacking in other important foodstuffs. The tendency of the tissues to hold water is increased in carbohydrate feeding. Holt⁴⁶ finds general edema as a symptom in marasmic infants. There is often increase in weight, and the whole body may become waterlogged. The symptoms shown by some

33. Williams, J. W.: *Obstetrics*, New York, D. Appleton & Co., 1912, p. 509.

34. DeLee, J. B.: *The Principles and Practice of Obstetrics*, Ed. 2, Philadelphia, W. B. Saunders Company, 1915, p. 386.

35. Miescher, quoted by Lusk, Graham: *The Science of Nutrition*, Ed. 2, Philadelphia, W. B. Saunders Company, 1909.

36. Osler, William, and McCrae, Thomas: *Modern Medicine*, Ed. 2, Philadelphia, Lea & Febiger, 1915.

37. Osler, William: *Principles and Practice of Medicine*, Ed. 8, New York, D. Appleton & Co., 1916, p. 730.

38. Fayrer, Joseph: *Beriberi*, in Quain's *Dictionary of Medicine*, London, 1888, p. 104.

39. Bramwell, Byron: *Anaemia*, Philadelphia, William Wood & Co., 1899.

40. Stengel, Alfred: *Diseases of the Blood*, Philadelphia, W. B. Saunders, 1905, p. 263.

41. Chapin, H. D.: *Cases of Edema in Infants*, *Arch. Pediat.* **31**: 5, 1914.

42. Wagner, E.: *Deutsch. Arch. f. klin. Med.* **41**: 509, 1887.

43. DeWolf, H.: *A Report of Thirteen Cases of Edema Apparently Epidemic in Character*, *Arch. Pediat.* **19**: 895, 1902.

44. Potter, P. A.: *The Relation of Protein to Edema in Marantic Children*, *Med. News*, New York, Jan. 9, 1904; *Edema in Infants*, *Arch. Pediat.* **29**: 206, 1912.

45. Czerny and Keller: *Des Kindes Ernährung*, 1906.

46. Holt, L. E.: *Diseases of Infancy and Childhood*, New York, 1916.

infants that have been fed for a long time on an almost exclusive carbohydrate diet indicate that they suffer from "Mehlnährschäden." The carbohydrate diet is frequently given in the form of proprietary foods and cereal decoctions to overcome diarrhea. Bloch⁴⁷ applies the term carbohydrate dystrophy to a group of cases in which he found xerophthalmia associated with edema resulting from fat deficiency and a carbohydrate diet. Hume⁴⁸ observed thirteen cases in which edema appeared following gastro-enteritis and vomiting. There was no marked error in the diet to throw light on the etiology of the condition. His observations on salt retention in these infants failed to be conclusive, and as there was no evidence of kidney or heart disease, the pathologic condition was sought for in the tissues themselves. The action of toxins, developed in the gastro-intestinal tract, on the suprarenals or capillary cells is suggested as a possible cause of the condition.

Ashby⁴⁹ finds these edemas following gastro-intestinal catarrh which has persisted for weeks. The gastro-intestinal tract is so deranged that poisons absorbed from it reach the systemic circulation and in this way lower the vitality of the endothelium of the blood vessels, causing an increased permeability. Recurrences were common, and these children seemed to do better on food containing a high percentage of proteins with a low percentage of carbohydrates.

In a review of the literature on osmosis and edema in infancy and childhood, Waterman,⁵⁰ as late as 1914, finds uncertainty as to the methods of the production of this edema. In the light of present knowledge, the weight of evidence seems to be in favor of the chlorid retention theory of infantile or essential edema, although the vascular lesions theory has many points in its favor. The etiologic factors considered by this author are: (1) latent or hidden nephritis; (2) chlorid retention which leads to a hydremia and so to an edema, and (3) increased permeability of the capillary walls.

In reviewing these various etiologic factors, there is evidence that the same type of dietetic and pathologic conditions is found in these edemas in infants as those concerned with war edema and the edemas found in the deficiency diseases of the beriberi type.

A general dropsy is a common symptom in hydremic animals. Friedberger and Fröhner,⁵¹ and Hutyra and Marek⁵² describe this condition as it occurs in draft oxen and horses that work in sugar factories and in other cattle from exclusive feeding on distiller's wash. The disease is chiefly caused by feeding on beet root residue, which contains only about 5 per cent. of solid matter with 95 per cent. of water. As the proportion of proteins in the solid matter is only 1 to 10, the residue contains 0.5 per cent. proteins. Consumption of such food combined with hard work results in hydremia. All tissues are infiltrated and the body cavities filled with transudate.

A similar condition of dropsy or "cachexia aquosa" is found in sheep from insufficient pasturage and unfavorable climatic conditions, such as wet or cold weather, badly situated grazing lands, and penning the

sheep on wet, cold soil.⁵³ Weakness, emaciation, anemia, depression and exhaustive diarrheas accompany this condition.

EXPERIMENTAL EDEMA

Denton and Kohman⁵⁴ find that dropsy occurs in a large percentage of rats fed on a carrot diet, when the proportion of nitrogen is reduced by the addition of some non-nitrogenous foodstuff, such as fat or starch. Kohman,⁵⁵ in further experimental work, produced edema in a large percentage of rats fed on a diet composed largely of carrots. The addition of fats or fat-soluble vitamin, or water-soluble vitamin, or increase in salt content of the diet had no noticeable effect on the occurrence of edemas, but there was much more marked edema when there was much water in the diet than when the animals were on a dry diet. On the addition of a sufficient amount of an adequate protein to the carrot diet without change in caloric value, no edemas occurred and the animals grew normally. Control experiments showed that the edema was not due to toxic products in the carrots, or to starvation from low caloric intake.

Harden and Zilva⁵⁶ observed edema in one of three monkeys fed on a diet complete in every respect, except that it lacked the fat-soluble "A" factor and was low in fat. Each of these animals received a daily diet of from 250 to 300 gm. of boiled, polished rice, marmite, 10 gm., and salt mixture, 2 gm. (The large amount of rice in this diet may have hindered the absorption of the protein.)²⁹

Extensive experimental work was conducted by Holst and Frölich¹¹ in an endeavor to produce ship beriberi in animals. Abortive cases of scurvy resembling ship beriberi were repeatedly seen in guinea-pigs, but although these authors were unable to produce typical ship beriberi they frequently observed edema.

I have carried out a number of dietetic experiments with dogs, rats and guinea-pigs. These animals have been variously fed on specially prepared breads containing much cornstarch in order to reduce the protein content; also, in the case of the rats and guinea-pigs, diets of beets, turnips, cabbage and potatoes with or without the addition of starch bread or plain bread. It has not been possible to carry out this work to the extent desired to make a complete study of the subject; furthermore, the work of Miss Kohman seems to cover the ground sufficiently well. Therefore no details of this work will be published. To summarize the results it may be said that in a number of animals edema was obtained, and that these cases occurred under such conditions as to agree fully with Miss Kohman's conclusions. That is to say, edema was not observed in animals that received a dry diet even when they were allowed to take such water as wanted. Most of the instances of distinct edema were observed in animals that lived on a diet poor in protein and fats and containing much fluid. For example, no edema was observed in guinea-pigs living on potato and rye bread, or on meal bread or rye bread alone; whereas a few of the guinea-pigs living solely on beets or cabbage showed more or less edema. A few rats fed

47. Bloch, C. E.: Xerophthalmia and Dystrophy in Infants, *Ugesk. f. Læger* **80**: 815 (May 23) 1918; abstr. *J. A. M. A.* **71**: 322 (July 27) 1918.

48. Hume, W. E.: General Edema Following Gastro-Enteritis in Children, *Brit. M. J.* **2**: 478 (Sept. 2) 1911.

49. Ashby, H. T.: Practitioner, London, May, 1914, p. 686.

50. Waterman, L.: *Arch. Pediat.* **31**: 135, 1914.

51. Friedberger, Franz, and Fröhner, Eugen: *Veterinary Pathology*, Ed. 6, Chicago, W. T. Keener Company **2**, 1908.

52. Hutyra, Francis, and Marek, Josef: *Pathology and Therapeutics of the Diseases of Domestic Animals*, Chicago, Alex. Eger **1**, 1916.

53. Hoare, E. W.: *A System of Veterinary Medicine*, Chicago, Alex. Eger, **2**: 1290, 1915.

54. Denton, M. C., and Kohman, Emma: Feeding Experiments with Raw and Boiled Carrots, *J. Biol. Chem.* **36**: 249 (Nov.) 1918.

55. Kohman, Emma: The Experimental Production of Edema as Related to Protein Deficiency, *Am. J. Physiol.*, to be published.

56. Harden, A., and Zilva, S. S.: Edema Observed in a Monkey Fed on a Diet Free from Fat-Soluble "A," Accessory Food Factor and Low in Fat, *Lancet* **2**: 780 (Nov. 1), 1919.

solely on a carrot diet also showed edema. In one of these the visible edema disappeared when casein was added to the diet and returned when the animal was again restricted to carrots. This work adds nothing to Miss Kohman's observations, but furnishes merely a certain amount of additional corroboration.

GENERAL CONCLUSIONS

It will be seen that the final conclusions reached by those who have studied war dropsy are in extremely close accord. This condition seems not to be a typical "deficiency disease" in the sense of being the result of a deficiency in one or more specific unknown constituents (vitamins) in the diet. In a broader sense it is, however, a deficiency disease, and is the result of a protracted existence on a diet deficient in total calories, especially in protein. Undoubtedly, a high fluid intake, and possibly a high salt intake, are important accessory features. Hard work and exposure to cold are factors simply in that they increase the caloric deficiency of the food supplied.

It is gratifying to find that the experimental work agrees perfectly with the clinical evidence in establishing that a combination of low calories, low protein and excessive fluid intake will lead to a marked dropsy corresponding to war dropsy in all respects. The importance of specific vitamins seems to be excluded by these experiments.

Undoubtedly, dropsy occurring in many conditions associated with either defective food supply or absorption (as in some types of infantile dropsy) or in conditions of protracted anemia or cachexia is essentially the same as war dropsy. Hence the general term "nutritional edema" is to be recommended for this class of cases.

THE CAUSE OF ABSCESS OF THE LUNG AFTER TONSILLECTOMY

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Reports of abscess of the lung following tonsillectomy have been appearing regularly in the literature during the last six years. Such cases are occurring fairly frequently in the practice of every man who pays any special attention to chest disease, and it is within the last few years that their presence has been so particularly noticeable.

What is the cause of this complication? Why has it made its appearance only lately with such frequency?

The first report of a case that I find is by Bassim.¹ I have not, however, been able to verify the reference. Shortly afterward Scudder² referred to it. The most comprehensive paper is that by Manges,³ published in 1916. Manges reports nine cases, in one of which the patient died. He discusses causation under the heads of (1) anesthesia; (2) aspiration of infected blood or of pieces of tonsillar tissue; (3) embolism, or infarction of the lung; (4) some special infective agent, and (5) some antecedent cause.

Perhaps only the last two heads need any explanation. Under the subject of some special infective agent he refers to three of his patients who were operated on in the same hospital, not far apart, and he

thought that possibly the fact that they acquired their disease at the same place and the same time bespoke the exposure to an infection with special pulmonary affinity.

For an antecedent cause he warns against operating when the patient has a cough, etc.

Manges made some statements in 1916, based on his own experience, which he probably would not repeat now. He states, for instance, that "abscess of the lung should never occur if the patient has been properly treated." He goes on to say that abscess of the lung never occurs after tonsillectomy in private practice. This is, of course, not true. Richardson,⁴ who published an article shortly after Manges, says that tonsillectomy is never a minor operation in an adult. He thinks these patients need more after-treatment than they get, and that every patient who is to have a tonsillectomy should have a thorough physical examination.

Coakley⁵ discussed the matter with particular reference to Manges' paper. His remarks are somewhat critical of Manges. He says that all his patients are carefully examined before a tonsil operation, and asks Dr. Manges to state just what he would consider a complete examination, and specifically just how it would prevent any lung abscesses.

Manges thinks, or thought in 1916, that all these cases were due to careless treatment on the part of the operating surgeon. He is, however, very hazy as to what was done that was careless. He thinks the head should be lowered during the stage of anesthesia and that the patient should be carefully examined before the operation to see that he has no pulmonary infection.

No idea of etiology has been advanced which bears the test of close scrutiny. It is admittedly true that poor physical risks, that patients with fresh tonsillar infection, and patients with acute respiratory disease are not good subjects for tonsillectomy. But carefully examined patients, persons of all ages in the best of health other than their tonsillar disease, patients with no respiratory infection, and patients surrounded with every care, attention and operative safeguard all get abscesses occasionally when their tonsils are removed by a skilled operator. The subjoined case is cited as an example of one occurring when every care was exercised:

An unmarried woman, aged 36, had her tonsils removed, July 1, 1918, on account of frequent attacks of tonsillitis. Her general nutrition was poor, and it was thought that the removal of the tonsils would improve that condition. The operation was performed in a hospital under general anesthesia. The anesthetic was administered by Dr. H. C. Anderson, who has devoted special attention to anesthetics for twenty years, and has had his widest experience perhaps in nose and throat operations. Furthermore, he took particular pains with this patient as she was a valued friend and co-worker. The operator was Dr. J. M. Patterson, a skilful and careful nose and throat surgeon. The anesthetic was gas-ether with a suction tube, and the flow of ether was maintained by a small pump engine. Every precaution was taken against aspiration of blood or infective material. The suction tube was never out of the patient's mouth. The operation was not troublesome and there was no excessive bleeding, either during the operation or later.

The after-course was instructive. The history of lung abscess began while the patient was on the table. She began to cough immediately after the operation was completed, and continued after she was put to bed. Only after the administration of one-half grain of morphin in divided doses was it

1. Bassim: Thèse de Paris, 1913, No. 181.

2. Scudder, C. L.: Boston M. & S. J. **171**: 523 (Oct. 1) 1914.

3. Manges, M.: Am. J. Surg. **30**: 78 (March) 1916.

4. Richardson, C. W.: Laryngoscope **26**: 1001 (July) 1916.

5. Coakley: Laryngoscope **26**: 1008 (July) 1916.

at all controlled. After the patient got up and around she continued to cough. In the course of a few weeks she lost several pounds, and with her coughing brought up a thick mucopurulent expectoration. The sputum was examined repeatedly for tubercle bacilli, always with negative results. A vaccine was prepared and administered without benefit. About two months after the operation she went to Colorado and stayed some time, but was not improved.

About eight months after the operation, examination of the chest revealed these physical signs:

Heart: No hypertrophy; sounds muffled but clear; pulse regular and strong, rate of 70 to 80.

Lungs: Percussion of right side in front, hyperresonant. Impaired percussion note in back at base. Whispered voice over this area heard faintly. Vocal resonance increased. On auscultation from angle of scapula down, fine crepitation on inspiration and beginning of expiration sometimes distinct, sometimes faint. Lungs otherwise unimportant. Apexes quite clear.

Roentgenoscopy revealed an indefinite shadow on the right side.

A puncture was made on the right side in March, 1919. The needle did not produce any pus for some time, and then at the third puncture entered apparently an air space, and a few flakes of pus and tissue were drawn up.

The patient refused thoracotomy.

In September, 1919, she submitted to a pneumothorax artificially produced on the right side, which has given some relief.

COMMENT

Here is a case carefully cared for by a careful man. The symptoms of lung abscess began immediately.

Motor driven anesthesia apparatus used in tonsil operations may be responsible for the inspiration of septic material and the resulting lung abscess.

I do not here refer to the suction feature of these machines, but to the motor which forces the ether vapor into the pharynx. These ingenious little mechanisms force ether into the posterior pharynx, under what is really a very high pressure. The pressure balloons out the posterior space, and is sufficient to create an air current that would force pus, infected blood clots, or infected pieces of tissue past the glottis into the lung. Its pressure is continuous. It impedes coughing. Even with the head in a low position the material accumulates there, and is forced downward.

These motors furnish a very good field for the operator. But most of our lung abscesses have resulted since their introduction. Neither Manges nor Richardson publishes facts which let us know whether motors were used in their cases. I have records of two other cases in which they were used. In both these cases a lung abscess developed after a tonsillectomy in which a motor-driven apparatus was used for anesthesia. In two other cases, bronchopneumonia developed under the same circumstances. Certainly the use of these motors should be discontinued until we are able to determine whether they operate as a cause of the distressing, crippling and hideous sequelae of tonsil removal.

In those cases in which no motor-driven apparatus was used I have turned as an explanation of the etiology to other facts.

There is a relation between the tonsil and the lung which has not sufficiently been dwelt on. I will cite briefly one case as an illustration:

A man, aged 44, complained of continued cough. It had followed an attack of influenza, and had continued several months. He had been told he had tuberculosis. Physical examination, sputum examination and roentgenograms all made this doubtful. The signs in the lungs were, in fact, completely negative. Yet he spit up about half a pint of

material a day. The tonsils were found badly infected. After their removal, the cough and expectoration promptly cleared up.

In other words, I believe that there is a path of infection directly from the tonsil to the lung, probably through the lymph glands. Definite information on the subject, however, is curiously lacking. The description of the lymphatic drainage of the tonsils in the standard textbooks on anatomy are very vague on the lymphatic chain after it reaches the deep cervical. However, Grober's⁶ experiments with India ink seem to indicate that there is a direct pathway between the tonsil and the apex of the lung. The tonsils have long been regarded as a possible primary focus of infection in pulmonary tuberculosis.

The relation of infection of the tonsils to the lungs is so close that operators should think seriously of it. When the tonsils are removed, there has been opened up a large area of raw surface, ready for any septic infection and possibly draining directly into the lungs.

Let that area alone. I do not know exactly how much dabbling around tonsil operators do on this surface, but it is my impression that they do a great deal. I see no good reason for trying to get out every particle of tonsillar tissue; it is nearly impossible anyway unless done at the first step of the operation. Stop swabbing it, fingering it, poking around in it. There is another aspect to the matter: Tonsil operators, to retain the confidence of the rest of the profession, must find some way to control hemorrhage, so that we do not have this dangerous packing and handling of a raw surface in the face of a septic cavity ten or twelve or twenty-four hours after it has been opened up. One of Richardson's cases of lung abscess occurred after a postoperative hemorrhage.

CONCLUSIONS

1. Lung abscess is at present a frequent sequel to tonsillectomy.
2. It occurs in all classes of cases—in private as well as in free services.
3. It is sometimes fatal, always serious and often very crippling.
4. It is due in some cases to inspiration of infected material.
5. Motor-driven anesthesia apparatus, by creating a positive pressure in the pharynx, may operate as a cause. At any rate, the danger is sufficiently great to justify the discontinuance of their employment until comparative data can be secured.
6. It is due in some instances to metastatic infection through the lymphatics.
7. Swabbing or tampering with the throat after enucleation has been accomplished is the cause of one group of cases.

6. Grober, quoted by Ballenger: Diseases of the Nose, Throat and Ear, Philadelphia, Lea & Febiger, 1911.

Insecticides.—Such substances as coal oil, gasoline, and benzine are very good insecticides for such more or less stationary parasites as the louse and the bedbug. They act by covering the breathing pores of these insects, and so smother them. These oily substances are also very useful in campaigns against mosquitoes in which they are used to form a coating over ponds and other bodies of water harboring mosquito larvae, thus smothering them with the film on the surface of the water which the larvae and pupae are unable to pierce with their breathing tubes.—U. S. Nav. M. Bull., January, 1920.

HAND AND FOOT PRINTS AS RECORDS IN LESIONS OF THE PERIPHERAL NERVES

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Graphic methods of recording signs and symptoms
in many instances have a greater value than descriptive

fingers except the tips. The hypothenar muscles are seen to be atrophied by the presence of a notch on what normally consists of a rounded contour made by these muscles (Fig. 1 *a*). Between the mounts of the ring and middle fingers is seen another notch, and when the atrophy is very severe a notch appears between the ring and little fingers as well (Fig. 1 *b*). The fingers cannot be spread apart, and the first phalanx of the thumb is in a position of extension. The atrophy of the adductor pollicis is seen by a break in the line along the radial border of the base of the index finger (Fig. 1 *c*).

Median nerve lesions show very clearly the disturbance of the whorl formation on the tips of the index and middle fingers (Fig. 2 *a*). When severe clawing is present in these two fingers it is marked by the imprint of the very tips, frequently including the nail. The atrophy of the thenar eminence is usually well marked, and is shown by the prominence of the base of the thumb and a considerable notch in the normally rounded contour of the radial border of the thenar eminence (Fig. 2 *b*). The distal phalanx of the thumb is in extension. When severe clawing is present it is made evident by the absence of any imprint of the central portion of the palm. Not only is the atrophy of the thenar eminence noted by the notching proximal to the base of the thumb, but in many instances the loss of tissue is demonstrated along the radial border of the first phalanx of the thumb (Fig. 2 *c*). The



Fig. 1.—Imprints in a case of ulnar nerve lesions: *A*, affected; *B*, affected; *C*, affected; *D*, normal; *E*, affected; *F*, affected; *a*, notch indicating atrophy of hypothenar muscles; *b*, notch between mounts of ring and middle fingers indicating atrophy; *c*, break in line along the radial border of the base of the index finger, indicating atrophy of the abductor pollicis.

methods. Frequently it is impossible to have photographic records of the hands and feet in cases of peripheral nerve lesions; under this condition I have found it serviceable to record the contour of the palm and sole, by making impressions of the hand and foot.

Attention has been called to some of the changes seen in the conformation of the whorls of the skin in the various peripheral nerve lesions.¹ Imprints of the hands and feet are of greater value, however, than to demonstrate such changes alone. Not only is the position of the hand determined, but the atrophy of muscles and contractures are shown as well. Only five of the peripheral nerves show distinctive changes in a sufficiently large percentage to make it profitable to study the lesions by this method. These nerves are the ulnar, median, radial, internal popliteal and sciatic. The picture produced by a combined lesion of the ulnar and median is likewise distinctive. When the external popliteal nerve lesions show a characteristic picture, it is the same as that produced by lesions of the internal popliteal nerve.

Imprints of the hand in a case of a lesion of the ulnar nerve show the following characteristics: The clawing of the inner two fingers is well demonstrated by the absence from the imprint of any part of these



Fig. 2.—Imprints in case of median nerve lesions: *A*, affected; *B*, affected; *C*, normal; *D*, affected; *E*, normal; *F*, affected; *G*, normal; *a*, disturbance of whorl formation at tips of index and middle fingers; *b*, prominence of base of thumb and notch in contour of radial border of thenar eminence indicating atrophy of thenar eminence; *c*, loss of tissue along radial border of first phalanx of thumb; *d*, failure of desquamation and presence of many new lines over thenar eminence.

failure of desquamation and the presence of many new lines is demonstrated over the thenar eminence (Fig. 2 *d*).

Radial nerve lesions are characterized by the cramped appearance of the fingers which results from the inability to place the palm on the paper in a flattened

1. Cestan, R.; Descamps, P., and Euzière, J.: Bull. et mém. Soc. méd. d. hôp. de Paris 40: 652 (May 5) 1916.

position. The most characteristic feature of this imprint is the position of the thumb, which is adducted, the distal phalanx falling within or on the border of the outline of the index finger. The thumb is rotated about its own axis inwardly so that the imprint of the radial border of the distal phalanx is straight and not rounded, because of the thumb nail. The distal phalanx of the thumb is usually flexed. Absence of the

THE THÉZAC-PORSMEUR METHOD OF SUN TREATMENT

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In the spring of 1919, a new method of applying heliotherapy by means of a lens was called to my attention by Mrs. Edward C. Post of Newport, in whose sanatorium at Porsmeur, Morlaix, Brittany, it had been used. The lens had been called to her attention by M. de Thézac, and was put into practical use at the sanatorium by Miss Helen Whidden, the trained nurse in charge of the day camps, who was familiar with the Rollier and Malgat methods of sun treatment. Another treatment by a lens has been described by Artault.

In this paper I shall describe a series of carefully observed cases of chronic suppuration in the orthopedic service at the Children's Hospital, in which the treatment was by the Thézac-Porsmeur method. Miss Helen Whidden, who had charge of the treatment in France, was so good as to devote three months to the demonstration of it at the Children's Hospital.

The essential of the treatment is the concentration of the sun's rays by means of a double convex lens with a diameter of 12 inches and a focal length of 72 inches. At the focal point, of course, the heat is very great, as it would be in any lens used



Fig. 3.—Imprints in case of radial nerve lesions: A, affected; B, affected, musculospiral, operated on, April 22, 1919; C, normal; D, normal; E, affected, paralyzed abductor pollicis; F, normal; G, affected, musculospiral, operated on, April 4, 1919.

signs of atrophy of the thenar and hypothenar eminences is an additional feature of this form of lesion.

In combined lesions of the ulnar and median nerves, signs of atrophy of both the thenar and the hypothenar eminences are demonstrable by means of the notches found along their borders (Fig. 4 a). Clawing is present in all four fingers. The mounts are often separated (Fig. 4 b). The center of the palm shows a larger area in which no imprint is seen. When, in addition to the ulnar and median, the radial nerve is involved, the thumb shows at times the same rotation as was observed in radial lesions.

In lesions of the external popliteal nerve there is frequently seen a flattening of the toes, so that the plantar surface of the entire length of a toe will produce an imprint.

Lesions of the sciatic nerve show in addition to a slight pes cavus in some cases, a clawing of the toes indicated by the absence of their imprint on the paper.

It may be stated that, although by no means diagnostic, such records are of considerable value in determining the progress of the condition of atrophy and deformity in peripheral nerve lesions.

The imprints are very easy to take, and require a minimum of time for the amount of record produced.

25 East Washington Street.



Fig. 4.—Imprints in case of ulnar and median, and ulnar median and radial lesions: A, ulnar and median; B, normal; C, ulnar and median; D, ulnar and median; E, ulnar and median; F, ulnar median and radial; G, brachial plexus; a, notches indicating atrophy of thenar and hypothenar eminences; b, separated mounts.

as a burning glass, and in general the patient should be placed at a point where the sun's rays form a circle of from 3 to 5 inches in diameter.

As the patient is moved farther away from the lens, the heat increases, and as the patient is moved nearer

the lens, the heat diminishes. The degree of activity to which it is desirable to submit the wound can be regulated by carrying the lens nearer the patient or farther away.

The lens is mounted in a canvas cylinder, 1 foot in diameter and 3 feet in length, which is kept rigid by two circular wires with thin strips of wood running from one hoop to the other, over which the canvas is stretched. The lens is placed a few inches from one end of the cylinder. The advantage of this cylinder is that it enables the lens to be pointed directly at the patient and makes the application of the treatment more definite. The cylinder carrying the lens is mounted on a tripod and can be swung in any direction by means of a handle.

The duration of the sun treatment should lengthen progressively. The first treatment should last for five minutes and increase at the rate of about five minutes a day up to thirty minutes. In a certain case a longer period up to an hour and a half was used without apparent ill results. The skin around the wound was as a rule protected by towels, and the person giving the treatment wore colored glasses, as the light is extremely bright, and the eyes of the patient were protected if exposed to the glare of the circle of light. The patients were given one treatment a day.

The effect of the treatment on suppurating wounds was perfectly definite: (1) The discharge immediately increased and then diminished; (2) pale granulations took on a healthier color, and (3) sensitiveness diminished. In order to test the efficacy of this treatment, a series of suppurating wounds of the severest type was selected, and cases that were obviously difficult. In the wards in a hospital for acute cases it was necessary to select a more acute type than would have been the case in an institution for chronic diseases, as patients that were doing well were discharged to the convalescent home on account of the need of beds, and chiefly the chronic suppurations that were resistant remained long enough to be observed under this treatment.

The cases here reported were observed by members of the staff, and records were dictated by them as to the progress of the cases.

REPORT OF CASES

CASE 1.—*Tuberculosis of the Hip.*—M. M., a boy, aged 7 years, had had tuberculosis of the left hip of one year's duration, during which time in spite of treatment he had made bad progress and showed very little resistance. The von Pirquet reaction was positive, and he had had some abscesses. He seemed to have no power of repair, and had large areas of pale, flabby granulations which were melting down into larger ones, with much glandular involvement. Operation seemed out of the question on account of the extent of the infection, which extended half way to the knee. In April his parents were advised to take him home, as the case seemed hopeless. This they were unwilling to do. In May he was very much emaciated and septic. There were two sinuses around the hip, and a granulating area 4 inches long in his leg. He was extremely sensitive to motion and very lethargic. From May 1 to August 27 he received fifty-five sun treatments.

June 19, the wound was smaller and looked more healthy. Sensitiveness was much diminished, but the temperature remained high. Discharge had increased, the bacterial count had fallen from 25 to 4 streptococci, and from 15 to 2 staphylococci, and the pyocyaneus had disappeared after five days.

July 7, the wound on the leg had nearly healed, and the general condition had greatly improved.

July 31, the lymph nodes had diminished greatly in size.

August 6, the temperature became normal in the morning, but rose in the afternoon to 100 or 101.

August 27, when the treatment was discontinued, the large wound had nearly healed, the boy was well nourished and had a good color, and he was happy and full of interest.

Here was a serious tuberculosis of the hip regarded as hopeless, whose repair was definitely stimulated, and whose local and general condition was greatly improved after treatment was begun. As for months previous to this the patient had been going down hill, and as no other change in

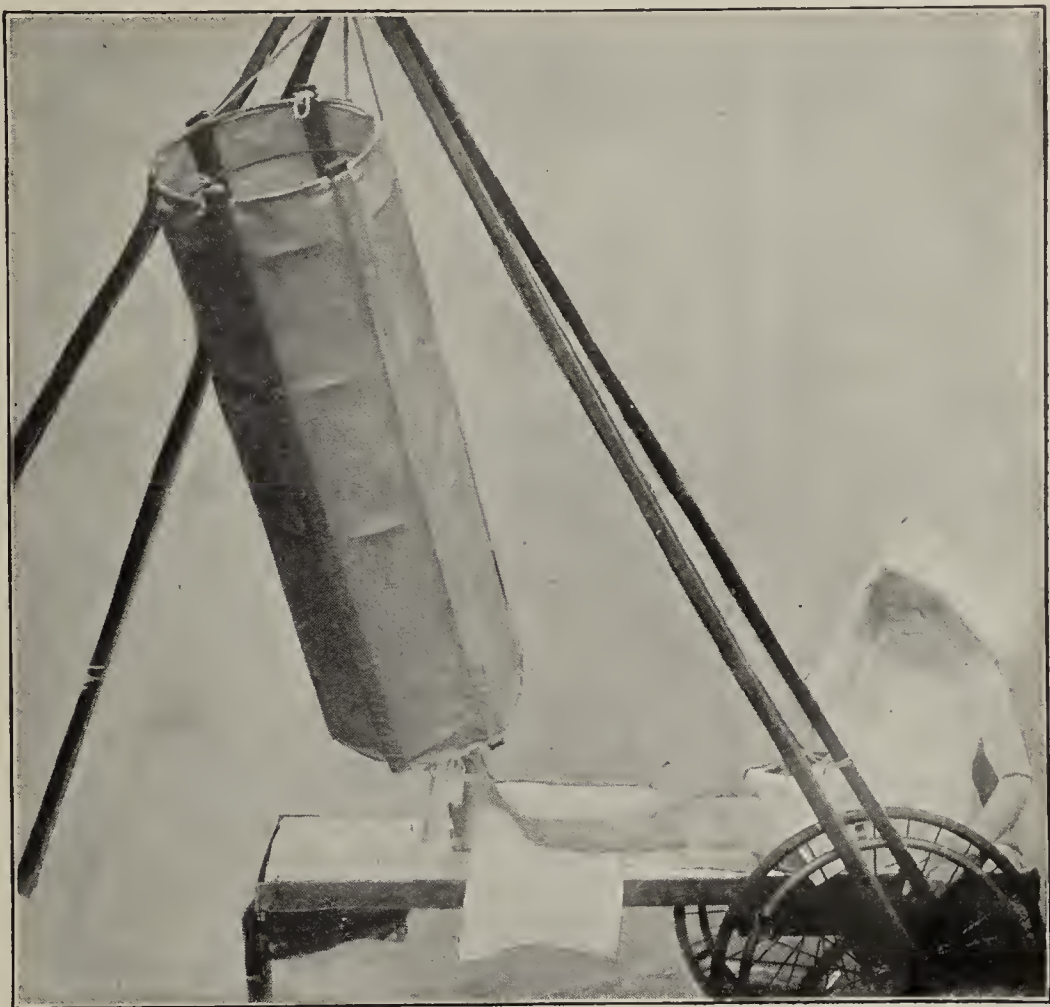


Fig. 1.—Method of applying lens treatment.

his treatment had been made, in the opinion of all who observed him the gain was to be attributed to the treatment by the lens. The bacterial count did not remain permanently low, but the streptococci rose slightly, August 20.

CASE 2.—*Congenital Syphilis.*—M. S., a girl, aged 12 years, had had congenital syphilis with destruction of bony tissue of the right ulna, and extensive skin ulcerations of three years' duration. There was an affection of the right wrist of one year's duration, the diagnosis apparently not having been made. Numerous small sequestrums were present in the wound, which were detached as they became loose. There was an ulcer at the elbow joint 3 inches in diameter with regular sharp edges and exuberant granulations which were greenish looking and soft; there was an ulcer at the lower third of the forearm, ulnar side, sloughing and discharging freely, and a roentgenogram revealed destruction of bone beneath both of the ulcers mentioned.

The patient was given thirty-three sun treatments aggregating twenty-one hours, covering a period from May 8 to August 5. The elbow was treated by heliotherapy. The patient had been receiving antisyphilitic treatment and the wound on the elbow had nearly healed, but the wound on

the wrist showed no disposition to heal and remained open. The Wassermann reaction was positive, and since April 3 the patient had been given 5 grains of potassium iodid three times a day with 2 grains of mercury with chalk. Later, no improvement occurring, the wound was dressed with mercury ointment and the patient was given arsphenamin intravenously, April 26, and three subsequent doses in the early part of May. The mother's Wassermann test was reported positive. In two months the elbow had entirely healed except for a small place where a bone spicule was protruding; and at discharge, both wounds were healed. The bacterial count fell from an average of 25 streptococci in the first four exposures to an average of 8 in the last four before the wound closed, and the staphylococci fell from 6 to 3.

This was a case of long-continued bone suppuration from syphilis which had been under antisyphilitic treatment without healing of the wound. The case was very extensive, and although the patient was having the antisyphilitic treatment, the improvement seemed to begin only when the sun treatment was started. The effect was most striking in the very rapid healing of the wound which began after the heliotherapy was commenced.

CASE 3.—*Acute osteomyelitis of left femur*.—A boy, aged 8 years, had acute osteomyelitis of the left femur. The involved area was incised, April 20, 1919. May 16, when the sun treatment was begun, there was profuse drainage and a temperature running at night often to 104. June 2 the sun treatment was discontinued. It was tried, June 27, but was again discontinued. July 3 it was begun again. August 27, when treatment was discontinued at the hospital, the wound was beginning to close and the discharge was small. The patient had to be operated on in October, 1919, and received Carrel - Dakin treatment, and on November 26 the wound was practically healed. The temperature was normal for two months, since September.



Fig. 2 (Case 2).—Appearance of arm in May, 1919.

Only twenty-six treatments, aggregating nine hours in all and covering 100 days, were given, the treatment having been interrupted by extensions of the process in the bone. The bacterial count did not fall, but the wound made good progress and grew smaller, the color of the granulations improved, and the sensitiveness diminished during the periods of insolation. The case showed that the treatment was not as well adapted to acute osteomyelitis as to the more chronic conditions, although it seemed to have a stimulating effect on the discharging wounds; but the process in the bone was still progressing, and nothing but operation could give final relief.

CASE 4.—*Cellulitis of right tibia*.—A girl, aged 8 years, had cellulitis of the right tibia. The involved area was incised, June 12. When sun treatment was begun there was a wound 3 inches in length, and at the back of the leg a wound 7 inches in length with considerable discharge. When the sun treatment was discontinued there remained only two small areas, one at each end of the anterior wound, which were quite dry, the posterior wound leaving a strip 3 inches long and one-fourth inch wide which persisted, which it was deemed more rapid to close by suture.

There were twelve sun treatments, covering a period of thirty-six days between June 24 and July 31. During the sun treatment the wounds became less sensitive and much healthier in character. The streptococci were reduced to about one third of what there were at the height of the infection, but the staphylococci, which were about 5 to a field at the beginning, remained about the same. The patient was discharged in good condition, August 20.

This was a case of suppuration of the soft parts, with no bone involvement, in which the sun treatment had a very stimulating effect on the closure of the wound.

CASE 5.—*Acute osteomyelitis*.—A girl, aged 11 years, with acute osteomyelitis, underwent operation, March 19, with incision and drainage. A second operation was necessary, July 1, and on July 12, when the sun treatment was begun, there was a very sensitive wound, draining profusely with a foul smelling greenish discharge. Twelve treatments in all were given, covering a period of forty-three days.

July 31, it was noticed that the wound was in decidedly better condition.

August 27, there remained only a small granulating surface about one-fourth inch in diameter, which was the opening of a small sinus. At the outside of the leg there was a small granulating surface communicating with the bone. The general condition was much improved and, August 28, the wounds were discharging very little, and the patient was sent to the convalescent home. The bacterial count of streptococci remained about the same. The case was regarded as having made better progress than it would have done without the sun treatment. This was an exceedingly deep-seated and resistant suppuration which immediately improved on the beginning of the sun treatment.

CASE 6.—*Osteomyelitis of right tibia and left foot*.—A boy, aged 9 years, who had osteomyelitis of the right tibia and left foot since April, 1919, was operated on for bone drainage, June 4. When the sun treatment was begun, the wound of the tibia was 17 inches long and 2 inches wide, discharging profusely. Twenty-two treatments were given between June 28 and August 27, a period of sixty-one days. July 24 a loose piece of bone found in the wound was removed. August 28, the wound was almost entirely closed, and the wound on the foot healed quickly, leaving three small sinuses. Later a small ulceration developed in the scar. The patient was discharged September 19. It was evident that from the beginning of the sun treatment the case healed with unusual rapidity.

CASE 7.—*Osteomyelitis*.—A boy, aged 10 years, having osteomyelitis, received twenty-six sun treatments covering a period of sixty-eight days between May 24 and July 21. He had been in the hospital eight times since 1916, and had had several operations. When the sun treatment was begun there was a wound at the right area above the elbow $3\frac{1}{2}$ inches long, penetrating to the bone. July 15 the wound had healed except for a small area $\frac{3}{8}$ inch long and $\frac{1}{8}$ inch wide, at the center of which was a sinus communicating with bone. Streptococci fell from 25 to 4, and staphylococci from 10 to 2. This was a chronic low grade osteomyelitis apparently aided in the healing process by sun treatment.

CASE 8.—*Tuberculosis of the spine*.—A girl, aged 5 years, who had had very bad home surroundings, had a high dorsal tuberculous spine with pressure paralysis and involvement of sensation. A large ulceration developed on the back because of this lack of sensation, and wherever pressure was exerted a new ulceration developed. The sun treatment with the lens was inaugurated, May 8, and continued to May 31, to determine whether it would improve the sloughing on the back. The ulcerated area became smaller, but as the disturbance was evidently trophic in character the sun treatment was abandoned, as it was a case in which it was not likely to be of use.

CASE 9.—*Osteomyelitis*.—A girl, aged 10 years, with multiple osteomyelitis dating from October, 1916, had undergone several operations. Sun treatment was instituted in an abscess on the forearm 2 inches long and one-fourth inch wide. Eighteen treatments were given between May 8 and July 1, with the lens, and twelve sun baths. The wounds became cleaner and smaller, and on account of the child's having developed new foci, sun baths were instituted. At the end of the combined treatment with the lens and sun

baths, the wounds on the arm had nearly healed. The general condition was much improved. Pain had diminished.

The case was a very difficult one, under observation and treatment for many years, and very resistant to everything that had been attempted. The combination of lens treatment and sun baths seemed to have the effect of improving the healing process.

CASE 10.—Nontuberculous arthritis.—A girl, aged 7 years, who was poorly developed and nourished, had nontuberculous arthritis, which was most marked in the left knee, though there was some involvement of other joints. Blood culture was negative. The patient received six sun treatments between June 21 and July 3. No change in the condition of the joint was noted. Treatment was too short for any definite conclusion to be drawn, and the case was not suitable on account of its multiple character.

CASE 11.—Cervical Pott's disease with abscess.—A girl, aged 2 years, had a discharging tuberculous abscess. Sun treatment was started but abandoned because of the lighting up of the disease. Only seven treatments were given between June 21 and July 1, as the disease was increasing in the spine. The case was inconclusive.

CASE 12.—Dactylitis of the left hand and ankle.—A girl, aged 6½ years, had had dactylitis of the left hand and ankle of two months' duration. The case was clearly tuberculosis, and the bone was extensively involved. The von Pirquet reaction was positive. The pus from the finger was proved tuberculous by an inoculation in a guinea-pig. Eight sun treatments were given, and the parents took the patient home. No conclusion from the sun treatment can be drawn.

COMMENT

In my opinion and that of my associates, there was greater progress in the cases treated by the lens than there had been before, or than there had been in similar cases. Improvement in Case 1

was striking. The boy had been a long time under observation, he had made no headway whatever, and from the time the lens treatment was begun his improvement was rapid and steady. In two acute osteomyelitis cases in which the treatment was used within a week after operation, it seemed to be too stimulating, the temperature rose, and the sun treatment had to be deferred.

For six years I have had experience in sun treatment in which the whole body has been exposed, and I am a strong advocate of its value. I am equally convinced that the treatment with the lens is a distinct addition to our therapeutic measures, as it possesses decided advantages. It can be delicately regulated and controlled; it is applicable when the sun is sufficiently clouded to be useless for general exposure; and it can be used in a sunny room by opening the window and pointing the cylinder at the sun. It seems free from risk when used according to directions, and it seems to embody real possibilities.

A bacterial count was made in all cases at short intervals, and a study of the cases shows that the effect of the sun treatment was to lower immediately the bacterial count in the discharge in the wound; but in several of these cases there was underlying suppuration, and the bacterial count was naturally not affected.

The value of the treatment would seem to have been demonstrated in cases of chronic suppuration from tuberculosis, syphilis and chronic osteomyelitis.

234 Marlborough Street.

THE TREATMENT OF INJURIES TO ATHLETES

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NEW HAVEN, CONN.

We are now seeing a greatly increased participation in the various forms of athletics, especially of those types which are classed as the "vigorous fighting games of youth"—football, basketball, soccer, boxing, etc. The war has had a marked effect in stimulating participation in these sports. By contrast, also, the injuries that so often accompany indulgence in them now seem so trivial that many restrictions, especially against football, have been removed. The physician may therefore expect to see a great deal more of the special types of injury that occur in athletics than he has heretofore been called on to treat.

There are many comparatively new forms of physical treatment being thoroughly tested out in the physiotherapy departments of our army and Public Health Service hospitals which are especially applicable to the treatment of athletic injuries. Much of the good accomplished has been the direct result of the skill and untiring effort of the reconstruction aides—

young women well trained in the various branches, such as massage, electrotherapy, exercise and thermotherapy. They constitute a group having exceptional preliminary training and wide experience, and have not been deeply grounded in any one so-called "system" of treatment. These

young women are becoming available in increasing numbers, and are capable of rendering the physician invaluable help in treating many types of cases.

That physician who will spend the brief time necessary for a person with his background to inform himself regarding the technic, indications and contraindications of the simpler forms of physiotherapy will be richly repaid for his labor. He is often too busy to give these treatments personally, but he needs rather detailed knowledge in order to prescribe them properly. For instance, to order "massage" in a given case without seeing to it that the type used, duration and method of application are correct is almost as vague as to order medicine without stating the kind or the dosage. For example, hacking or deep kneading might be absolutely contraindicated in a given case, when gentle and long continued stroking would be of great value.

The treatment of athletic injuries is often a complicated problem. The patients are usually young and in exceptionally good general health. Focal infections do not, as a rule, play a part in delaying recovery, but they must be kept in mind. On the other hand, we have two difficulties to contend with: the necessity of using the injured member slightly at the earliest possible moment, as would be necessary in signal practice, kicking or goal shooting, in order to keep in touch with the game. In addition, pressure on the part of the coach and their own eagerness to resume play sub-

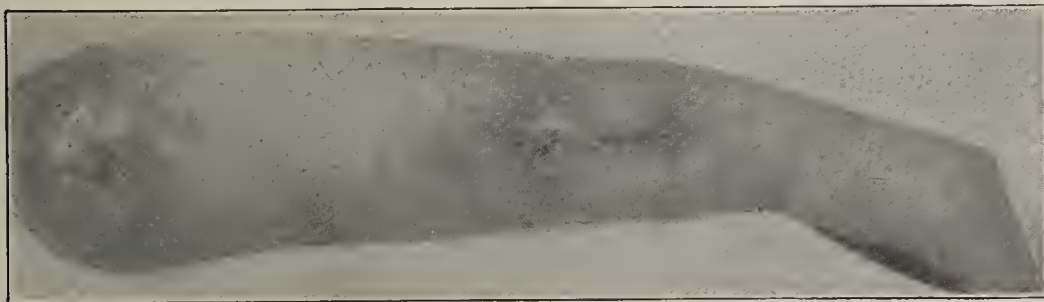


Fig. 3 (Case 2).—Appearance of arm in July, 1919.

jects these patients at the earliest possible moment to the very severe strain of the full contest. Time is always the most important factor.

The application of the various types of physiotherapeutic treatment to injured men of a university football team last fall brought very satisfactory results, and it is with the hope that interest will be stimulated in the conservative use of these treatments by the profession that this paper was written. The patients treated were referred through the courtesy of Drs. Townshend, Greenway and Cook.

CLASSIFICATION OF INJURIES

Most of the injuries due to athletics fall into one of these classes: (1) muscle bruise; (2) torn ligaments; (3) torn muscle insertions; (4) subperiosteal hematoma, or (5) tenosynovitis.

Muscle Bruise.—This injury is perhaps the most common we meet in football players. It is usually caused by the shoulder of the tackler hitting the runner with great force on the front of the thigh. There follows at once pain, weakness, swelling and stiffness of the extensors of the leg.

The pathologic condition varies with the force of the blow and the hardness (condition) of the player. There may be only a slight bruising, which massage at once and continued light use will entirely eradicate. Generally, however, the muscle fibers will be found torn and matted together with considerable extravasation of blood and lymph.

The muscle should be relaxed, bandaged firmly, and rested twenty-four hours. After that period, treatment by the application of heat is begun. Baking is good, but does not penetrate deeply as the high frequency does. This current is usually given in the form of direct diathermy. A still more efficacious and better controlled method is by indirect diathermy. With the patient on the autocondensation pad or cushion attached to one pole of the d'Arsonval current, the other pole is applied directly over the injured muscle by the vacuum or, better still, a nonvacuum electrode. It is important to keep this electrode moving rapidly over the surface. A little powder applied to the skin will aid in the ease with which the electrode can be moved. Care must be taken that the cords are well insulated; a piece of rubber tubing will serve the purpose. If a steel table is used, one should avoid any possibility of the patient's touching the table during the treatment.

Massage is begun the second or third day, very gently at first, only effleurage (stroking) and light pétrissage (kneading) being used. During succeeding days the massage should be given with greater vigor. Tapôtement (hacking) or even the high powered motor vibrator may be necessary to free the muscle fibers. These measures should be resorted to at once when the case is not seen until several days after the injury.

In a few of the cases the injury was at first deemed slight and received vigorous treatment at the hands of

the team "rubber." Here capillary bleeding was again set up, with increased disability the following day. In very slight bruises this treatment would do no harm.

Torn Ligaments.—Sir Robert Jones has given us the key to the proper treatment of these injuries: relaxation, partial protection, and guarded but constant use. Let us take, for example, a tear of the external lateral ligament of the ankle. Raising the outer side of the heel and a reversed flat-foot strapping would secure the relaxation and protection necessary. Gradually increased walking on the level with a graded schedule of carefully applied passive, active and resistive movements will bring quicker results than complete immobility, which is often followed by a long period of distressing stiffness. In addition, the use of heat, diathermy, and massage will greatly hasten the repair process.

Torn Muscle Insertions.—These injuries are encountered in football and basketball, but are most common in track athletics, frequently following sprints and sprint starts before the runner has thoroughly warmed up. The general course of the treatment is the same

as that already outlined, except that the relaxation must be complete, secured by splints or sand bag, if necessary, and held for at least two weeks before active treatment is instituted; and care must be taken not to tear the newly formed attachment.

Subperiosteal Hematoma.—This is the true "Charlie horse" for which the muscle bruise is so commonly mistaken. It should be treated by rest and firm bandaging until the hemorrhage has stopped, and then by heat and massage to promote absorption of the clot. The massage should be confined to frictions and deep stroking.

Tenosynovitis.—We find this condition early in the season in most sports, and generally confined to the Achilles tendon. It may follow the distance runner all through the track season. Acute conditions demand absolute rest, heat and gentle stroking. I have seen a number of chronic cases in college and preparatory school runners lately which cleared up with remarkable rapidity when treated with indirect diathermy and massage. In some of these cases the tendosynovial fluid will be found inspissated, and at times solidified and broken up. More prolonged and intense heat and massage with friction are indicated.

1173 Chapel Street.



Direct diathermy in treatment of shoulder injury

Health and Education.—A very significant trend in education during the past few years is shown in the recognition that health is fundamental to sound intellectual development and that the rigid regulation of all things pertaining to the hygiene of students is indispensable. Generally speaking, there is serious economic and academic loss year after year in our schools, colleges, and universities, due to lassitude, indisposition, illness, and epidemics among students, all more or less preventable.—John Sundwall, *Pub. Health Rep.*, Nov. 7, 1919

Clinical Notes, Suggestions, and New Instruments

A NEW BRACE FOR TUBERCULOUS SPINES

GORDON N. MORRILL, M.D., CLEVELAND

In the treatment of ambulatory cases of Pott's disease, an adequate means of holding the spine in hyperextension is of vital importance. This is obviously more difficult of attainment than when the patient is recumbent on a frame, because of the strain put on the brace by the bending forward of that portion of the trunk which is above the deformity. A device which I have found satisfactory for this purpose is of the type illustrated here—one which I have used exclusively and with uniform success for the last eight years in all convalescent cases of middorsal and lumbar tuberculous spines. It owes its value as a curative element, not to rigidity or to a great amount of fixation, but to the three-point pressure secured with correct adjustment: first, pulling back on the shoulders; second, pressing forward on the kyphos, and third, pulling back on the pelvis.

From the accompanying illustrations, the appliance may be recognized as practically a reconstituted spring-back brace, differing in the main only in the greater rigidity of the material used, and in the diminished distance between the uprights. Its simplicity of construction and adjustment is apparent. Two upright pieces of steel, placed only a sufficient distance apart to prevent impinging on the spinous processes, are joined above by a steel cross-piece at a point slightly higher than the posterior level of the armpits when the arms are hanging, and below by a wider steel band attached to the uprights approximately at a level with the center of the sacro-iliac articulations, sloping slightly

of the shoulder straps—a factor of vital importance, since the shoulder weight alone is responsible for preventing the brace from sliding upward; but occasionally perineal straps must be resorted to when the brace will not maintain a correct position by the usual means. The abdominal band is specially constructed in accordance with the peculiarities of individual cases. For the patient seen in Figure 2, a lumbar case, I have used a leather belt with side lacings and anterior straps of webbing to insure very accurate adjustment. When this seems unnecessary, the lighter weight webbing belt is sufficient if designed as in Figure 4, so that the double lateral strappings are merged into a single abdominal band reinforced by vertical stays, usually three in number and placed at intervals. The pelvic band is buckled to the ends of the lower cross-bar (Figs. 1 and 2), and from them it passes directly below the anterior superior spines.

All steel parts of the brace are well padded, particularly at the points of greatest pressure, with the exception of the upper cross-bar, which does not come in contact with the patient. In the case of the boy in Figure 1, in whom the kyphos was of considerable size, I used the customary padding of felt and leather, with additional thickness on each side of the kyphos, where, in order to secure the desired amount of correction, the pressure was extreme.

To any one familiar with the type of brace commonly used in these cases, the absence here of the customary canvas or leather apron for securing the proper degree of fixation will be noticeable. In my opinion, it is one of the most commendable features of the appliance. This apron, which extends from the clavicles nearly to the symphysis pubis, is fastened to the brace by several nonelastic straps on each side, and is supposed to be strapped as tightly as

possible. The unavoidable result is a flattening and compression of chest and abdomen to such an extent that normal development is rendered improbable. My patients' chests are



Fig. 1.—The brace applied in a case of dorsal Pott's disease in which there is a large kyphos; extra padding at the seat of the disease.



Fig. 2.—Three views of the brace fitted in a case of lumbar tuberculosis; the freedom allowed the chest is a most commendable feature of the device.



Fig. 3.—The patient seen in Figure 2, wearing clothing over the brace; the excellent posture may be noted.

downward, and curved to fit the patient. As a rule, the brace is held in position by means of three strappings—those about the shoulders, the abdomen and the pelvis. The shoulder straps, attached as illustrated, pull the shoulders backward, forcing the forward-sagging portion of the trunk above the kyphos to straighten when, with the kyphos as the fulcrum and the brace as the lever, the device is forced into position and the pelvic band made secure. The angle at the top of each upright bar makes possible a very accurate adjustment

unconfined, their expansion is increased rather than diminished as is the case when the apron is used, and their normal development is therefore encouraged instead of retarded.

The value of the brace as a curative factor, however, depends, as I have previously stated, on its correct adjustment—a fundamental point, and one which cannot be over-emphasized. It should be made to fit the individual patient, the curve of the uprights so arranged as to assure the requisite amount of spinal hyperextension. If there is a

slightly reddened area on each side of the kyphos when the brace is removed, the physician may be certain that the desired three-point pressure has been secured. Even so, unremitting watchfulness is necessary, making essential the procuring of monthly tracings, and, consequently, as frequent careful readjustment of the support to coordinate with any change of the kyphos, and to take advantage of a resulting possible improvement in posture. While the brace is being altered, and when it is removed daily for the alcohol rub and the powdering which the back must receive—as well as whenever it is applied—the patient should lie face downward

with the spine as nearly immobile as he can hold it. He should in no contingency sit or stand erect when without the support; nor should he be permitted to bathe himself or be given baths in a tub by the attendant, until at least a periodic removal of the brace has been ordered by the physician.

When the condition of the patient seems to justify removal of the brace, he should go without it for only short periods at first, increasing them gradually as the physician may direct. And these periods of freedom should always be during the waking hours until such time as an exacerbation of the disease seems very unlikely. The reasons for this should be obvious: When conscious, the patient will instinctively avoid motions and postures which would be painful and therefore irritating to the weakened area; but while sleeping, a sudden turn or twist might easily impair restoration which had been the result of years of patient endeavor.

Fig. 4. — Arrangement of pelvic and abdominal strapping frequently resorted to, especially with young children.

The cases illustrated here will serve to make clear my points as to the construction and adjustment of this brace. But only experience and a fair trial can convey any adequate notion of its efficacy in cases affecting the dorsal and lumbar regions.

422 Osborn Building.

NEW FRACTURE BAND

ASA W. COLLINS, M.D., SAN FRANCISCO

Many years ago a case of comminuted fracture of the lower end of the femur, which seemed impossible of reduction, suggested to me the necessity of devising some method whereby the fragments could be accurately apposed and held in normal position. After considerable thought, together with a number of experiments, I devised the band with an instrument for its application, which, after many modifications, I am offering to the medical profession as one more addition to the many appliances used in operative work on fractures of the long bones.

Wire, when sufficiently tight to possess the proper tensile strength, breaks or loosens. Screws crack and destroy the bone, as well as loosen. Pegs are uncertain for the same reason. Plates are held by screws and are defective in some cases on account of the breaking or loosening of the screws. A single band around a bone does not possess a sufficient amount of strength to immobilize the fragments, and the slightest lateral motion is enough to cause an erosion and necrosis of bone beneath the band. Ligatures are difficult to apply, and often cut or break. Grafts are accompanied by great destruction of tissue and too often become sequestered, and so one is baffled many times in trying to decide on the use of any one or two methods which will meet every requirement. The prime factor in treatment of fractures of bones is a restoration of function, and this is dependent on securing proper apposition and maintaining it. Happily, the treatment is not often difficult, and the results are excellent in the great majority of uncomplicated fractures in the long

bones; but it is in the consideration of the exceptional cases that we are now concerned, for it is here that the resources of the surgeon are not infrequently taxed to the uttermost.

In this band we have a method which does not necessitate further destruction of tissue,

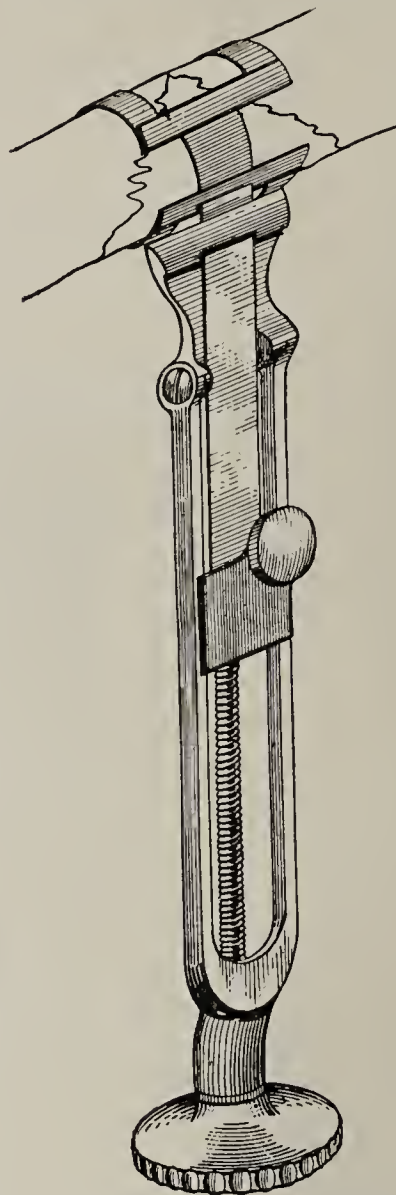


Fig. 1.—Band surrounding fractured bone, with instrument for tightening and locking the band. The width of the metal of the bands used at the present time is slightly narrower than those shown in the illustrations.

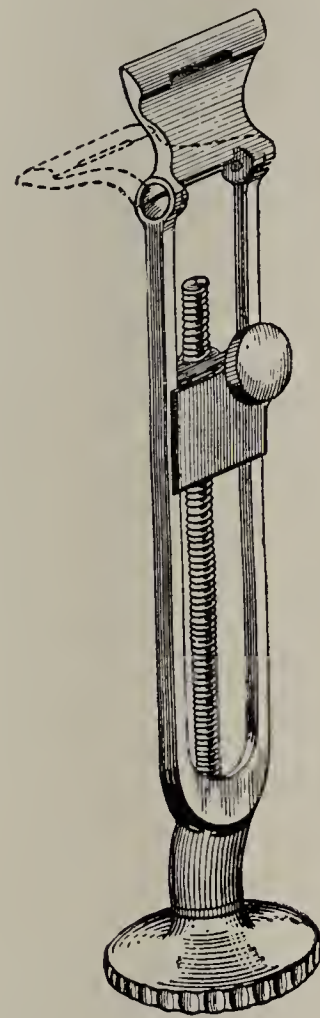


Fig. 2.—When the instrument draws the band sufficiently tight, the band is locked by being bent on itself. This is accomplished by pushing on the instrument, which causes it to bend, as shown.



Fig. 3.—Before and after applying a band in a typical case in which the band is best indicated. A large callus developed, and the patient has perfect functional result after a period of nearly two years.

such as screw holes, boring and sawing. The fragments are brought together by simple, even pressure, and are held until regeneration is complete.

In the thirty-four cases in which operation was performed, it was not found necessary to remove the band in a single instance, as all the operations were successful, the band becoming firmly embedded in the callus. The bands are made of an alloy of silver and nickel and heavily plated with pure silver, which gives them all the necessary requisites, namely, tensile strength, ductility, malleability and noncorrosibility. They are thin, and occupy very little space. The instrument for applying the band, as illustrated, will readily exemplify to the surgeon the simplicity with which it can be used. Up to the present time only two sizes of bands have been used, each with one window. The cases in which the use of the band is indicated are oblique and comminuted fractures of the femur and humerus. The band has also been applied on other long bones successfully.

To apply the band it is first bent so as to pass around the bone, and then into the instrument, where it is firmly held by a screw passing through a small hole in the band. It is well to remember to begin by passing the small end or tongue of the band around the bone first, beginning underneath the bone, and then passing it completely around the bone before pushing it through the window or loop. The band is tightened by turning the handle of the instrument until the proper tension is secured, when it is immediately locked by simply pushing on the instrument, which automatically locks the band by bending it on itself. The next step is to unscrew the instrument so as to cut off the end of the band with a pair of scissors about half an inch from the point at which the bending took place, and then bend over completely with almost any kind of a blunt instrument; a pair of heavy Mayo scissors will answer the purpose of cutting the band.

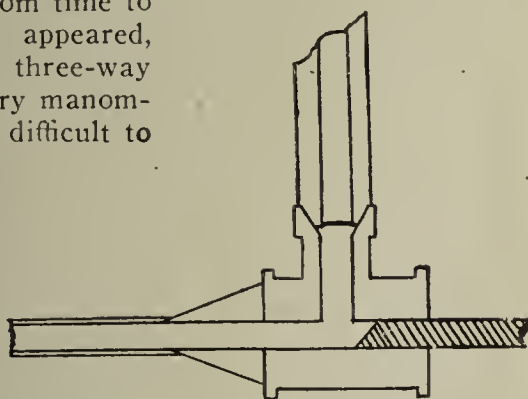
This device is not offered with any intention of supplanting any other operative method instituted in the past; but it is a valuable addition to the armamentarium used in operative fractures of long bones.

126 Post Street.

A SIMPLE METHOD OF MEASURING INTRACRANIAL PRESSURE

JOHN A. CALDWELL, M.D., AND CHARLES E. KIELY, M.D., CINCINNATI

Methods of measuring intracranial tension have in the past been extremely unscientific. The majority of observers have been content with observing the rate of flow, or, in cases of high tension, the length of the spurt of spinal fluid on withdrawing the stylet. From time to time, appliances have appeared, usually with elaborate three-way valves and with mercury manometers. The former are difficult to sterilize and the manometers are constantly aggravating because of the possibility of spilling the mercury. Further, the devices usually recommended are connected to the manometers by an adapter fitted into the butt of the spinal



Design of needle for measuring intracranial pressure.

needle. This necessitates complete withdrawal of the stylet, and consequently involves, in cases of high pressure, a spurt of spinal fluid, which is lost entirely, before the adapter and needle are connected. This results in a lowered reading.

We have devised a needle in which a by-pass is added to the butt of a common puncture needle, with an adapter for a glass millimeter tube.

The needle free of the glass tubing is inserted in the usual way until the operator feels certain that he has entered the spinal canal. The measuring tube is then adapted, and the stylet of the needle withdrawn to the length of the attached chain. Unlike the standard needle, this one is of a constant bore through its entire length, so that when the stylet point has passed far enough out to permit egress of fluid into the

perpendicular tube there is still no avenue of escape through the end of the needle, as shown in the accompanying illustration. The pressure will, of course, be read directly in millimeters of spinal fluid in the graduated glass tube. When the specimen of spinal fluid is to be withdrawn it will be necessary only to remove the stylet entirely. If serum is to be administered, an adapter can be fitted to the by-pass.

We feel that this device offers several advantages: simplicity with consequent sterilizability; freedom from the annoyance of spilling mercury; greater accuracy of reading, as the column of fluid will be thirteen and six tenths times as long as that of mercury. Finally, it is to be noted that even in the highest pressures that will be encountered, the amount of fluid set free in the device will not reach 2 c.c., which will never be a dangerous withdrawal even in tumor cases.

628 Elm Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

BARBITAL (See New and Nonofficial Remedies, 1920, p. 82).

Barbital-Chiris.—A brand of barbital complying with the N. N. R. standards.

Manufactured by the Antoine Chiris Company, New York City. U. S. patent No. 782,739 (Feb. 14, 1905; expires 1922) by license of the U. S. Federal Trade Commission.

BARBITAL SODIUM (See New and Nonofficial Remedies, 1920, p. 83).

Barbital Sodium-Chiris.—A brand of barbital sodium complying with the N. N. R. standards.

Manufactured by the Antoine Chiris Company, New York City, U. S. patent No. 782,739 (Feb. 14, 1905; expires 1922), by license of the U. S. Federal Trade Commission.

CONDENSED VITALAIT.—A pure culture in vials of *Bacillus bulgaricus*.

Actions and Uses.—Condensed Vitalait is designed for internal administration. See general article, Lactic Acid-Producing Organisms and Preparations, New and Nonofficial Remedies, 1920, p. 156.

Dosage.—The contents of one vial in water or milk, just before retiring, is the usual daily dose. The cultures are distributed by the manufacturer only and are sent by mail. Each vial bears an expiration date.

Manufactured by the Vitalait Laboratory of California, Pasadena, Calif. No U. S. patent or trademark.

The culture is grown in sterile skimmed milk, its incubation period being twenty-two hours. The average bacterial count of the finished culture is stated to be 200,000 per Cc.

Practical Obstetric Teaching.—The provision of large maternity centers in various parts of London, fully equipped for the reception of lying-in cases and perhaps also for gynecologic cases, and certainly associated with maternity and child welfare centers, must be a feature of hospital evolution in the near future. The need for such centers is pressing, and once the public learns that the present death rate and the present dangers of child bed are almost entirely preventable they will not be content with the existing inadequate provision for the hospital treatment of such cases, they will demand, and rightly demand, ampler and better provision. And the public authorities will have to yield to their cry. The maternity centers will furnish opportunities of teaching undergraduates, postgraduates and midwives on a larger and better scale than exists at the present time; and it is the business of the teachers of midwifery to take advantage of opportunities that may offer for the institution and management of the centers.—*Lancet*, Dec. 13, 1919.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 3, 1920

PROTECTION AGAINST POLIOMYELITIS

Whenever a disease breaks out in epidemic proportions nowadays, widespread advertising of protective measures is almost certain to follow. Owing to the known involvement of micro-organisms or similar infective agents in the genesis and spread of such diseases, the use of antiseptics is usually promptly lauded, particularly by those who are interested in the sale of alleged germ-destroying products. It is now generally believed that the inciting micro-organism or virus of poliomyelitis enters the nervous system by way of the nasal passages. This, therefore, has raised the question whether, during an epidemic of poliomyelitis, the application of antiseptics to the nasal mucosa is to be recommended.

The extent of present-day information regarding the fate of the virus in the human body is still too limited to make new possibilities of prophylaxis appear inconsequential. In considering the possibility of local antiseptic treatment, Flexner and Amoss¹ of the Rockefeller Institute for Medical Research have pointed out that in the case of chronic meningococcus carriers, the suppression of that micro-organism by the introduction of antiseptics directly into the nasopharynx has not been notably successful; and they state that the meningococcus is apparently a much more fragile organism than the microbe of poliomyelitis.

It has been demonstrated that certain chemical disinfectants are effective against the virus in vitro; but in an investigation of the possible prophylactic value of chloramin-T, and dichloramin-T dissolved in chlorcosane, after application of the virus into the nasal mucous membranes, Flexner and Amoss found that these chlorinated products exhibited no great protective action and are of doubtful value. In fact, the question has lately arisen as to whether antiseptic chemicals applied to the mucosa are not actually objectionable; for it appears that this membrane may sometimes function to prevent infection. According to the observations of Flexner and Amoss, certain animals are highly refractory to inoculation by way of the nares

with the virus of poliomyelitis, apparently in virtue of a power possessed by the membrane to destroy or otherwise render ineffective the virus that reaches it. Thus the latter will survive for an undetermined period on an ineffective, but for a relatively brief period of time on an effective, membrane.

It should be borne in mind, however, that this occasional property of the nasal mucosa appears to be distinct from any specific protective virtues that may appear in the blood. The poliomyelitic immune serum injected into the circulation is thought by Flexner and Amoss to meet the virus in the subarachnoid space. The low morbidity of poliomyelitis even during severe epidemics makes it seem probable that the insusceptibility of many persons is attained by some peculiar protection. If the normal nasal mucosa is part of the defense against the infection and serves to keep down the number of healthy and chronic carriers of the virus, it should be conserved in a healthy state. Local antiseptics are all too frequently merely chemical irritants; hence they should never be used indiscriminately—and evidently not in connection with poliomyelitis under the conditions just described.

VEGETABLE CARBOHYDRATES IN THE DIABETIC DIETARY

It has been pointed out by a number of writers¹ on the diabetic dietary that with the necessary exclusion of virtually all fruits and many vegetables because of their content of prohibited carbohydrate, the ration of the patients becomes much restricted, monotonous, and undesirably reduced in bulk. The diabetic craves the variety that is furnished by vegetable foods, so that the effort made to supplement his dietary with permissible additions will be fully justified. It is because of this that physicians much concerned with diabetics have begun to employ the so-called thrice-cooked or thrice-washed vegetables—products representing the residues, after repeated extraction, of such foods as carrots, cauliflower and cabbage, with water to remove the soluble carbohydrates.²

It has been debated whether vegetables thus freed from sugars and possibly other soluble carbohydrates still contain compounds that might yield sugar in the metabolism. Cellulose and, in some cases, starch are undoubtedly present. Published analyses by no means afford an accurate index, as the figures are commonly obtained by "difference," that is, by calculation of the residue of constituents not otherwise accounted for. When compounds potentially sugar-forming in the organism are fed to dogs rendered severely diabetic with phlorizin—so-called "total phlorizin diabetes"—the study of the urine makes it possible to ascertain how much, if any, of the intake can be converted to

1. Flexner, Simon, and Amoss, H. L.: Experiments on the Nasal Route of Infection in Poliomyelitis, *J. Exper. Med.* **31**: 123 (Feb.) 1920.

1. Wardall, Ruth A.: Vegetable Foods for the Diabetic, *J. A. M. A.* **69**: 1859 (Dec. 1) 1917.

2. Cammidge, P. J.: Thrice-Boiled Vegetables for Diabetics, *Lancet* **2**: 1192 (Dec. 27) 1919. Wardall (Footnote 1).

sugar in the organism. From experiments of this type conducted at the Washington University School of Medicine at St. Louis, Olmsted³ has demonstrated that the usually employed green vegetables actually yield no more sugar in the body than the estimation of the starch and sugar preformed in them will account for. Thus, in the case of cabbage and cauliflower it does not exceed 5 and 3.4 per cent., respectively, while the same vegetables thrice cooked furnish no more than 0.5 and 0.8 per cent., respectively, of sugar. The dietitian may therefore continue the use and advocacy of this type of food when it is indicated, with the satisfaction of knowing that no unsuspected latent sources of sugar are being offered to the patient.

Only those who are obliged to deal practically with the needs of patients severely ill with diabetes can adequately appreciate the advantage of every innovation that may afford some culinary addition to their inevitably monotonous regimen. It is most unfortunate, therefore, that one should find a distinguished physiologist, in reviewing a study of thrice-cooked vegetables for diabetics, venturing to comment thus: "If all that is wanted is a pretense of food—a mere filling for the stomach—might one suggest some boiled filter-paper? This would mean a saving of the cook's time and of coals."⁴ Such uncalled for gibes bear the stamp of inexperience in the domain of dietotherapy.

THE PRECISE LOCATION OF PERICARDIAL EFFUSIONS

Clinicians are well aware that, unfortunately, the existence of pericarditis is often overlooked. Even when it is accompanied by pericardial effusion, the diagnosis is by no means always easy to make. The differentiation of the latter condition from cardiac dilatation occasionally presents great difficulties and is sometimes actually impossible. Paracentesis may fail to determine the presence or absence of fluid in the pericardial cavity. The reason for these uncertainties and the explanation for the errors in diagnosis sometimes made by even the most expert observers are found in part in the character of the evidence on which the clinician is forced to depend for his judgments. Although almost a hundred years have elapsed since Collin, Laënnec's assistant, demonstrated in 1824 the pericardial friction sound and interpreted its significance, this physical sign is not yet always so well defined as to be decisive. The determinations of the boundaries of dulness indicative of effusion involve possibilities of error, partly because of the personal equation of the observer and in part because of the shifting character of some exudates.

Even more fundamental than the difficulties just enumerated has been the lack of dependable informa-

tion regarding the anatomic relations of the heart to the pericardium when an effusion exists. Williamson,¹ who has lately called attention to these gaps in our knowledge, points out that some writers regard the heart as a heavy solid which sinks in an effusion to the lowest position in the pericardial sac. He correctly reminds us, however, that the fixation of the heart through its connections with the great vessels at its base and its attachment to the diaphragm by way of the inferior vena cava may prevent any "sinking" of the heart such as has been postulated. Nor is the heart to be regarded as capable of "floating" in an abundance of pericardial fluid. Where, then, does the latter distribute itself? Does it spread out laterally or vertically in its peculiarly limited confines? On the correct answer to such questions the interpretation of many physical signs elicited through the intact chest wall must depend. Furthermore, without accurate information of this sort, paracentesis of the pericardium may sometimes truly become, as Billroth characterized it in 1870, "a prostitution of surgical skill."²

Correspondingly welcome, therefore, are the elaborate investigations which Williamson¹ has conducted at the College of Medicine of the University of Illinois on the actual anatomic interrelations between the heart and pericardial effusions of varying magnitudes. He has arrived at the definite conclusion that the fluid accumulates first along the lower margin of the heart and about the apex, particularly on the diaphragmatic surface of the heart. With small effusions, this is the only place in which fluid accumulates with regularity. The result of the accumulation of the fluid in this position is to push down the left lobe of the liver. This feature is said to be sufficiently conspicuous to serve as an early diagnostic sign of effusion. The second place in which fluid accumulates, Williamson continues, is over the great vessels at the base. With small effusions it is occasionally present in sufficient amount to be detected by percussion. With medium sized effusions this layer is generally thick enough to be demonstrable by percussion, and this retrosternal dulness is an important diagnostic sign.

With respect to the debated anatomic relations, it is further of note that in a considerable number of Williamson's experiments on the cadaver the anterior surface of the heart, in spite of the exudate, remained in part uncovered by the fluid, so that a pericardial friction rub could readily exist. This persistence of the pericardial rub is to be anticipated in cases in which the heart is relatively large, so that it fills out the space between the vertebral column and the sternum.

When the volume of pericardial effusion is large, the chances of successful tapping are obviously good. Williamson introduced fluids in widely varying quan-

3. Olmsted, W. H.: Availability of Carbohydrate in Certain Vegetables, *J. Biol. Chem.* **41**: 45 (Jan.) 1920.

4. W. D. H. in Abstract 3019, *Physiological Abstracts*, **4**: 488 (Feb.) 1920.

1. Williamson, C. S.: Pericarditis with Effusion, an Experimental Study, *Arch. Int. Med.* **25**: 260 (Feb.) 1920.

2. McPhedran, Alexander: Diseases of the Pericardium, in *Osler's Modern Medicine* **4**: 64, 1908.

tities up to 655 c.c. From a survey of the observations made it appears that small amounts of fluid are most likely to be reached by puncture from a site either just outside the apex or in the chondroxyphoid angle. This study should be decidedly helpful in the future management of pericardial disease.

PROTECTION AGAINST CARBON MONOXID

It has become almost commonplace to observe that under the stress of war emergencies the scientific resources and investigative intelligence of our country were effectively requisitioned in many instances with a degree of success rarely approached under the less strenuous demands of peace time. Nowhere was this exemplified more strikingly than in the domain of chemistry. Chemical warfare assumed a new and unexpected significance from both the offensive and the defensive standpoint. The enormous development of American chemical industries incidentally created new possibilities in the production of medicinal chemicals as well as in the maintenance of such supplies, for which this country was formerly dependent on European continental sources. Furthermore, the menace of the poisonous war gases necessitated the discovery and invention of means of protection, some of which have found a valuable application in the dangers of every-day life.

Danger from various gases has long been recognized as a hygienic problem in several industries. This is true, for example, of carbon monoxid. Experts of the Chemical Warfare Service have asserted that the intentional use of this compound as a poisonous war gas is practically out of the question, primarily because of its relatively slight toxicity. They have pointed out that several minutes' inhalation of a mixture of one part in 100 parts of air is required to produce unconsciousness, while with a number of other toxic gases actually employed, such as phosgen, for instance, a similar length of exposure to one part in 100,000 parts of air, that is, to a mixture a thousand times more dilute, will prove fatal. Since it is difficult to set up the required concentrations of even the most toxic gases over significant areas in the open, it is evident that no possible degree of cheapness, accessibility, etc., could overcome so serious a handicap.¹

Nevertheless, defense against the danger of poisoning from carbon monoxid has been found necessary in both marine and land warfare. Defective ventilation in boiler rooms where products of incomplete combustion may escape, and in the neighborhood of explosions evolving large quantities of carbon monoxid, as well as in the relatively confined spaces of mining and sapping operations, calls for protection from the gas. Carbon monoxid is so inert chemically under ordinary

conditions that few substances react on it with the speed required in gas masks, through which human respiration must proceed rapidly. Most of the other poisonous gases encountered during the war were absorbed or neutralized by suitable compounds introduced into gas mask containers. In the case of carbon monoxid the problem proved to be singularly baffling until, thanks to the combined ingenuity of a number of American chemists, it was ascertained that in the presence of suitable catalysts carbon monoxid can be oxidized continuously by the oxygen of the air. The perfection of a suitable catalyst—"hopcalite," a mixture of oxids of manganese, copper, cobalt and silver—has lately been disclosed by permission of the Bureau of Mines and of the Chemical Warfare Service.

As a constituent of gas masks, this new product of the war-time chemistry promises to function effectively against any concentration of carbon monoxid. Its field of usefulness in peace time is likely to be found in plants for the manufacture of power and illuminating gas, and in the metallurgical industries, in which carbon monoxid is largely employed, with frequent casualties and even fatalities. The government experts indicate that in coal mining, in certain classes of copper mining, and wherever explosives are used in confined spaces, carbon monoxid is a serious menace responsible for the loss of many lives each year. Leaky flues, exhaust gases from explosion engines, improper ventilation where coal fires are employed, and the air to which firemen are exposed in burning buildings, all constantly take a not inconsiderable toll of lives. The therapeutics of poisoning from carbon monoxid has lately been put on a more rational basis, and now prophylactic hygiene has added further possibilities of averting danger from it.

Current Comment

THE MEDICAL AND SURGICAL HISTORY OF THE WAR

The Surgeon-General, with the approval of the Secretary of War, is asking for an appropriation, in the Sundry Civil Bill, for the publication of the medical and surgical history of the World War. In its projected form, this medical history will be more than an account of the rapid expansion and administrative achievements of the medical department; it will be a collective study of the many problems of hygiene, medicine and surgery which were involved in the efficient medical care of the nation's armies—in fact, a system of medicine and surgery based on the experience and observations of the physicians who guarded the health of our soldiers. The knowledge which was gained in hospitals and on the battlefield, and the vast amount of medical research carried on during the war, can be made of immediate value to the medical profession and the public only by prompt publication of the medical history. There can be no question of the

1. Lamb, A. B.; Bray, W. C., and Frazer, J. C. W.: The Removal of Carbon Monoxide from Air, *J. Indust. & Engin. Chem.* **12**: 213 (March) 1920.

merit of such a work; as a scientific record alone, the data will be of permanent value, irrespective of considerations regarding their utility as a source of information in future emergencies. The first volume of an unofficial history of the Canadian army medical corps appeared last year, steady progress has been made on the official British medical history, and the history of German participation in the war will be issued in nine volumes late in 1920; much of the material for the American history is already collected, and publication waits on the action of Congress. Nothing can be gained from procrastination and delay—the appropriation requested by the Surgeon-General should be allowed promptly. The medical and surgical history of the War of the Rebellion was delayed through twenty years. It is to be hoped that a similar fate does not await the publication of the Medical History of the World War. If Congress does not, within a short time, make the appropriation necessary for the printing of this available material, the failure will be tantamount to an order for its destruction. In a few years this material would be of archaic, but not of scientific, interest.

DETERIORATION OF STROPHANTHIN EMPHASIZES THE IMPORTANCE OF DETAILS

Factors that appear insignificant or of minor importance to the layman may play a surprisingly conspicuous part in the workings of science. Seemingly slight variations from the normal or the expected often alter the course of a reaction; that which is an infinitesimal quantity to the eyes of the untutored may become a highly potent portion in the hands of a trained worker. The latter may alter the functions of the human body by the use of less than a milligram or a hundredth of a grain of an active drug. Bacteria may be readily affected in their growth by variations in reaction that require special indicators for their easy detection. Physicians have learned that even a product as “pure” as is distilled water may need redistillation under special precautions to render it fit for therapeutic use. The foregoing instances are cited to illustrate the respect and attention which details deserve in paving the way to success in practice as well as in scientific medicine. A significant added example has just been furnished by Levy and Cullen¹ of the Hospital of the Rockefeller Institute for Medical Research in New York. Having observed wide variations of potency in the biologic assays of several lots of a commercial preparation of ouabain (g-strophanthin) furnished in ampules, they found that the sterilized solutions were decidedly alkaline in reaction, whereas freshly prepared aqueous solutions of the drug were neutral or slightly acid. This drug is readily rendered biologically inert by heating with alkalis. It was discovered that ordinary soft glass commonly used in making ampules employed in marketing sterile solutions for hypodermic or intravenous medication yields sufficient alkali on heating to change the reaction of distilled water—hence it is liable to decompose susceptible chemical

substances. Thus, some ampules may contain a drug in a concentration as low as 0.01 per cent., i. e., 0.5 mg. of drug in 5 c.c. The difficulty can readily be averted by the use of containers of hard glass. In the special case of crystalline strophanthin for clinical use, Levy and Cullen advise that it be dissolved in 0.02 molecular-gram of standard phosphate solution at p_H 7.0 and sterilized in hard glass ampules, under which conditions it has been kept undeteriorated for months. We reiterate the value of attention to details.

Association News

THE NEW ORLEANS SESSION

Special Party from St. Paul and Minneapolis

Dr. Harry F. Thompson, Forest City, Iowa, advises that he is organizing a party to go to New Orleans from St. Paul and Minneapolis, and will be pleased to correspond with any who desire to join the party.

Steamship Parties Called Off

Dr. Ira J. Haynes, Richmond, Va., writes that he has failed to secure a ship to carry a party from Baltimore to New Orleans to attend the annual session of the American Medical Association. Notwithstanding earnest efforts to charter such a boat, he was unable to obtain one. It has also been found impracticable to arrange for boats to carry parties to New Orleans down the Mississippi River.

Large Attendance Expected

Dr. A. E. Fossier, chairman of the Local Committee on Arrangements, reports that, judging from the large number of hotel reservations already made, the coming annual session of the Association is going to be a large one. Notwithstanding this, the Committee on Hotels is doing all in its power to avoid inconvenience or confusion for the Fellows who will be in New Orleans, and feels confident that comfortable accommodations will be available for all. It is urged, however, that hotel reservations be made promptly and in advance of going to New Orleans, by addressing the chairman of the Local Committee on Hotels, Dr. J. J. Wymer, 921 Canal Street.

Clinics Preceding and Following the Scientific Assembly of the American Medical Association

It is purposed to make available for these clinics all the hospitals affording sufficient facilities. The cooperation of the Charity Hospital of Louisiana, the Eye, Ear, Nose and Throat Hospital, Touro Infirmary, the Hotel Dieu, and the Presbyterian Hospital has been secured. These institutions are interested in placing their clinical material at the disposal of visiting physicians, and have entered into the spirit of the undertaking in the most cordial manner.

The clinics will be arranged for Thursday, Friday and Saturday of the week before the session, April 22, 23, 24; for Monday and Tuesday of the session week, April 26 and 27, and for the Saturday following, May 1.

In accordance with hospital customs in New Orleans, the operative clinics will be held in the forenoon, the nonoperative, in the afternoon. Daily a notice of the morrow's program will be multigraphed and posted in the registration booth, the hotels and the hospitals themselves. The program will give the number of visitors that can be accommodated in each clinic. All the institutions will offer instructive work each day, the programs running concurrently, so as to offer opportunities to as large a number of visitors as possible.

CHARITY HOSPITAL, Tulane Avenue between Howard and Magnolia, reached by Tulane Belt car on Canal Street, going from river. Operative clinics every forenoon, in Miles and Delgado buildings, accommo-

1. Levy, R. L., and Cullen, G. E.: Deterioration of Crystalline Strophanthin in Aqueous Solution, *J. Exper. Med.* 31:267 (March) 1920.

dating, respectively, 525 and seventy-five spectators. Dispensary clinics every forenoon. Nonoperative (medical, dermatologic, obstetric) clinics in the afternoon, chiefly in the Miles Amphitheater (capacity, 500). *Surgery*: Drs. J. M. Batchelor, J. A. Dana, H. B. Gessner, F. A. Larue, E. D. Martin, R. Matas, F. W. Parham, John Smyth, M. J. Gelpi, C. Grenes Cole, J. E. Landry, Henry Leidenheimer, C. W. Allen, U. Maes, W. M. Perkins, A. C. King, M. Bradburn, W. P. Bradburn, A. Duncan, J. F. Points, John Lindner, A. A. Keller and E. J. Richard. *Medicine*: Drs. John B. Elliott, Jr., J. A. Bel, Benjamin Ledbetter, J. T. Halscy, G. Farrar Patton, Edward Moss, J. B. Guthrie, I. I. Lemann, J. A. Storck, Otto Lerch, Hamilton P. Jones, L. L. Cazenavette, Wallace Durel, Harry Daspit, A. E. Fossier, O. W. Bethca, J. L. Lewis, R. Lyons, Chaille Jamison and J. C. Cole. *Gynecology and Obstetrics*: Drs. S. M. D. Clark, William Kohlmann, Paul Michinard, C. Jeff Miller, H. S. Cocram, W. W. Leake, H. W. Kostmayer, J. W. Newman, E. H. Walet, P. B. Salatic, C. P. Holderith, E. D. Friedrichs, J. F. Dicks, E. L. King, C. A. M. Dorrestein and C. P. Brown. *Orthopedics*: Drs. E. D. Fenner, John F. Oechsner, Paul A. McIlhenny, Solon Wilson, James T. Nix, Jr., and Joseph Levy. *Urology*: Drs. S. P. Delaup, Joseph Hume, A. Nelken, Paul Gelpi, Henry Walther, P. J. Kahle and H. Lindner. *Ophthalmology*: Drs. M. Feingold, T. J. Dimitry, A. L. Whitmire, V. Smith, Henry Blum and A. R. Crebbin. *Diseases of the Ear, Nose and Throat*: Drs. Homer Dupuy, S. M. Blackshear, W. T. Patton, J. A. Estopinol, L. de Poorter and William Scheppegegrell (hay-fever clinic). *Pediatrics*: Drs. C. A. Borey, L. R. De Buys, C. J. Bloom, John Signorelli, R. A. Strong, R. Crawford and G. J. de Reyna. *Dermatology*: Drs. Isadore Dyer, H. E. Ménage and J. N. Roussel. *Radiology*: Dr. G. B. Harney. *Pathology*: Dr. C. W. Duval.

EYE, EAR, NOSE AND THROAT HOSPITAL, Tulane Avenue, corner of Elk Place, five squares from Charity Hospital, reached by Tulane Belt car on Canal St., going from the river. Dispensary and operative clinics, each, nose and throat, in the morning; eye, in the afternoon. Amphitheater seats fifty. *Eye*: Drs. Henry Dickson Bruns, E. A. Robin, C. A. Bahn, W. R. Buffington and E. McCarthy. *Ear, Nose and Throat*: Drs. R. C. Lynch, John T. Crebbin, George Taquine and J. D. Martin.

TOURO INFIRMARY, Prytania, between Aline and Foucher, reached by Prytania car at Canal and Camp, or St. Charles Belt. Dispensary in the forenoon. Operative clinics every forenoon; six rooms accommodate sixty. Medical clinics in the afternoon; accommodations for 200. *Surgery*: Drs. R. Matas, F. W. Parham, E. D. Martin, C. Jeff Miller, S. M. D. Clark, C. W. Allen, A. Nelken, H. B. Gessner, U. Maes, L. H. Landry, R. E. Stone and Isidore Cohn. *Obstetrics and Gynecology*: Drs. William Kohlmann, J. W. Newman, J. Barnett, J. G. Hirsch, Joseph Conn and C. A. M. Dorrestein. *Orthopedics*: Drs. E. S. Hatch, J. T. O'Farrell and L. C. Spencer. *Eye*: Drs. M. Feingold, Henry Blum and A. R. Crebbin. *Ear, Nose and Throat*: Drs. C. J. Landfried, R. C. Lynch, J. P. Leake, A. I. Weil, S. M. Blackshear and H. L. Kearney. *Medicine*: Drs. I. I. Lemann, L. D. DeBuys, S. K. Simon, R. M. Van Wart, C. L. Eshleman, R. Lyons, J. M. Bamber, J. C. Cole, O. F. Ernst, A. L. Levine, C. J. Bloom, C. S. Holbrook and B. R. Heninger. *Radiology*: Drs. E. C. Samuel and E. R. Bowie. *Dermatology*: Drs. J. N. Roussel and R. A. Oriol. *Pathology*: Dr. J. A. Lanford.

HOTEL DIEU, Tulane Avenue, corner of Johnson, reached by Tulane Belt car on Canal Street, going from the river. Operative clinics every forenoon; five rooms accommodate a total of twenty-five. Drs. M. Souchon, J. A. Danna, J. T. Nix, Jr., Louis Levy, Homer Dupuy, J. J. Ryan, H. W. Kostmayer and Maurice Gelpi. *Radiology*: Dr. L. A. Fortier. *Pathology*: Dr. M. Couret.

PRESBYTERIAN HOSPITAL, Carondelet Street, between Julia and Girod, reached by Peters Avenue and Laurel Street cars at Carondelet and Canal. Operative clinics in the forenoon; four rooms accommodate a total of forty. Demonstration of pathologic specimens and roentgenograms in the forenoon. *Surgery, including Special Senses*: Drs. J. P. O'Kelley, W. D. Phillips, C. Grenes Cole, Roy Harrison, A. O. Hoeft, Joseph Hume, J. R. Hume, John Smyth, D. L. Watson, M. P. Boebinger, F. A. Overbay and H. S. Cocram. *Internal Medicine*: Drs. J. L. Lewis, Chaille Jamison and F. Lamothe. *Pathology*: Dr. William H. Harris. *Radiology*: Dr. Adolph Henriques.

Welfare of the Blind.—The British Department Committee on the Welfare of the Blind, which reported in July, 1917, recommended the establishment in the Local Government Board of a special department whose functions should be the general care and supervision of the blind and the appointment of an advisory committee of persons associated with the care of the blind. Its first report (for the period ended March 31, 1919) has been published by the ministry of health. A register formed on the replies thereto shows a total of 25,840 blind persons in England and Wales. Inquiry was made into the work of the blind, and it was found that the employable group (11,895) is the largest, being 46 per cent. of the total unenumerated. Of blind persons in occupations most are engaged in basket and cane work; there are relatively few in outdoor occupations. A large number of blind children are not attending school, and of these 40.6 per cent. were returned as mentally defective. A table of the age of onset of blindness shows that 21.4 per cent. were blinded within the first year of life, the majority of them within the first month. After the first year the incidence is, roughly, 10 per cent. for each decade up to 70 years.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Charles A. Mohr, Mobile, health officer of Mobile County, has resigned on account of his duties as health officer of Mobile.—Dr. Paul P. Salter, Montgomery, director of the state laboratories for several years, has resigned and will practice in Eufaula.—Dr. Frederick K. Reynolds, Montgomery, assistant state health officer, has resigned and will practice in Montgomery.

ILLINOIS

Smallpox in Evanston.—Two cases of smallpox, the first to be reported in Evanston for five years, were discovered March 23. Both patients were taken to the Chicago Isolation Hospital.

Asks New Trial.—Motion for a new trial in the case of Dr. George W. Alverson, Sciota, convicted of the murder of Lawrence Clugston, were filed with the circuit court of McDonough County, February 28.

Branch Association Organized.—The Belleville Branch of the St. Clair County Medical Association was organized at Belleville, March 2. The membership in the branch will include not only physicians of Belleville but also those from the central and eastern parts of St. Clair County. Dr. Buenaventura H. Portuondo was elected president; Dr. William L. Hanson, secretary, and Dr. Delmar R. Duey, treasurer, all of Belleville.

The Venereal Disease Plague.—Certain communities in Illinois and on the Indiana border, notorious as breeding places of venereal diseases, will be cleaned out by the attorney general, county commissioners and municipal health departments. This decision was arrived at, March 25, after a lengthy conference called by Pres. Peter Reinberg of the Cook County board, and suggested by Dr. George G. Taylor, Springfield, chief of the division of social hygiene of the Illinois department of public health. Every person known to be infected will be taken to a clinic or hospital and treated until cured or safe.

State Dentists Meet.—The fifty-sixth annual meeting of the Illinois State Dental Society was held in Chicago, March 22 to 25, with about 4,000 in attendance. The chief topics of discussion were the importance of dental work in public schools, the antisugar campaign, the gospel of the clean mouth and the relation of systemic diseases to infected teeth. March 23 was devoted to a clinic by the Chicago Dental Society, and in the evening a testimonial banquet was given to Dr. Thomas Lewis Gilmer, dean of the profession in Chicago. Dr. J. T. Luthringer, Peoria, was elected president; Dr. Frederick B. Noyes, Chicago, president elect, and Dr. C. W. Coltran, Chicago, vice president.

Chicago

Research Club Meeting.—At a meeting of the Medical Research Club of the University of Illinois, held Thursday, March 25, in the college of medicine, Prof. A. H. Clarke, school of pharmacy, discussed "The Work of the Council of Pharmacy and Chemistry of the American Medical Association," and Paul N. Leech of the Laboratory of the American Medical Association, spoke on "Some of the Council's Problems with Therapeutic Agents." The faculty of the college of medicine passed a resolution commending the aims and work of the Council.

Public School Athletic League Formed.—To make Chicago's 400,000 schoolchildren the healthiest schoolchildren in America is the purpose of the Chicago Public School Athletic League, an organization recently authorized at the instigation of the mayor and approved and supported by city and park officials, the board of education, members of civic organizations and principals of the high and elementary schools of Chicago. It is proposed to initiate efficient coaching and training, together with expert direction along the special lines of activity for which the individual boy is best fitted. This cannot fail to raise the standard of health, character and physical fitness.

Honored for War Service.—Dr. Gustavus M. Blech, who as lieutenant-colonel, M. C., U. S. Army, commanded Base Hospital No. 208, near Bordeaux, the largest base hospital in France, having a capacity of more than 7,000 patients, has received through the Adjutant-General of the Army, a citation certificate of the Order of University Palms with the grade of Officier de l'Instruction Publique—gold palms, awarded to him by the French government for services rendered to French officers and the government at the University of Bordeaux.—Dr. Maurice L. Goodkind has received, through the Adjutant-General of the army, a citation certificate of the Order of the University Palms of the grade officer of the Academy—silver palm, awarded by the French government Nov. 18, 1919, for services as chief of the medical service of Base Hospital No. 53, Langres sur Marne, France.

Society Meetings.—At the meeting of the Chicago Medical Society, March 31, Dr. Edward A. Foley, assistant superintendent of the Chicago State Hospital, discussed the "Difficulties Encountered in Dealing with Mental and Delinquent Cases," with special reference to interference by newspapers, lawyers, physicians and the general public in endeavoring to secure releases from institutions of such cases; Dr. William O. Krohn, spoke on "The Malingerer as a Medical and Medicolegal Problem," and Dr. Daniel N. Eisendrath gave a report on "Recent Progress in Kidney and Ureteral Surgery."—At the meeting of the Society of Medical History of Chicago, held at the City Club, March 30, Dr. Morris Fishbein presented a paper on "Physicians' Fees;" Dr. Clarence A. Earle, Desplaines, one on "Pioneer Physicians of the Desplaines Valley," and Dr. Benjamin F. Uran, Kankakee, one on "The Names and Early History of Physicians of Kankakee County."

KANSAS

Personal.—Dr. Alva E. Billings, Topeka, has been appointed medical director of the Security Benefit Association, succeeding Dr. Oscar L. Peak, deceased.—Dr. A. L. Shelton, Hutchinson, the first American medical missionary to enter Thibet, who was captured by Chinese bandits, January 4, near Laoyakwan, has been released.

School for Health Officers.—Dr. Eugene R. Kelley, Boston, health commissioner of Boston, and Mazyck P. Ravenel, Columbia, professor of preventive medicine in the University of Missouri, have been secured as instructors for the school for public health officers which is to be held in Rosedale, May 10 to 15, inclusive. An officer of the U. S. Public Health Service will also be detailed for this work. The mornings will be devoted to clinics at the Bell Memorial Hospital, Rosedale, and the afternoons will be taken up in general public health work.

KENTUCKY

Personal.—Dr. L. A. Megler, Louisville, has been appointed school medical inspector, succeeding Dr. Lester A. Crutcher, resigned to become registrar of vital statistics for Jefferson County in place of Dr. William E. Grant, deceased.—Dr. John Hamilton, Owensboro, has been selected health officer of Daviess County.

Recent Legislation.—The legislature of Kentucky has enacted the following bills affecting the medical profession and public health: senate bill No. 220 provides for the establishment of a state board of health of nine members all legally qualified practitioners, except one, a registered pharmacist, eight of whom shall be appointed by the governor and the ninth who shall be secretary and state health officer, elected by the board: one member a homeopath, one eclectic and one osteopath, one a registered pharmacist, and all the other members physicians, all to be appointed by the governor from a list of three names for each vacancy furnished respectively by the state society or association of such physicians, or cities and boards as are entitled to a member, and the pharmacist from a similar list of three names submitted by the Kentucky Pharmaceutical Association. The president, secretary and members of the board and other officers and employees are to receive annual salaries to be fixed by the state board of health, to be paid as salaries and expenses as now paid. The other members of the board shall receive no per diem compensation for their services, except when sent by the board on special duties and when preparing and conducting examinations. A fund is created for the purpose of extending state aid to counties or districts establishing and maintaining county or district departments of health and authorizing the auditor to draw his warrant in favor of the state board of health, for the use of each county which has established such a county or district health department

for the sum of \$2,500 annually. Senate bill No. 408 gives immediate possession of Hazelwood Sanatorium for a state tuberculosis sanatorium. Senate bill No. 29 is an advanced housing bill. The budget commission has increased the appropriation of the state board from \$75,000 to \$165,000 per annum.—A joint resolution was passed and signed by the governor thanking the U. S. Public Health Service for the effective work done by Surg. John McMullen in trachoma eradication, and an appropriation of \$13,700 was made for a traveling clinic to work in conjunction with Dr. McMullen.

MARYLAND

To Guard Against Smallpox.—To prevent persons from New Orleans race tracks bringing smallpox into Baltimore city or the state, deputies from the state department of health are meeting every race horse train coming here for the spring racing meets. Dr. John S. Fulton, Baltimore, secretary of the board, has been notified by New Orleans health officials that a recent epidemic of the disease in that city claimed many victims among stable boys and other track employees. In spite of the vigilance of Louisiana officials, it is feared that some one suffering from the disease will slip out of the state.

For Care of Soldiers, Sailors and Marines.—The U. S. Public Health Service has entered into an agreement with the state lunacy commission and the board of managers of the Spring Grove State Hospital at Catonsville to care for soldiers, sailors and marines of Maryland suffering from mental disorders in the Arthur D. Foster Psychopathic Clinic, a separate building recently completed. The clinic will be equipped and ready for the reception of patients about May 1, and will afford accommodation for about 100 cases. The U. S. Public Health Service has agreed to furnish a clinical director, a graduate nurse to take charge of the nursing, and an occupational aide.

MICHIGAN

Health Bulletin.—The department of health of Ishpeming began in January the issuing of a monthly bulletin known as the *Ishpeming Health News*, edited by the health officer, Dr. David Littlejohn. The periodical is distributed without charge to the people of the community and contains much valuable information regarding public health.

MINNESOTA

Personal.—Dr. Harry M. E. Lowell of the Mayo Clinic, Rochester, has been appointed superintendent of the Mercy Hospital, Hamilton, Ohio.—Dr. John S. Abbott has succeeded Dr. Robert I. Hubert, resigned, as deputy health officer of St. Paul.—Dr. Herbert G. Lampson, Duluth, has been appointed physician of St. Louis County, succeeding Dr. Daniel F. V. Pennie.—Miss Linda James, St. Paul, has been appointed field secretary of the Minnesota Public Health Association.

Society Organized.—Hennepin County Tuberculosis Association has been organized to succeed the antituberculosis committee of the associated charities. Dr. Henry L. Ulrich, Minneapolis, was elected president; Drs. John W. Bell, Minneapolis, G. D. Health and John G. Gross, Minneapolis, honorary members, and Dr. Hugh C. Arey, Excelsior; Albert J. Chesley, Minneapolis; Henry W. Cook, Minneapolis; Charles E. Dutton, Minneapolis; Charles D. Harrington, Minneapolis; Frank H. Hacking, Minneapolis; Walter J. Marcley, Minneapolis; Ernest S. Mariette, Glen Lake; Harold E. Robertson, Minneapolis; J. Sundwall, Henry L. Ulrich, Minneapolis, and Frederick W. Wittich, Minneapolis, directors.

NEW JERSEY

Personal.—Dr. Walter R. Elliott, West Collingswood, has been elected president of the new Memorial National Bank, Collingswood.—Dr. Benjamin Van Doren Hedges, Plainfield, has been elected secretary of the city board of education.—Dr. Arthur L. Smith, New Brunswick, has been reelected president of the board of education.—Dr. Louis Schneider, Newark, has been appointed a member of the board of managers of the Contagious Disease Hospital, Soho.—Dr. John Miller, Netcong, was caught under his overturned sleigh recently and his right leg was fractured.

NEW YORK

Merritt H. Cash Prize.—The Merritt H. Cash prize of \$100 provided for by a fund administered by the Medical Society of the State of New York was awarded this year to Dr.

Herman B. Sheffield for an essay on "The Present Status of Poliomyelitis."

State Society Raises Dues.—The Medical Society of the State of New York at its recent meeting amended its by-laws to provide for an increase in the annual per capita dues from \$3 to \$5. Resolutions were passed instructing the delegates to the meeting of the American Medical Association to submit resolutions opposing compulsory health insurance to the House of Delegates, and to support such resolutions in every possible way.

State Society Elects.—At the annual meeting of the Medical Society of the State of New York, held in New York City, March 22 to 25, 1920, the following officers were elected: president, Dr. John Richard Kevin, Brooklyn; vice presidents, Dr. William Meddaugh Dunning, New York City, Dr. Wesley T. Mulligan, Rochester, and Dr. William H. Purdy, White Plains; secretary, Dr. Edward Livingston Hunt, New York City; assistant secretary, Dr. Charles Gordon Heyd, New York City; treasurer, Dr. Harlow Brooks, New York City; assistant treasurer, Dr. Seth M. Milliken, New York City; speaker of the house of delegates, Dr. Edward Eliot Harris of New York City, and vice speaker, Dr. Dwight H. Murray, Syracuse.

New York City

Physicians' Home.—A number of well known physicians of New York have been granted a charter to establish a Physicians' Home in which medical men who have become incapacitated for work through illness or old age might find an asylum. The president of the movement is Dr. Robert T. Morris; the secretary is Dr. Silas F. Hallock.

New York University Doctors Organize.—Graduates of the New York University and Bellevue Hospital Medical College met March 23 and organized an alumni association, electing the following officers: president, Dr. Robert J. Carlisle; vice president, Dr. Robert J. Wilson; secretary, Dr. Cornelius J. Tyson, and treasurer, Dr. Godfrey R. Pisek.

The Post-Graduate Medical School Fund.—Though the campaign to raise a \$2,000,000 endowment fund for the Post-Graduate Medical School and Hospital does not begin until March 30, a number of substantial preliminary gifts have been received. One of these is \$50,000 from James C. Brady. Dr. James F. McKernon is chairman of the committee directing the campaign.

New York Physicians Aid Vienna Physicians.—Physicians and surgeons of this city have contributed \$10,000 to supply food to the members of the medical profession in Vienna. The money has been turned over to the American Relief Administration for conversion into food drafts. Dr. Linsly R. Williams in Paris will go to Vienna to arrange for the food distribution.

OHIO

Building for Public Health Bodies.—The Toledo Academy of Medicine is planning to purchase the Hurd Democratic Club House which has been offered to it for \$42,500. Physicians have already subscribed \$20,000 toward the purchase of the property. It is believed that the building will be able to house all the public health organizations of the city, including the visiting nurse association and a medical library.

Must Serve Sentence.—Dr. Raphael W. Miller, convicted in the Cincinnati Municipal Court several years ago on the charge of violation of the narcotic law, has, it is said, lost his appeal in the court of appeals, and will have to serve three months in jail and pay a fine of \$500. The conviction, it is said, was the result of a charge that he and a druggist had supplied a woman with narcotics. The druggist was acquitted in the municipal court.

Personal.—Dr. Milo Wilson, Gallipolis, has been transferred from the Ohio Hospital for Epileptics, Gallipolis, to Holzer Hospital, Gallipolis.—Dr. Edwin J. Rose, Gallipolis, has been appointed a member of the staff of the Ohio Hospital for Epileptics, Gallipolis.—Dr. William A. McIntosh, Oberlin, has been appointed health commissioner of Lorain County.—Dr. Philip H. Dorger, city bacteriologist of Cincinnati, has resigned.—Dr. Foy C. Payne, Dayton, has been appointed pathologist; Dr. Robert C. Austin, Dayton, orthopedic surgeon, and R. M. Cope, oral surgeon, to the Stillwater Sanitarium, Dayton.—Dr. Rush R. Richison, Springfield, has been appointed health commissioner of Clark County.—Dr. Carl W. Hoopes, Marysville, has been selected as health commissioner of Union County.—Dr. Daniel E. Rausch, Stone Creek, has been elected president of the Tuscarawas County Board of Health.

PENNSYLVANIA

License Revoked.—The Board of Medical Education and Licensure is said to have revoked the license to practice medicine in Pennsylvania of Dr. Ellsworth J. Trader, Pittsburgh, who is now serving a sentence in the federal prison, Atlanta, Ga., for illegal writing of prescriptions for narcotics.

Medical Legislative Conference of Pennsylvania.—March 13, 1920, representatives of the Eclectic Medical Society, the Homeopathic Medical Society and the Medical Society of the State of Pennsylvania met in Philadelphia and organized the Medical Legislative Conference of Pennsylvania. Dr. George A. Knowles was elected chairman, and Dr. Edward A. Krusen, Norristown, secretary-treasurer.

Adams County Hospital.—The Annie M. Warner County Hospital, Gettysburg, a new hospital building accommodating forty patients, and 6 cases of land have been presented by John M. Warner to a board of managers drawn from every part of the county. The managers have announced the purchase of 14 additional acres of land. A campaign for \$100,000 endowment launched last fall will be pressed for early completion.

Health Commission Appointed.—The new state health insurance commission recently appointed by the governor has elected William T. Ramsey, mayor of Chester, chairman; Representative Theodore Campbell, treasurer, and Dr. Francis D. Patterson, Harrisburg, secretary. The commission seeks the cooperation of all physicians, employees, employers, and all other persons interested, in order that it may secure the necessary facts for making a report to submit to the governor which can be made the basis of legislation.

Philadelphia

For Control of City Dumps.—Rigid control of the dumps in the south Philadelphia "neck" district is being planned by Director Furbush of the department of public works as a part of a campaign for the correction of insanitary conditions in the southern part of the city.

Housing Association Annual Meeting.—The annual meeting of the Philadelphia Housing Association was held at the City Club, March 26. According to the annual report of conditions, only 18 per cent. of the 7,662 houses complained about have been corrected and the insanitary area of Philadelphia is increasing.

Personal.—Dr. Robert N. Kelly has been appointed surgeon of the Nautical School, Annapolis.—Dr. Dorothy Child has resigned as director of the bureau of child health in the state department of health to take effect April 1.—Dr. Karl Schaffle has resigned as head of the tuberculosis division of the state department of health.—Dr. Isaac A. Abt, Chicago, delivered an address before the Pediatric Society of Western Pennsylvania at Pittsburgh, March 29.

City Bath Houses Insanitary.—Dr. Hunter Blair Spencer, chief physician of the bureau of corrections and charities, has been making an inspection of the twenty-three public bath houses situated in different sections of the city and has found that some are in an insanitary and dangerous condition and unfit for use. The arrangements of the dressing rooms and shower baths in many of the buildings are dangerous to health, the shower baths draining into the pools.

SOUTH CAROLINA

Personal.—Dr. George McF. Mood has been reelected city bacteriologist of Charleston.—Dr. John G. McMaster, Florence, suffered serious burns of the face and hands, March 3, when he attempted to throw a burning oil stove from his office window.

New Medical Bill.—Governor Cooper on March 10 signed the new medical bill which was drawn by the state medical society and recently passed by the legislature. This bill requires all chiropractors, osteopaths, homeopaths and other healers to submit to examination before the state board of medical examiners.

Medical School Gets Larger Income.—The Medical College of the State of South Carolina secured an appropriation of \$71,000 from the state for maintenance, as compared with \$49,500 last year. An additional appropriation of \$60,000 was made for a physiology building and equipment. The sum of \$10,000 was received from the sale of the old medical building.

TENNESSEE

Roentgen-Ray Machine Given Hospital.—A citizen of Memphis who desires to remain anonymous has given a roentgen-ray machine, valued at \$1,000, to the Crippled Children's Hospital.

State Association Meeting.—The eighty-seventh annual meeting of the Tennessee Medical Association will be held in Chattanooga, April 6 to 8, under the presidency of Dr. Andrew F. Richards, Sparta. The association will be the guest of the Chattanooga Academy of Medicine.

Personal.—Dr. Cummings Harris has been appointed secretary of the Memphis Health Department, succeeding Dr. Newman Taylor.—Dr. Evander M. Sanders, Nashville, has been appointed surgeon-general on the staff of the governor of Tennessee, succeeding Dr. Mathew C. McGannon, deceased.

TEXAS

New Officers.—At the annual meeting of the Brazos County Medical Association held in Bryan, the following officers were elected: president, Dr. William B. Cline; vice president, Dr. Claude A. Searcy, and secretary-treasurer, Dr. Lonnie O. Wilkerson, all of Bryan.

New Home for Medical Society.—The Bexar County Medical Association has completed a negotiation for the purchase of the Julius Appler property, San Antonio, for \$20,000. An auditorium will be arranged on the second floor and the library and pathologic museum will be maintained on the first floor of the building.

Chiropractor Jailed.—Byron S. Black, a chiropractor of El Paso, is said to be confined in the county jail serving a sentence of twenty days on two charges of practicing medicine without a license. On the first charge, he is said to have been fined \$250 and sentenced to ten days' imprisonment and in the second case fined \$50 and sentenced to a similar period in prison.

Medical Board Election.—At the annual meeting of the Texas State Board of Medical Examiners held at Dallas, March 16, the board was reorganized with the election of the following officers: president, D. S. Harris, D.O., Dallas; vice president, Dr. Robert Y. Lacy, Pittsburg, and secretary, Dr. Thomas J. Crowe, Dallas. The next meeting of the board will be held in Galveston, June 21 to 23.

VIRGINIA

Health Almanac Reappears.—The *Virginia Health Almanac*, after an absence of several years, due to the pressure of war conditions, has made its reappearance.

Appropriation for Orthopedic Hospital.—Among the measures passed by the Virginia legislature, March 13, was one appropriating \$30,000 to the state board of health for the purpose of building an orthopedic hospital for the treatment of crippled and deformed children.

Reduction of Motherhood Casualties.—Educational work conducted by the bureau of vital statistics of the state board of health saved the lives of 164 mothers in the state in 1919, as compared with the casualty list of motherhood in 1917. In 1913, 408 Virginia mothers died at childbirth; in 1914, 487; in 1915, 469; in 1916, 467, and in 1917, 497.

WISCONSIN

Sanatorium Grounds Enlarged.—The site of the Tri-County Tuberculosis Sanitarium, Washburn, has been enlarged by the donation by F. V. Holston of Bayfield, of a tract of land to be used for park purposes, and to be known as the Lelia A. Holston Memorial Park.

Fox River Physicians Elect Officers.—At the annual meeting of the Fox River Medical Society held in Green Bay, March 4, the following officers were elected: president, Dr. William H. Bartran, Green Bay; vice presidents, Dr. Emile G. Nadeau, Green Bay, and Frank J. Wochos, Kewaunee, and secretary-treasurer, Dr. Robert L. Cowles, Green Bay.

Personal.—Dr. Harry Cohn, Wauwatosa, head of the Milwaukee County Free Medical Dispensary, has resigned and has been succeeded by Dr. Harry W. Sargeant, Wauwatosa.—Dr. Charles A. Lothrop, Ripon, has been elected surgeon to the Wisconsin Veteran's Home, succeeding the late Major Albert E. McCallin.—Dr. Henry Hannum, Bayfield, who has been under treatment at a hospital in Ashland for several months on account of a broken hip, has left for the home of his son in Muskegon.

CANADA

Dominion Physicians to Meet.—The fifty-first annual meeting of the Canadian Medical Association will be held in Vancouver, B. C., June 22 to 25, under the presidency of Dr. Simeon E. Groudin, Quebec. At the same time the Canadian Public Health Association, Canadian Association for the Prevention of Tuberculosis, Canadian Committee on Mental Hygiene, National Committee for Combating Venereal Diseases, and British Columbia Hospital Association will hold their annual meetings.

Personal.—Dr. W. M. Douglas Cruickshank, Hamilton, Ont., formerly Captain, C. A. M. C., and house surgeon in the New York Lying-In Hospital, and resident gynecologist to the Woman's Hospital, New York City, is now professor of obstetrics and gynecology in the Syrian Protestant College, Beirut, Syria.—Dr. John Stewart, Halifax, has been appointed dean of the faculty of medicine of Dalhousie University.—Dr. Edward C. Arthur, Nelson, has been appointed traveling medical officer for the province of British Columbia.—Dr. Frederick W. Marlow, Toronto, has been elected chairman of the special committee in Toronto on venereal diseases.

GENERAL

General Blue Goes Abroad.—Dr. Rupert Blue, formerly Surgeon-General, U. S. Public Health Service, left New York, March 27, for Southampton on official business.

Western Electrotherapists to Meet.—The annual meeting of the Western Electro-Therapeutic Association will be held in Kansas City, Mo., May 27 and 28, under the presidency of Dr. Burton B. Grover, Colorado Springs, Colo.

Grant for Research Work.—The American Pharmaceutical Association announces that it has available a sum amounting to about \$450 which will be expended after Oct. 1, 1920, for the encouragement of research either in full or in such fractions as in the judgment of the research committee of the association will produce the greatest good to American pharmaceutical research. Investigators desiring financial aid in the work should communicate with H. V. Arny, chairman of the American Pharmaceutical Association, Research Committee, 115 West Sixty-Eighth Street, New York City, before May 1, giving their record and outlining the particular line of work for which the grant is required. The awards will be made at the meeting of the American Pharmaceutical Association in Washington, May 3 to 8.

Honest Merchandise Act Introduced.—Congressman Rogers of Massachusetts has introduced in the House a bill to protect the public against fraud by prohibiting the manufacture, sale or transportation of misbranded, misrepresented or falsely described articles in interstate commerce. The measure is known as the Honest Merchandise Act. It applies to drugs and any articles of general manufacture. The bill places a penalty on misbranding any article offered for sale and transmitted in interstate commerce. It requires the contents of each article in package form to show on its outside the terms of weight, measure and quality; it requires that the examination of specimens shall be made in the Bureau of Standards at Washington, D. C., for the purpose of ascertaining whether such articles are described within the meaning of the bill and places a penalty of \$1,000 or imprisonment for one year on offenders.

Society for Visual Education Incorporated.—Recently, a group of educators, most of them prominent in university circles, have organized a society for visual education, to promote the cause of visual education in general, and the use of motion pictures in particular. It is stated that the society does not propose to displace textbooks, models, maps or any other educational means, but to supplement them and to make them more available. The society also proposes to publish a monthly periodical called *Visual Education*, the first number of which has been issued. The personnel of the organization, in addition to the officers, Rollin D. Salisbury, University of Chicago, president; F. R. Moulton, University of Chicago, secretary, and H. L. Clark, Utilities Development Corporation, vice president and general manager, includes a board of directors, representing most of the universities, a large general advisory board and special committees in all the various sciences and educational departments. The address of the organization is 327 South LaSalle Street, Chicago.

Influenza Epidemic Over.—The sharp decline in the morbidity and mortality rates from influenza and pneumonia for the week ending March 13 indicates that the epidemic is

practically over. The epidemic reached its height in the week ending February 14, when 267,643 cases were reported from forty-one states and the excess annual death rate as compared with the average for the period from 1910 to 1916 was 1,319. The weekly ratios of excess annual death rate for the seven weeks ending Jan. 17 to March 13, 1920, respectively, as compared to corresponding weeks ending Sept. 28 to Nov. 23, 1918, respectively, were 0.086, 0.232, 0.311, 0.282, 0.293, 0.277, 0.260, 0.243 and 0.184.—The Bureau of the Census has just issued a special report on the mortality in Indiana, Kansas and Philadelphia for the period, Sept. 1 to Dec. 31, 1918. It is estimated that 445,000 deaths from the epidemic of influenza occurred in the United States in that period. According to age periods, the highest rates occurred in the age period from 30 to 34 years, with the period 25 to 29 years second. Of all of the deaths tabulated, more than half occurred between the period of 20 to 40, although this age group represents only 33 per cent. of the total population concerned. Particularly important are the data relative to stillbirths. The large number of stillbirths occurring clearly points to the epidemic as the cause, and shows definitely the serious effect of the epidemic on pregnant women.

Bequests and Donations.—The following bequests and donations have recently been announced:

Bryn Mawr, Pa., Hospital, Maternity Ward Building Fund, \$5,307.50, the proceeds of the Bryn Mawr horse show.

Elizabeth, N. J., General Hospital, \$2,000, by the will of William T. Day, Newark.

Memorial Hospital, Morristown, N. J., two plots of land valued at \$20,000 and \$25,000, donated by Mrs. Marcellus Hartley Dodge.

Somerset, N. J., Hospital, one-half interest in the home and property of J. C. Kenyon, Raritan.

Lewistown, Pa., Hospital, \$1,500, by the will of Harriet Thomas Kurtz.

University of Pennsylvania, Philadelphia, \$50,000 for the establishment of a chair of gynecology, by the estate of Dr. William C. Goodell.

Methodist Episcopal Hospital, Philadelphia, \$25,000, the income to be used for maintenance of five free beds, by the will of Thomas Bradley.

Ohio-Miami Medical College, University of Cincinnati, a donation of \$100,000 to establish a department of preventive medicine in memory of the late Dr. Christian R. Holmes, by Mrs. Charles Fleischmann.

Ohio-Miami Medical College, University of Cincinnati, a donation of \$3,000 toward the equipment of a laboratory in the department of preventive medicine by Mrs. Christian R. Holmes, in memory of her husband.

St. Luke's Hospital, New York City, and American Red Cross, equal shares of the residuary estate of \$2,423,784, by the will of James C. Scrymser.

Henry Street Settlement, New York City, a donation of \$50,000, by Misses Alice D. and Irene Lewisohn.

FOREIGN

Personal.—Dr. Francisco Oliver, professor in the University of Zaragoza, Spain, has arrived in this country where he has been sent by the government of Spain to make special studies on methods to combat tuberculosis. Dr. Oliver was recently in England on a similar mission. He expects to stay in the United States until July.

Plague in Netherlands India.—Our Netherlands exchanges cite figures which show a flaring up of the plague in the Dutch East Indies. Since the serious epidemic of several years ago there have been only a few cases of plague here and there in the islands every week but in January there was a total of 1,746 cases in eight different places, all fatal.

Deaths in the Profession Abroad.—Dr. B. Giesker, dean of the physicians of Zurich, Switzerland, aged 79.—Dr. A. Zoppi of Venice, a prominent surgeon and orthopedist.—Dr. G. Huguenin, formerly professor of psychiatry and chief of the medical clinic at Zurich, aged 80.—Dr. C. Grube, instructor in physiology at the University of Bonn, aged 53.—Dr. H. Marx, author of several works on medicolegal questions, aged 45.—Dr. H. Schwiening, chief of the medical statistics service at Berlin, aged 50.—Dr. M. Stolz, professor of gynecology at Graz.—Dr. Gurrucharri, dean of the watering place physicians of Spain.—Dr. H. Triboulet, physician in chief of the Trousseau Hospital at Paris, aged 56.

The Five Hundredth Anniversary of the Rostock University.—The University of Rostock celebrated recently with much formality the quinquennial of its foundation. The other German universities were represented officially by Professor Pels-Leusden, from the daughter university at Greifswald, the Danish university was represented by Professor Johannsen of Copenhagen, and the Swedish academies of science by the explorer, Sven Hedin. Professor Lundström of Göteborg presented in the name of the Swedish Reichsverein an endowment of 300,000 marks for fellowships for

northland students at the Rostock University. Honorary degrees were conferred on the German surgeons Madelung and Trendelenburg; and the Berlin physicists Einstein and Planck were elected honorary members of the medical faculty. Prof. R. Kobert of the University of Rostock, whose name is well known for his research on pharmacology and physiologic chemistry, did not live to see the celebration, his death occurring earlier in the year. Rostock is nearly south of Copenhagen, on the Baltic coast.

LATIN AMERICA

Quarantine Against Havana.—The Superior Board of Health of Mexico has decided to place in quarantine all ships from Havana because of the epidemic of meningitis in that city.

Smallpox Epidemic in Mexico.—It is officially announced that there have been outbreaks of smallpox in the states of Sonora, Chiapas, Oaxaca, Morelos, Chihuahua and Guerrero. The disease continues to spread.

Gorgas in Charge of Sanitation in Peru.—Major-Gen. W. C. Gorgas has been placed in charge by the government of Peru of all sanitary works, to be conducted on the seacoast of that country for the purpose of eradicating and preventing yellow fever, plague and other diseases. Dr. Gorgas' official title will be director general of sanitation, and his salary 30,000 soles (about \$15,000).

Deaths in the Profession.—Dr. Liborio Zerda, professor of medicine and the natural sciences at Bogota for three generations of students, regent for many years of the medical faculty, and later ministro del despacho ejecutivo in the department of public instruction, member of various scientific societies at home and abroad and author of several works, including "Higiéncia" and "Visión y Luz," aged 85.—Dr. Luis Alonso y Patiño of Durango, Mexico, former governor of the state of Durango.

Government Services

Public Health Service Takes Over Army Hospitals

The War Department has turned over to the Public Health Service the Whipple Barracks in Arizona and the Fort William Henry Harrison Post in Montana. These posts are of such a character that, in the opinion of the Public Health Service officials, they can be readily converted for the use of Army service patients at a minimum of expense. Thus, the construction of new buildings at high cost for hospital purposes will be avoided.

Disease Conditions in the Army for the Week Ending March 24

There has been a slight recrudescence of influenza at Camps Gordon, Dodge and Jackson, with a slight addition in pneumonia admissions as well. Measles continue about the same, eighteen new cases being reported from Camp Knox. The admission and noneffective rates continue to show slight decline. A comparison of admission rates for influenza and pneumonia and the admission rates for disease during the epidemic period of 1918 as compared with 1920 indicates that the recent epidemic was much less severe. The highest death rate for disease during each epidemic occurred during the fourth week.

Appropriation Requested for Public Health Service

The Surgeon-General of the Public Health Service has made request of the Committee on Appropriations of the House for an appropriation of \$500,000. This is intended to be used, in addition to \$700,000, heretofore granted by Congress for hospital and sanatorium facilities in army service cases. The funds now requested are to be particularly employed in completing alterations on properties already secured from other government departments. Included in these is the Philadelphia Naval Hospital, which will be used by the Public Health Service as a hospital for neuropsychiatric patients. This work will cost, it is estimated, \$75,000. The hospital will have a capacity of 375 beds. By the expenditures of this \$75,000 on the Philadelphia Hospital, the Public Health Service will secure a property the duplication of which, it is claimed, would cost more than a million dollars.

Foreign Letters

MADRID

Feb. 10, 1920.

Scientific Courses Organized by the Board of Graduate Studies

The Board of Graduate Studies is a state agency headed by Cajal. The secretary, Don José Castillejo, is always on the lookout for professors who may contribute to the spread of experimental science in Spain. Its courses are practical. The board, in previous years, has brought to Spain A. Fourneau of the Pasteur Institute, who gave a course on drug synthesis; Urbain of the Sorbonne, who lectured on physical chemistry; Hadamard, also of the Sorbonne, who lectured on mathematics, and Leclerc du Sablon of Tolosa University, who gave a course on vegetal physiology. The board has broadened its efforts, and is now announcing courses by Prof. Lewis Knudson of Cornell University on vegetal physiology; Miss Louise Cheever of Smith College on nineteenth century English literature; Professor Mazé of the Pasteur Institute, on the dairy industry; Professor Pettit of the Pasteur Institute, on bacteriology, and Professor Frouin, on the physiology of digestion. Meanwhile, courses have already been begun by Professor Gutierrez of the Buenos Aires University on the anatomic foundation of surgery, and Professor Fuchs of Vienna on ocular pathology. Professor Avelino Gutierrez is a Spaniard, who has made a name for himself in Argentina. His first lecture was attended by all the professors, many physicians, and all the students. His first lecture illustrated the method followed throughout his course. He showed on the cadaver the parotid region, emphasizing the value of anatomy in order to operate without danger and locate without trouble the most delicate organs.

FUCHS' COURSE

Professor Fuchs' course has greatly impressed the Spanish ophthalmologists, even if all of them are familiar with the great work accomplished by the professor of ophthalmology of the University of Vienna. With the aid of a projection apparatus, Fuchs lectures in Cajal's laboratory, and discusses his collection of 700 different preparations, which he brought from Vienna and which represent his life's work. Some have been obtained under such circumstances that it would be practically impossible to duplicate them, and many were the starting point for new doctrines, which have now become ophthalmologic tenets. Fuchs, who had made a fortune of several million kroner, is one of the victims of the war, and after retiring from his chair was compelled to accept the proposition of the Board of Graduate Studies. This gave him the opportunity to spend a few months away from the city of hunger, the once gay Vienna, which used to be so popular among young American physicians. The case of Fuchs, who has always kept apart from all hatred, being a soldier only in the army which fights pain and disease, is tragic. An old man, after retiring from his profession, and no longer able to replace what he has lost, he has been compelled to abandon his country, bid good-bye to his family, and accept the offer of a few lectures; and still, this scientist, this worshipper of science, puts into his course an enthusiasm, and we may say love, which is full of life, and he demonstrates his anatomic specimens with so much pleasure and fervor that he seems to forget himself and rises to the serene heights of science.

Attack on the School of Medicine

The Senate is still discussing the law for the self-government of universities, and we already begin to see signs in

the newspapers and the academies that the universities do not deserve this privilege. Dr. Lafora, a prominent neurologist, educated in the United States, delivered a lecture in the Atheneum of Madrid attacking the School of Medicine of Madrid, as regards its buildings, its organization and its professors. His criticism was very bitter, and it attracted much attention, because of Dr. Lafora's prominence. It received, however, even more publicity through the defense made by the dean and professor of gynecology of the same school, Dr. Don Sebastián Recasens, who, if anything, made things worse. He agreed that there was need for new buildings, and did not answer Dr. Lafora's charges regarding the organization and professors of the school. In general, it seemed as if Dr. Recasens was trying to defend himself, and forgot all about the others.

LONDON

March 6, 1920.

Proposed Chair of Radiology

It is proposed to establish a chair of radiology at a university as a memorial to Mackenzie Davidson. This pioneer began as an ophthalmologist, and it was only in order to obtain help in his eye work that he turned to the roentgen rays. Soon he was enthralled by their possibilities, and he set himself to master the new craft. Of his important researches the best known is his "cross thread" method of localizing foreign bodies, which was used extensively in the war. An appeal for funds to establish the chair is published over the signatures of public men, scientists and leaders of the medical profession. It is pointed out that, remarkable as has been the development of radiology during the war, watchfulness is necessary lest full advantage be not taken of this stimulus and a period of reaction set in. There is pressing need of unremitting research. For this the best equipment possible is required and also a more thorough and systematic scheme of teaching. The University of Cambridge is alive to these requirements and has established a diploma in radiology and electrology. It is felt that the success of this step will be greatly assured if similar facilities are provided in London. The death of Mackenzie Davidson in the prime of life deprived radiology of its foremost exponent. He was unsparing in his efforts to raise the status of radiology among the sciences and was insistent on the fundamental value of physics, particularly in regard to methods of measurement and the designing of equipment. Many in his own branch of the profession, and a number of his friends and former patients, wishing to keep his memory green, have suggested that an appeal for funds should be made to found a Mackenzie Davidson chair of Radiology at some university. Until quite recently, radiology has been regarded as a purely medical subject; but experimental researches have shown that it is of commercial use. A new subject, radiometallography, has come into being and offers great possibilities for examining the internal structure of metals and other material—a further reason for the proposal.

Awards for Scientific Discoveries

The proposal that state awards should be made for scientific discoveries has been recommended by a joint committee of the British Medical Association and the British Science Guild (*THE JOURNAL*, Jan. 31, 1920, p. 337). A deputation from the Medical Committee of the House of Commons has waited on Mr. Balfour and asked that the government initiate a system of awards for medical and scientific discoveries. The deputation suggested the setting aside of \$100,000 a year on the lines of the Nobel prizes. Mr. Balfour received the deputation sympathetically, but pointed out the difficulty of settling priority in scientific discovery. He urged that a better method would be to put investigators in a more com-

fortable position for carrying on research work. As an aftermath of the representations of the deputation, the medical members of Parliament are considering the advisability of forming themselves into a committee to further the scheme of pensions for scientific men who have enriched the world by their discoveries. The view that it would be difficult to determine who are the proper recipients of pensions is not considered valid. Nor does the proposal to expend the money in further endowments of the Medical Research Committee find favor. The committee has done good work, but it cannot be maintained that original genius will not show itself outside the ranks of its staff.

The International Organization of Medical Societies

At the house of the Royal Society of Medicine, an informal meeting has been held to hear Dr. F. F. Simpson, who is on a mission from the United States of America to explain to the allied profession of Europe a scheme for the simultaneous meetings of international associations in the various departments of medicine. The idea is that in each country there should be a national association for each department of medical science, such as anatomy, physiology, surgery and gynecology, and that the national associations should be linked together to form international associations. There would be an international council to keep the various international associations in relation to one another to arrange for simultaneous meetings in selected countries. Dr. Simpson proposed the immediate constitution of a provisional committee, consisting of two representatives each of Belgium, France, Great Britain, Italy and the United States, which might meet in March to draw up suggestions to submit to certain congresses which are to be held in Paris this year. Sir Wilmot Herringham, who was the general secretary of the last international congress, held in London in 1913, criticized the proposal and has given his views in a letter to the *British Medical Journal*. International congresses, he says, have been open to all comers, and have in consequence become immense pleasure parties rather than centers of serious work. The proposed organization rests on permanent international associations, such as now exist in surgery, gynecology, etc., and are composed of those specially interested in the subjects, who are already in the habit of holding international conferences and meet for work rather than play. It was expressly stated that the new organization was not intended to supersede international medical congresses. Sir Wilmot hopes that these will die a natural death. The staff of the new organization will be more permanent than that of the old. In the new scheme Sir Wilmot Herringham finds nothing to criticize except that there is not enough business to keep alive either the proposed national executive council or the international executive council. Men will not take trouble for business that is formal. A serious disadvantage is that only allied countries will be admitted to the organization. It is not yet possible to meet enemy nations in a friendly spirit, and it will be long before that time comes about. Yet at some time or other international animosities will be softened. But an organization confined to the Allies, and yet calling itself international, is a way to perpetuate the feud which it is the interest of the world to compose. The meeting finally decided to ask the council of each of the sections of the Royal Society of Medicine and of any other suitable body whether it desires international organization for its specialty.

Osler's Successor

Sir A. E. Garrod, physician to St. Bartholomew's Hospital, who was recently appointed director of the clinical unit, has been appointed regius professor of medicine in the University of Oxford in succession to Sir William Osler. He is also consulting physician to the Hospital for Sick Children, Great

Ormond Street. He is 62 years of age and is the son of the Dr. Garrod who discovered uric acid in the blood in gout. His work has been mainly on diseases of metabolism, in which he is a distinguished authority. His publications, which are all of the first importance, include: "Treatise on Rheumatism and Rheumatoid Arthritis"; "Inborn Errors of Metabolism"; "Enterogenous Cyanosis"; "Urine" and "Uremia" (in Osler and McCrae's System of Medicine); "Urinary Pigments in Their Pathological Aspects," and "Glycosuria."

PARIS

Feb. 19, 1920.

Present State of Medical Journalism in France

The war and the economic crisis that followed it have brought about a serious state of affairs in medical journalism. Most of the journals that ceased publication during the war have resumed publication, but some have disappeared. The *Semaine médicale*, established in 1881, has ceased publication. During the thirty odd years of its existence it had acquired a unique position and a universal reputation.

The *Presse médicale* for some time past has been devoting more space to foreign medical current literature. It publishes not only numerous abstracts from medical journals, but also articles of a general nature designed to keep its readers informed in regard to events happening in the medical world (Dr. Pagniez). There is a department of surgery, in the hands of Dr. Lenormant, and a therapeutic department, at the head of which is Dr. Cheinisse.

The *Bulletin médical* has commenced the publication of a special monthly edition for foreign countries. It does not give the reports of societies. The entire first special number was devoted to purulent pleurisy.

The *Gazette des hôpitaux*, since the beginning of the year, has been publishing special numbers devoted to the bibliography of various pathologic subjects.

La Médecine, a monthly review, confines its attention in each number to the progress that has been made in some one branch of medical science; for example, the January issue is devoted to ophthalmology and otolaryngology. At the end of each article it gives a short abstract in both English and Spanish. The *Journal de médecine de Bordeaux* has likewise adopted this plan of short abstracts at the end of articles.

The *Journal de médecine de Paris* has put at the top of its first cover the following request in English: "Please read this paper, you will know the work of the French medicine."

On account of the increased cost of publication the medical journals have been obliged to raise the price of subscriptions. It is doubtless owing to the stress of present economic conditions that the *Journal de médecine de Paris* makes an announcement that one does not expect to find in a medical journal: "Persons sending in ten subscriptions at one time will be entitled to one subscription free."

In order to make it easier to cope with the present unfavorable economic conditions, the *Journal des Praticiens*, which recently published an editorial on the significant subject, "Scientific Journals in a Life and Death Struggle," has demanded that government subsidies, instead of going to political journals as at present, should be given to aid in the publication of scientific journals.

The Belgian medical review, *Le Scalpel*, points out another way of securing relief, which may be applicable to the Belgian medical press at least. Generous America having recently given to the Belgian universities a considerable sum of money to be used in subsidizing scientific research, *Le Scalpel* offers the suggestion that the scientific press of Belgium might experience a happy secondary reaction from this example of American generosity, if the scholars to whom the benefits primarily inure would be disinterested enough to furnish the

scientific press with gratuitous reports of their investigations and discoveries.

A new provincial journal, the *Journal de médecine de Lyon*, has appeared. It is a bimonthly and is published under the scientific direction of Profs. Joseph Teissier, Edmond Weill, Jean Lépine (son of the late Raphael Lépine), and others. It is devoted especially to the publication of news and of medical articles contributed by the physicians of the region about Lyons.

Among the special journals I may mention the *Revue de gynécologie et de chirurgie abdominale*, of which the late Prof. Samuel Pozzi was the managing editor, but which has now ceased publication. The *Annales de gynécologie et d'obstétrique*, at the head of which were Professors Pinard, Hartmann and Pollosson, and the *Archives mensuelles d'obstétrique et de gynécologie*, of which Profs. Paul Bar and J.-L. Faure were managing editors, combined the first of the year and now constitute a single review known as *Gynécologie et Obstétrique*.

Lethargic Encephalitis

New cases of lethargic encephalitis are reported from almost every section of the country. However, it would now appear that the situation is by no means as serious as was at first supposed. The Conseil d'hygiène of the department of the Seine has deemed it wise to call the attention of the Corps médical to the appearance of the disease in question and to the desirability of receiving from physicians reports of all cases that they may have an opportunity to observe. The Académie de médecine, at the suggestion of Dr. Netter, has likewise requested that physicians report to the academy all cases of undoubted and doubtful lethargic encephalitis that they may observe.

Serums Furnished by the Paris Pasteur Institute

Since 1894 the Pasteur Institute had been furnishing gratuitously to all prefectures all the diphtheria antitoxin needed in hospitals and in free dispensaries for the poor. Since the discovery of new serums the prefects had demanded not only diphtheria antitoxin, but also all the new serums, and especially the serums used against tetanus, the meningococcus, the streptococcus and the pneumococcus. While pharmacists were in the habit of keeping on hand a supply of diphtheria antitoxin, they did not, as a rule, have the other serums in stock, and, as the physicians could procure them only in the prefectures, the result has been that serums intended for the poor have been used for the treatment of patients who are able to pay.

In view of this condition of affairs, it has been decided that the Pasteur Institute will continue to provide serums directly and gratuitously to the hospitals, but that for serums furnished to physicians, private individuals, and public prophylactic services a charge will be made through the pharmacists from whom they may be secured. The pharmacists will procure their stocks through their associations and the latter will be provided for by the Pasteur Institute. Furthermore, no speculation will be tolerated on the part of the pharmacists, the highest price that can be charged for any serum furnished by the Pasteur Institute being 4 francs per dose.

Marriages

THOMAS ALBERT WILLIAMS, Middletown, Va., to Miss Marie Pittman of Charles Town, W. Va., in Washington, D. C., February 11.

ROBERT WALDORF FISHER to Mrs. Emily White Mills, both of Morgantown, W. Va., February 13.

MILLARD WILSON HALL, Wichita, Kan., to Miss Sadie Hall of Ottawa, Ill., March 10.

Deaths

Frederick Thomas Reyling ☉ Kansas City, Mo.; University of the City of New York, 1884; aged 59; a member of the American Academy of Ophthalmology and Oto-Laryngology; a specialist on diseases of the eye and ear; instructor in histology in his alma mater from 1884 to 1892; professor of materia medica and therapeutics in the New York College of Comparative Histology and Veterinary Surgery, and instructor in diseases of the eye in the New York Post-Graduate School and Hospital from 1889 to 1896; professor of histology and pathology in the University Medical College, Kansas City, from 1899 to 1901, and professor of histology, pathology and bacteriology in the College of Physicians and Surgeons, Kansas City, Kan., from 1901 to 1905; died, February 24, from pneumonia.

Shobal Vail Clevenger, Chicago; Chicago Medical College, 1879; aged 77; a veteran of the Civil War; chief engineer of the Southern Dakota Railway; special pathologist to Cook County Institutions, Dunning; superintendent of the Illinois Eastern Hospital for the Insane, Kankakee, in 1893; for several years neurologist to the Alexian Brothers and Michael Reese hospitals; lecturer on art anatomy at the Chicago Art Institute, on physics at the Chicago College of Pharmacy and on medical jurisprudence in the Chicago College of Law; a prolific contributor to medical literature; one of the founders and first secretary of the Chicago Academy of Medicine; author of a two volume work on "Medical Jurisprudence of Insanity"; died, March 24, from cerebral hemorrhage.

Kimbell W. Leland, Utica, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1879; Rush Medical College, 1892; aged 62; a member of the Illinois State Medical Society; president of the LaSalle County Medical Society in 1899; formerly mayor and health officer of Utica, and president of the Utica school board; chairman of the board of directors of the new LaSalle County Tuberculosis Sanatorium, South Ottawa; died in St. Mary's Hospital, LaSalle, Ill., March 12, from pneumonia.

Charles Edward Whiteside, Moline, Ill.; College of Physicians and Surgeons, Chicago, 1894; aged 50; a member of the Illinois State Medical Society; once alderman of Moline; lieutenant and assistant surgeon, Illinois National Guard, and assigned to the Sixth Infantry during the war with Spain; died in the North Chicago Hospital, Chicago, March 20, from carcinoma of the lower jaw.

Frederick Jacob Leviser ☉ New York City; University of Goettingen, Germany, 1884; aged 59; a specialist in dermatology; a member of the American Dermatological Society and New York Academy of Medicine; consulting dermatologist to the Montefiore Home and Hebrew Orphan Asylum, and chief of the dermatological clinic of Mt. Sinai Hospital; died, March 9.

William Charles Chilson ☉ Tulare, Calif.; University of California, San Francisco, 1902; aged 43; Captain, M. R. C., U. S. Army, with service overseas, and discharged September 4, 1919; was found dead in a hotel in Fresno, Calif., March 10, from the effects of a gunshot wound of the heart, believed to have been self-inflicted, with suicidal intent.

William Teel Montgomery ☉ Chicago and Evanston, Ill.; Rush Medical College, 1871; aged 76; a veteran of the Civil War; a specialist on diseases of the eye and ear; oculist to Presbyterian Hospital, and a trustee of the Illinois State Charitable Eye and Ear Infirmary; died in Evanston, March 25.

John Loren McAllister, Martinsville, Ohio; Ohio Medical University, Columbus, 1905; aged 39; a member of the Ohio State Medical Association; captain, M. R. C., U. S. Army, and on duty with the Eighty-Fourth Division, A. E. F., in France, and discharged Aug. 22, 1919; died, March 12, from influenza.

Allen R. Holshouser, Rockwell, N. C.; Chattanooga (Tenn.) Medical College, 1904; aged 66; while driving in an automobile over a grade crossing near Sallsbury, N. C., February 24, was struck by a locomotive, fracturing both legs and causing other injuries, from which he died, February 26.

Louis B. Carson, Maquoketa, Iowa; Hahnemann Medical College, Chicago, 1892; aged 47; a member of the Iowa State

☉ Indicates "Fellow" of the American Medical Association.

Medical Society; captain, M. R. C., U. S. Army, and discharged March 19, 1918; supreme medical director of the Home Guards of the World; died, March 10, from heart disease.

James Lenox Rea ☉ Scranton, Pa.; Jefferson Medical College, 1876; aged 65; once president of the Lackawanna County Medical Society; consulting physician to the State Hospital for Northwestern Pennsylvania, Scranton; surgeon of the Delaware and Hudson Railroad; physician to the Oral School for the Deaf, Scranton; died, February 22.

George Read Skinner, Marion, Iowa; Bellevue Hospital Medical College, 1866; aged 83; a member and once treasurer of the Iowa State Medical Society; consulting surgeon to St. Luke's Hospital, Marion; a veteran of the Civil War; died at the home of his son in St. Louis, March 10.

Willoughby C. Kline, Myerstown, Pa.; University of Pennsylvania, Philadelphia, 1872; aged 69; for many years a druggist and practitioner of Myerstown; a member of the state pharmaceutical association, and a director of the Myerstown Trust Company; died, March 15.

Vincent Joseph Campisi, Brooklyn; Long Island College Hospital, Brooklyn, 1914; aged 32; was summoned to a tenement house in Brooklyn, March 25; and was found there stabbed to death. The body of the supposed patient was found in the same room strangled to death.

Julian Bezel Beck, Chicago; College of Physicians and Surgeons, Chicago, 1904; aged 43; a member of the Illinois State Medical Society; assistant professor of dermatology in Loyola University; died in Mount Sinai Hospital, Chicago, March 25, from cerebral hemorrhage.

James P. Saffold, Washington, D. C.; Columbian University, Washington, D. C., 1885; aged 65; since 1888 an employee of the Treasury Department and assistant chief of division in the office of the Auditor for the Navy; died, February 29, from heart disease.

Pierre S. Starr, Hartford, Conn.; University of the City of New York, 1862; aged 89; assistant surgeon of the Thirty-Ninth Ohio Volunteer Infantry during the Civil War; who fell and fractured his hip, February 27; died in the Hartford Hospital, March 11.

William A. Batchelor ☉ Milwaukee; University of Pennsylvania, Philadelphia, 1884; aged 63; surgeon to the Milwaukee Hospital, Illinois Steel Company, and Chicago, Lake Shore and Eastern Railroad; died in Cleveland, March 18, from heart disease.

William Ralph Buchanan, Major, M. C., U. S. Army, Washington, D. C.; Hahnemann Medical College, Philadelphia, 1902; aged 49; who was undergoing physical reconstruction; died in the Walter Reed General Hospital, Takoma Park, D. C., March 5.

Samuel Hollis, Hartford City, Ind.; Kentucky School of Medicine, Louisville, 1879; aged 68; a member of the Indiana State Medical Association; while making a professional call near Hartford City, March 13, died suddenly from heart disease.

Walter McTaggart, Harrisburg, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 57; a member of the Illinois State Medical Society; died at the home of his daughter in Mt. Vernon, Ill., March 11, from septicemia.

Daniel Russell Phillips, Leavenworth, Kan.; College of Physicians and Surgeons in the City of New York, 1887; aged 56; a member of the Kansas Medical Society; died in Topeka, Kan., March 5, from myocarditis.

Walter Thomas Hall, Toulon, Ill.; Medical Department University of Iowa, Keokuk, 1869; aged 79; once president of the Stark County Medical Society and president of the board of health of Toulon; died, March 8.

William W. Ray, Eastover, S. C.; Kentucky School of Medicine, Louisville, 1886; aged 61; a member of the South Carolina Legislature in 1884; died in the Columbia (S. C.) Hospital, March 1, from angina pectoris.

Barton Pitts, St. Joseph, Mo.; University of Maryland, Baltimore, 1881; aged 60; a member of the Missouri State Medical Association; a specialist on diseases of the eye and ear; died, March 10, from heart disease.

Robert Charles Dickinson, Brundidge, Ala.; Memphis (Tenn.) Hospital Medical College, 1901; aged 50; a member of the Medical Association of the State of Alabama; died, about March 4, from heart disease.

Jonathan Franklin Richardson, Wankegan, Ill.; Medical Department, University of Iowa, Keokuk, 1864; aged 83; for many years a practitioner of Keota, Iowa; died, March 18.

Lee Roy Burdeshaw ☉ Headland, Ala.; Chattanooga (Tenn.) Medical College, 1899; aged 44; once president of the Henry County Medical Society; died, March 6, from cardiorenal disease.

James B. Campbell, London, Ont.; Western University, London, Ont., 1898; associate professor of physiology and later associate professor of medicine in his alma mater; died, February 9.

Martin Toner Balsley ☉ Joplin, Mo.; Medical College of Indiana, Indianapolis, 1881; aged 66; formerly of Indianapolis and Danville, Ill.; died, about March 13, from valvular heart disease.

Logan D. Berry, Danville, Ga.; Atlanta School of Medicine, Atlanta, Ga., 1909; aged 38; a member of the Medical Association of Georgia; died, about February 29, from influenza.

Ernest Major Jordan ☉ Boston; Boston University, 1899; aged 48; for seven years professor of nervous diseases in his alma mater; died, March 13, from pernicious anemia.

Bruce Raynor Leighton ☉ Kalamazoo, Mich.; Western Reserve University, Cleveland, 1912; aged 36; died in the Boggess Hospital, Kalamazoo, January 24, from pneumonia.

George S. Carter, Beckville, Texas (license, Sixth Judicial Board, Texas, 1889); aged 58; died at the home of his daughter in Marshall, Texas, March 4, from tuberculosis.

Richard McSherry, Littlestown, Pa.; University of Maryland, Baltimore, 1880; aged 64; for many years a practitioner of Baltimore; died, March 12, from cerebral hemorrhage.

Archie B. Atchison, Winnebago, Ill.; Hahnemann Medical College, Chicago, 1899; aged 49; died in Irvington, Ala., March 9, from heart disease following influenza.

Samuel Vincent Romig, Chicago; University of Michigan, Ann Arbor, 1872; aged 78; for many years a practitioner of Rockford and Winnebago, Ill., died, March 8.

Nicholas C. Trout ☉ Fairfield, Pa.; Jefferson Medical College, 1896; aged 53; a director of the Gettysburg National Bank; died, March 23, from diabetes.

J. Carl Smith, Ellerslie, Md.; Baltimore University, 1888; aged 59; died in Franklin Square Hospital, Baltimore, February 28, from cerebral hemorrhage.

Layton W. Cooke, Fruitdale, S. D.; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 68; died, about March 12, from pneumonia.

Charles E. Schmitz, Cambridge, Ida.; Barnes Medical College, St. Louis, 1903; aged 40; died, February 23, from pneumonia following influenza.

Richard H. Disse, St. Louis; St. Louis College of Physicians and Surgeons, 1887; aged 51; died, March 8, from cardiorenal disease.

Julius Goldsmith, New York City; Eclectic Medical College of the City of New York, 1905; aged 46; died, March 10, from pneumonia.

Edwin R. Baker, Philipsburg, Ohio; Medical College of Ohio, Cincinnati, 1876; aged 68; died, March 5, from bronchopneumonia.

Charles Lee Holloway, St. Joseph, Mo.; Kansas City (Mo.) Medical College, 1885; aged 53; died, February 22, from diabetes.

Boston N. Speer, Monclova, Coahuila, Mex.; Chattanooga (Tenn.) Medical College, 1897; died, March 14, from heart disease.

Ethan Allen DeCamp ☉ Flint, Mich.; Detroit College of Medicine, 1900; aged 55; died, March 7, from malignant disease.

George Sumner Provine ☉ Blandinsville, Ill.; University of Illinois, Chicago, 1906; aged 37; died recently from appendicitis.

Rufus H. Starks, Benton, Ky.; Louisville, Ky., Medical College, 1888; aged 67; died, February 26, from dysentery.

Helen E. Hill, Brooklyn, N. Y.; Eclectic Medical College of the City of New York, 1881; aged 80; died, March 20.

Alexander O'Neil, Lansing, Mich.; University of Michigan, Ann Arbor, 1868; aged 72; died, March 4.

William Stairs Morrow, Montreal; McGill University, Montreal, 1881; aged 50; died, recently.

Correction.—A telegram from Dr. William C. Hassler, health officer of San Francisco, whose death was erroneously noted in THE JOURNAL of March 27, states that he has been ill with influenza, but has recovered.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

ANTI-TUBERCULOUS LYMPH COMPOUND (SWEENY) AND ANTI-SYPHILITIC COMPOUND (SWEENY)

Reports of the Council on Pharmacy and Chemistry

The Council has authorized publication of the reports which appear below, declaring Anti-Tuberculous Lymph Compound (Sweeny) and Anti-Syphilitic Compound (Sweeny) ineligible for New and Nonofficial Remedies.

W. A. PUCKNER, Secretary.

Anti-Tuberculous Lymph Compound (Sweeny)

"Anti-Tuberculous Lymph Compound (Sweeny)" is put out by the National Laboratories of Pittsburgh, Dr. Gilliford B. Sweeny, "Medical Director." Sweeny has claimed at different times that he became interested in the subject of von Behring's efforts to immunize cattle to tuberculosis at a time when he was an assistant in von Behring's laboratory. He claims to have conceived the idea while there of transferring bovine immunity to tuberculosis to the human subject and later to have evolved his "treatment" at the Pasteur Institute in Paris.

Just how Anti-Tuberculous Lymph Compound is made today is not stated—at least so far as one is able to learn from recent advertising. Some years ago Sweeny declared that his "Anti-Tubercular Lymph" (as it was then called) was derived from a bullock which had been immunized to tuberculosis. Then:

"The immunized animal having been slaughtered, the contents of the lymph reservoirs are carefully collected and an aqueous extract is made from the grey cerebral substance, spinal cord and the lymph glands. It is then filtered under high pressure and de-albuminized by succussion. To this, the lymph, together with a definite proportion (50 per cent.), of the naturally phosphorized brain fats is added, with a small amount of chloride of gold (about 1-60 gr. to the dose), the latter as a preservative."

It is a fair assumption that however the preparation may have been made originally, it is not now made in such a manner as to bring it under the federal laws governing the preparation of serums and similar preparations. The claims made for Anti-Tuberculous Lymph Compound are of the usual uncritical, and unscientific type. Mainly, of course, they are of the testimonial class. The physician is told that the preparation has been carefully tested by men whose judgment is worthy of consideration; that the verdict has been altogether favorable to the "Compound." Thus:

"... the remedy was submitted to a selected body of skilled physicians, recognized for their skill and care in making therapeutic observations. These men represented widely varying conditions, climatic and otherwise. Those who said ten years ago that Anti-Tuberculous Lymph Compound has a specific immunizing influence upon the tuberculosis patient, find the same to be true today."

Careful reading of the matter just quoted will reveal its ambiguity and inherent lack of frankness. The inference conveyed is that the "selected body of skilled physicians" have unqualifiedly endorsed Anti-Tuberculous Lymph Compound (Sweeny)—but it does not say so!

It is the history of all such preparations, introduced to the medical profession with the usual blare of trumpets, that a certain number of favorable testimonials can be obtained. It is also the history of such products that one has but to wait a few years and the physicians who had written most enthusiastically regarding the preparation—in the first flush of their optimism following its use and the perusal of the manufacturers' literature—will acknowledge that they were mistaken in their original estimate and are no longer using the agent. In this connection an investigation of some of the

old testimonials for Anti-Tuberculous Lymph Compound by the Propaganda department of THE JOURNAL is instructive.

In a somewhat elaborate booklet published in 1907 by Sweeny, an Indiana physician was said to have reported favorable results following the administration of the "lymph." A letter written to this physician in October, 1919, asking for his present opinion on the product brought this reply, in part:

"... it being twelve years since using the serum and no reference or repeated orders since should surely suffice as evidence of my lack of faith in the serum. . . ."

An Illinois physician was reported in the same booklet to have described a case of a young man with an active tuberculosis, who was given injections of the "lymph" in February, 1907. The patient, it was claimed, showed immediate improvement and the Sweeny booklet (published in August, 1907) stated that "improvement in this case continued and terminated in complete recovery." A letter written to the physician in October, 1919, brought out the fact that the young man in question, after receiving "Anti-Tuberculous Lymph Compound" and *other treatment* was removed "on a stretcher" "to New Mexico, where he remained for three or four years" and recovered. The doctor adds:

"I do not think that the Anti-Tuberculous Lymph had anything to do with the man's recovery, although I realize the difficulty of definitely analyzing just what did effect the cure. I did since that time use that preparation in several other cases without beneficial results so that I gave it up a good many years ago adding it to that large heap of pharmaceutical material 'weighed and found wanting.'"

A physician in Texas also reported in the 1907 booklet as having had very satisfactory results with the Anti-Tuberculous Lymph Compound in one case of pulmonary tuberculosis was written to in October, 1919. He replied:

"I will state that subsequent use of this compound did not bear out the apparent good results from its use in the first case or two."

In a "Bulletin" issued by the Sweeny concern in 1912, a Pennsylvania physician was quoted as having treated three cases with Anti-Tuberculous Lymph Compound with resultant cures. This physician was written to in October, 1919, and he replied:

"I have no knowledge of the use of my name by any Pittsburgh concern and know nothing of a lymph of the name of Sweeny; neither do I recollect ever curing three cases of tuberculosis with any lymph."

The same "Bulletin" quoted the alleged statement by a Delaware physician to the effect that he believed Anti-Tuberculous Lymph Compound to be the most successful treatment of tuberculosis extant. This in 1912. To an inquiry sent in October, 1919, this physician briefly replied:

"Am not using it now."

The result of the Propaganda department's questionnaire was what might have been expected. Every physician who answered the inquiry regarding his previous and present opinions of Anti-Tuberculous Lymph Compound (Sweeny) declared, in effect, that he had long since ceased to have faith in its value or efficacy.

According to claims made in the Sweeny literature, "Anti-Tuberculous Lymph Compound exercises its immunizing power through a specific action upon the blood cells." The statement that "it destroys the tuberculosis germ when this is present in the system of the patient" is untrue. The facts are, no serum or lymph has thus far been proved to have any value in the treatment of tuberculosis even when fortified by "a small proportion of chloride of gold and soda" as one circular tells us the "lymph" is. In spite of years of research by competent investigators, we are still without any aid in the form of a serum in the treatment of tuberculosis.

Anti-Tuberculous Lymph Compound (Sweeny) is one of those preparations that need no elaborate laboratory tests, nor even exact therapeutic research, to convince any clear-thinking person that it is patently and obviously worthless. One would hesitate before asking any reputable clinician to test a preparation of this sort. It is a constant source of surprise that some physicians allow themselves to be persuaded by advertising literature that is obviously uncritical and unscientific, to use preparations which have no more reasonable foundation than this one.

The Council declares Anti-Tuberculous Lymph Compound (Sweeny) not acceptable for New and Nonofficial Remedies.

Anti-Syphilitic Compound (Sweeny)

This preparation also is made by or under the direction of the same Dr. Gilliford B. Sweeny whose researches (?) led to the production and evolution of the Anti-Tuberculous Lymph Compound (Sweeny). According to the data at hand, this preparation is made by suspending benzoate of mercury in lymph from the bullock. Case reports are given of alleged cures of syphilis after two months of treatment; indeed, the circular exploiting the agent makes the statement that it is seldom necessary to continue the treatment beyond two months, which, if one chose to be credulous, would indicate extraordinary power for the mercury.

Mercury of course has a proper place in the treatment of syphilis, but that any physician could be induced to place his trust in this preparation is almost unthinkable though testimonials—which the "National Laboratories" claim to have received from physicians—are published. They all stamp the writers as not only gullible but also incompetent. The tenor of the claims is on a par with those made for the Anti-Tuberculous Lymph Compound; they do not justify the time required for detailed consideration.

The Council declares Anti-Syphilitic Lymph Compound (Sweeny) not acceptable for N. N. R.

Correspondence

FACTS LEADING TO PUBLICATION OF "ARMY FROWNS AND SMILES"

To the Editor:—There has come to my attention the following advertisement of a book published by Dr. D. E. Compere, formerly a first lieutenant in the Medical Corps:

"A 'RED HOT' BOOK JUST OFF THE PRESS

ARMY FROWNS and SMILES

By Dr. D. E. Compere
(First Lieut. M. C. U. S. Army)

Pulling the Cover OFF OFFICIAL ROTTENNESS

Flavored by the Soldier's Courage
Shield, A SMILE

DEDICATED

To the memory of an ORPHAN, Private
Russell A. Wood, No. 673d Aero Supply Squadron,
A. C. S. D. & C. C., who died October 11,
1918, at Camp Morrison, Va., WITHOUT
PROPER MEDICAL ATTENTION.

"Also to the memory of each noble HERO who made the supreme sacrifice and gave his life for our country, but especially to all those who died the result of hard boiled, cold blooded, callous neglect.

"I served in the Medical Corps nearly twelve months and learned of ROTTENNESS which is a disgrace to any civilized nation, and America will not approve and WHITE-WASH. Therefore, it is now my DUTY to tell the PUBLIC these FACTS, and if they desire conditions to continue as bad or even worse, such is their privilege, BUT I HAVE DONE MY BIT."

"I had rather be branded as a belly-acher than as a shut-mouth. To know that such rottenness exists and keep quiet is a thousand times worse than to be misunderstood."

"THIS WORLD WAR WAS WON BY FREE MEN FOR THE FREEDOM OF MANKIND; YET, JUSTICE CANNOT BE SECURED THROUGH THE CHIEF OFFICIALS OF THE UNITED STATES OF AMERICA."

"Convenient RULES, protecting a wonderful system of 'SUPPOSED TO BE' Justice in FREE America, when the TAXPAYERS, THE VOTERS, 'THE BOSS' is not supposed to know or be given copies of, what is being done by some of OUR GOVERNMENT OFFICIALS in the City of Washington, and even though MILITARY LAW is VIOLATED by DEPARTMENT CHIEFS, 'THE BOSS' dare not criticise. 'GREAT STUFF'."

PRICE \$2.00

In view of the fact that many persons who have lost relatives and friends in the service will be deeply troubled by the statements made by Dr. Compere, and, further, because

of the serious reflections on the War Department and on the fidelity and integrity of physicians formerly in the service, it is believed that the true facts in regard to the matters referred to by Dr. Compere should be given wide publicity, and I therefore request that this letter be published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The matters to which Dr. Compere refers in his book had their origin in the following letter addressed by him to the Surgeon General:

"Camp Hospital, Camp Alfred Vail,
Signal Branch, N. J., October 23, 1918.

"From: 1st Lt. Dolphus E. Compere, M. C.
To: The Surgeon General, U. S. Army (thru Official Channels).
Subject: Major Butler, Camp Surgeon, Camp Morrison, Va.

"1. At 8:00 P. M. October 8th I received the following telegram from my wife, 'Gano (my brother) seriously ill, pneumonia, mother says, if possible go to him.' At 8:30 P. M. Oct. 8th I wired the Camp Surgeon, Camp Morrison, Va. 'Please wire exact condition of my brother, Cpl. Gano Compere,' signed it Lt. D. E. Compere, Camp Surgeon, Camp Alfred Vail, N. J. After waiting fifteen hours with no reply and upon the suggestion of Colonel Helms, Commanding Officer, Camp Alfred Vail, N. J., at twelve o'clock Oct. 9th I wired the same message again except added 'report delivery.' After no reply at 8:00 P. M. Oct. 9th I wired mother 'Where and how is Gano. Have wired twice, no reply.' At 9:50 P. M. Oct. 9th my mother answers, 'catch first train, Camp Morrison, Va. Gano seriously ill. Heard nothing.' At 7:00 A. M. Oct. 10th the Western Union reports 'Your message to Camp Surgeon, delivered 2:00 P. M. Oct. 9th and at the same time delivered this message 'Condition better today,' signed Major Butler, Camp Surgeon, Camp Morrison, Va. dated 9:42 P. M. Oct. 9th. I find Major Butler did receive both of my messages. He completely ignored the first and waited from 2 o'clock until 9:42 P. M. to answer the second, so after waiting over 36 hours and requesting his exact condition, then to receive such a vague indefinite reply, upon the consent of Colonel Helms I hurried to Camp Morrison. Upon arriving I first met Capt. Steffen who accompanied me to Ward 13 where I found my brother. Capt. Steffen looked at his clinical record then placed it back with the others without showing it to me, then I asked if I might see it. He said 'Yes, of course,' also that my brother was transferred to the Camp Hospital from one of the auxiliary Company Hospitals. The clinical record shows that he was admitted Oct. 6th at 5 P. M. and his first temperature 100.8 was recorded at 7 A. M. Oct. 7th and has not been 100 since that date. My brother said he came direct from his barracks to this Hospital October 6th at 1 P. M. and Lt. J. D. Nelson took his temperature soon after his arrival. He asked how much fever he had and Lt. Nelson replied 104. I could not prevent hearing and seeing dangerously ill soldiers around my brother, but one especially attracting my attention was unconscious and breathing so fast and hard that as I sat on my brother's cot, I held my watch and found his respiration to be 50 per minute. About 12 o'clock the ward orderly came around giving 1/30 gr. strychnine tablets and Dovers powders and finding he could not prize this poor fellow's mouth open with a spoon he remarked 'Oh well, when you can't get their mouths open, there's nothing else to do.' I saw the nurse sitting in the ward record room writing and filling in papers, also I talked with Lt. Nelson, the ward surgeon and hereby testify that absolutely nothing was done for this dying soldier from 8:30 A. M. until after 3 P. M. also my brother said 'All others are treated the same and this soldier Pvt. Woods had been expected to die for three days.' I went to the office and talked with Major Butler about my telegrams and found him to be very insulting and disrespectful. He said, 'Well what's your grouch.' I said promptly 'simply if you had wired me the exact condition of my brother I would not have left my work.' He said 'Oh is that all.' Then I said, 'No and I would like to know if all your cases are allowed to die without attention as I know one man to be doing.' He asked me who sent me down to spy into his business. I replied I was there upon official permission of Colonel Helms my Commanding Officer to visit a sick brother. He said 'if you have any kicks to make about me send them to Washington through official channels.' I assured him this would be done.

(Sgd.) "Dolphus E. Compere,
1st Lt. M. C. Surgeon."

This letter was referred to the commanding officer at Camp Morrison, who, under date of Oct. 18, 1918, stated that in view of the sudden appearance of the influenza epidemic and the widespread fatalities resulting from it, he believed that the Surgeon, Major Benjamin J. Butler, Medical Corps, was entitled to commendation rather than condemnation for the creditable manner in which he handled the emergency. Approximately 50 per cent. of the camp personnel became inmates of the hospital within the period of a few days, and investigation demonstrated that the percentage of fatalities (approximately 3 per cent. of the total number of cases) was lower than in the majority of other camps in the country. He further stated that the accommodations at this camp were inadequate to accommodate such a number of sick demanding treatment within a few days, and that it was necessary to improvise hospital space. To his personal

knowledge, the physicians, nurses and medical attendants left their posts while the epidemic was at its height only long enough to secure essential rest and it was necessary to detail nearly 200 men from the Air Service to assist the regular hospital personnel.

In view of the seriousness of the charges made by Lieutenant Compere, the matter was investigated by the representative of the Inspector General's Department of the Army located at the Port of Embarkation, Newport News, Va. The inspector was Col. J. T. Nance, a retired officer of long experience and high attainments. The investigation covered the period from Oct. 28, 1918, to Nov. 12, 1918, and was thorough. Colonel Nance's conclusions and recommendations are as follows:

"(a) That Lieutenant Compere's allegation that his first telegram was ignored is not sustained by the evidence.

"(b) That his allegation that reply to the telegram was delayed is sustained by the evidence, but that a large part of this delay was incident to poor telegraphic service available and that the remainder of the delay was incident to conditions existing during the epidemic of influenza and pneumonia.

"(c) That his allegation that the reply was vague and indefinite when he had requested information as to the exact condition of his brother is sustained by the evidence.

"(d) That his complaint that Private Wood was being allowed to die without attention, 'that absolutely nothing was done for this dying soldier from 8:30 A. M. until after 3:00 P. M.' is not sustained by the evidence.

"(e) That the complaint that Major Butler was very insulting and disrespectful toward First Lieutenant D. E. Compere is sustained, in a measure, by the evidence. It is remarked in this connection that there were extenuating circumstances; that Major Butler had many cares and responsibilities, and that Lieutenant Compere's presumption and manner were irritating.

RECOMMENDATIONS:

"(a) That Major Benjamin J. Butler, M. C., be instructed to comply in future with Army Regulations No. 824.¹

"(b) That no other action be taken in his case as far as Major Butler is concerned.

"(c) That disciplinary action be taken in the case of First Lieutenant Dolphus E. Compere, M. C., for making the false statement contained in his complaint that 'absolutely nothing was done for this dying soldier from 8:30 A. M. until after 3:00 P. M.'"

The recommendations of Colonel Nance were concurred in by the Commanding General of the Port of Embarkation, Brig. Gen. H. B. Ferguson, by the Surgeon General, and by the Inspector General, but in view of the fact that Lieutenant Compere had been honorably discharged from the service on Dec. 14, 1918, prior to the receipt of Colonel Nance's report in the office of the Inspector General, it was not practicable to take any disciplinary action in this case, and the Inspector General recommended that notation of the facts disclosed by the investigation be made on the efficiency record of Lieutenant Compere and that no further action be taken. This notation on the efficiency record was made.

About December 15, after his discharge from the service, Dr. Compere appeared in my office and behaved in a very objectionable and discourteous manner. Since that date several communications from him have been received by various officials of the War Department, in which he has made many allegations, more or less exaggerated and incorrect, particularly his frequent assertion that the investigation at Camp Morrison was in the nature of a "white-wash" and was made by an inspector of the Medical Department of the Army, whereas this inspection was made by an officer of the Inspector General's Department, which is the final authority in the military service designated by law to investigate facts in regard to complaints and misconduct.

The foregoing statements are made from no desire to enter into further controversy in regard to the matters in question, but merely to place before the Fellows and members of the

American Medical Association a clear and unbiased statement of the facts leading up to the publication of "Frowns and Smiles."

M. W. IRELAND, M.D., Washington, D. C.
Surgeon General, U. S. Army.

CONDITIONS IN VIENNA

To the Editor:—You may be interested in the enclosed excerpt from a letter written me by Lieutenant-Colonel Leach, who has been long connected with Belgian relief, the American army, and the American relief administration.

ROY LYMAN WILBUR, Stanford University, Calif.
President, Leland Stanford Junior University.

I have just been making a survey of conditions among the medical profession here in Vienna with Dr. von Pirquet. There are about 4,500 medical men, and at least 90 per cent. of them are working on half rations, and many are actually on the point of starvation. I had a talk with Prof. Eiselsberg yesterday, who is the leading surgeon of Vienna. In the last year he has lost 20 pounds in weight through insufficient nourishment. He has plenty of Austrian money, but cannot buy from the farmers as they will accept nothing but foreign money of recognized value or will barter for wearing apparel. I was told today in a Vienna shoe store of a peasant who came in and was advised not to spend his money for expensive shoes when he could wear sandals. These same shoes cost 5 kronen before the war. He replied that it really didn't make much difference, as his father and grandfather had always figured a pair of ducks equivalent to a pair of shoes. That simply raised the market value of the ducks. To get eggs, butter or milk in the country, which is the only place they are obtainable at the present, it is necessary to go armed with shoes, silk stockings, underwear, etc. When the surplus of clothes is exhausted there is nothing in sight but starvation.

I have suggested to Professor Eiselsberg that, as president of the Vienna Medical Association, he could make a general appeal to the medical profession in the United States on behalf of our colleagues here, this appeal to be made to our New York office and through their propaganda department, a proper appeal sent to each state medical association with Professor Eiselsberg's description of conditions as they existed here among the profession. Contributions could be made in the form of the Hoover food drafts, deliveries to be made to a committee headed by Professor Eiselsberg in Vienna, who could supervise the distribution of the packages to the most urgent cases.

At present the class which seems to be suffering most from under-nourishment is the aged, the death rate among this class having risen tremendously. The children, of course, are being cared for to a certain extent through our European children's fund operations; but there is no like organization in operation for the benefit of the aged.

"BLOOD TRANSFUSION APPARATUS"

To the Editor:—In regard to the blood transfusion apparatus as described by Dr. L. L. Stanley in THE JOURNAL, March 6, 1920, p. 671, this modification may be made: namely, the stopcock may be substituted for the ball valve arrangement as described.

A glass stopcock with a good sized bore may be substituted for each one of the ball valves, thus shutting off each of the two needles, at will, from the syringe. When the donor's blood is to be drawn, the stopcock leading to his needle is opened, while the one leading to the recipient's needle is closed. The syringe is filled by drawing out the plunger. The donor's stopcock is now closed and the recipient's stopcock opened, and the blood is immediately forced into the recipient's vein by pushing in the piston of the syringe. The advantages of this modification are:

1. It is a relatively simple instrument to make at home.
2. The instrument need not be held in any particular position, since gravity plays no part here.
3. It diminishes the clotting of the blood by eliminating the ball arrangement, which acts as a freely movable foreign body in the incoming and outgoing stream of blood.
4. In the ball valve plan if, because of clotting, the recipient's valve should fail to close properly, the blood filling the syringe will come from his vein as well as from his donor's, a situation which can readily be prevented by the use of the stopcock, and so assure the operator that the blood his patient is receiving is not partly his own.

BARNETT GREENHOUSE, New Haven, Conn.

1. Paragraph 824, Army Regulations, has to do with the rules which govern the furnishing of information, based on military records, which might be used in establishing a claim against the government. This paragraph further provides that information concerning sick and wounded officers and enlisted men will be freely conveyed to allay the anxiety of friends.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.

COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakoa St., Honolulu.

IDAHO: Boise, April 6, Commissioner, Hon. Robert A. Jones, Boise.

LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.

MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.

MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.

NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.

OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

INDIVIDUALISM IN MEDICAL EDUCATION

ALBERT C. EYCLESHYMER, PH.D., M.D.

Professor of Anatomy, Head of Department and Dean, University of Illinois College of Medicine

CHICAGO

Herbert Spencer well says: "There cannot fail to be a relationship between the successive systems of education and the successive social states with which they have coexisted." During the past half century our natural resources and varied industries were attracting the master minds of our country. The commercial spirit had extended into practically all lines of endeavor. It is therefore not surprising that the medical schools became strongly tinctured with commercialism. In describing the medical schools of a half century ago, Flexner says that they were essentially private ventures, money making in spirit and object. They arose in small towns almost in the heart of the wilderness. Wherever or whenever the roster of untitled practitioners rose above half a dozen, a medical school was likely at any moment to be precipitated. Income was simply divided among the lecturers, who reaped a rich harvest besides the consultations which the loyalty of their former students threw into their hands. "Chairs" were variable in value, their prices varying with what was termed their "reflex" value. It might be added that the chair of principles and practice of medicine would bring two or three thousand cash; that of natural history, not a cent. Appointments rested on financial rather than educational qualifications. The professor was a busy practitioner who worked day and night. Although often exhausted, he must be ready to take his hour at the medical college. His personal experiences furnished the storehouse from which he extracted his lecture; and these experiences were beyond controversy. The students were not well enough trained to be thrown to any degree on their own resources. The country demanded for the most part but one type of physician and that type was the all round practitioner. He was obliged to know something of medicine, surgery and obstetrics, together with the specialties, including dentistry and pharmacy, and in addition to these he was expected to show proficiency as a veterinarian. In short, the medical school consisted of a group of teachers with no time to think, and a group of students who could not think, trying to satisfy a public demand for the all round physician.

The conditions today are quite different. The students are better trained, and as a group they no longer desire to be all round practitioners. They realize that the field of medicine, like other fields of endeavor, has expanded so enormously that specialization alone leads to eminence and signal success. The public does not demand the all round practitioner as it did a half century ago. The demand has decreased almost in direct proportion to the improved means of intercommunication and transportation. At present the country practitioner restricts his work largely to the more common diseases and first aids. The more obscure cases he refers to specialists who have hospital facilities at their command. Hospitals are being built over the country, and with them comes the organization of the hospital staff which, in turn, forms the basis of the group clinic. Instead of the general practitioner making a complete diagnosis, there is now a group of collaborating clinicians, each of whom is an expert in his particular field. The rapid development of the group clinic is creating a demand that must be met by the medical schools.

The conditions of half a century ago were met by the fixed curriculum, but this principle has been projected into the medical schools of today. Our national organizations dealing with medical education have recognized and emphasized the need of individualism, but have not adopted measures that materially assist the medical schools in developing the individual. The fixed curriculum is so deeply rooted, so widely spread and so thoroughly fostered by educational institutions that standardizing agencies like state examining boards are rapidly adopting or creating such curriculums as the basis for medical licensure. The day is not far distant when the schools must either incorporate in their curriculums the particular requirements of each state examining board or find that their graduates are not qualified to practice in these states. To incorporate these requirements means not only the further specification of subjects and allotted time, but also a material expansion of the curriculum. The schools are thus approaching an impasse of their own creation.

In building a medical curriculum, we should ever be mindful of the fact that no two students are alike. In the high school the student feels his way through a large range of group electives, and often before entering college he has decided that he will major in agriculture, engineering, law, theology or medicine. In his college work, electives have enabled him to accentuate his choice or perchance to find that his predilection was wrong. In both high school and college the student may have inclined toward subjects involving manual training and thereby have acquired keenness of touch and dexterity, or toward music, cultivating the sense of hearing. He may have elected biologic sciences, accentuating observation. He may have turned toward mathematics, physics and chemistry, emphasizing precision in deduction and experimentation. He may have laid special stress on languages or history, thus acquiring an excellent memory, or perchance on philosophy, thus developing the power of abstract thought.

Those of us who come in contact with beginners in the study of medicine are impressed by their differences in energy, training and ability. One student is always on time, another is always behind time; one works quickly, another slowly; one is deft, another clumsy; one student retains best what he sees—his memory is visual; another retains best what he hears—his memory is auditory; still another remembers best what he reads—his memory depends on word associations. One mind stores up isolated impressions and facts—it is analytic; another arranges impressions and facts in groups—it is synthetic. Will the student who is slow and clumsy ever make as efficient a surgeon as the one who is quick and deft? Will the one whose memory is auditory, or depends on word association, ever succeed in surgery as well as

another who is able to visualize the positions and relations of organs in the body? Will the student who has an untrained ear ever make as efficient an internist as the one whose keenness in sound perception and discrimination enables him to differentiate between normal and abnormal sounds in the lung or heart? Is the one with an analytic mind as capable of interpreting a syndrome as another whose mind is synthetic? It is beyond question that the men who enter the medical school at the age of 22 or 23 years are quite unlike in their mental equipment; but in entering the medical school with a fixed curriculum they are beginning a four-year program that requires all students to do the same kind and the same amount of work at the same time and in the same way. It follows that the more uniform the special senses and intellectual processes, the more efficient becomes such a curriculum. To reach its maximal efficiency we must revamp and equalize the special senses and intellectual processes—but is this education?

What we should do is to determine the special assets of each student at the time he enters the medical school, and ever keep in mind his adaptability for certain kinds of work. As soon as possible we should help him to place his assets where they will yield the greatest returns. Experience teaches that most students, at the end of the second or third year of the medical course, have decided whether they wish to lay equal emphasis on medicine, surgery or obstetrics, fitting themselves for general practice, or to give special emphasis to one, fitting themselves for a special field. If, in the judgment of the faculty, the student's selection is wise, he should be permitted to follow his choice. In the fourth year the student should be allowed a further latitude which will permit him to accentuate the all round training in medicine, surgery or obstetrics, or to lay further emphasis on one of these. In the intern year, he may further accentuate his choice by rounding himself out for general practice or by adding to his special training.

While the curriculum of each school is extremely rigid, a comparative study of curriculums shows wide variations in the different schools. One covers a total of 4,500 hours, another 3,500; anatomy is given 750 hours in one school, in another, 450; physiology 300 in one school, in another, 150; pathology 500 in one, in another, 200; medicine 600 in one, in another, 300; surgery 600 in one, in another, 400. The amount of time given to the various subjects varies with the point of view and enthusiasm of the teacher, and with the equipment and material available for study. One school is favorably situated for the study of tropical diseases; another is able to utilize a great tuberculosis sanatorium; another, a great psychopathic institute. It thus comes about that the curriculums are extremely variable, not only in the total number of hours but also in the number of hours given to the various subjects. The recognition of variability in different institutions concedes the principle of variability within each institution.

In each department of the medical school an active fermentation is going on, with the splitting off of new segments. Just as physiology and pathology split off from anatomy, so biochemistry is outgrowing physiology; bacteriology is asserting its independence of pathology; pediatrics and neurology, otolaryngology and ophthalmology are attaining independence from general medicine and surgery. Again, there is going on a continual importation of subjects from the outlying fields of investigation. Immunity, roentgenology and parasitology have been brought into the curriculum from these outlying fields. The school that is the most actively engaged in the exploration and the investigation of borderland subjects finds the greatest difficulty in holding to a fixed curriculum.

Some twenty years ago, in a remarkable and prophetic article on "Liberty in Medical Education," the late Professor Mall¹ wrote:

The great complaint of the good student is coercion. Reared in a free atmosphere, accustomed to great liberty during his college years, he enters the medical school with intellectual slavery staring him in the face. The faculty trust is so powerful that if the student asserts his citizenship and remains away from a stupid course or one useless to himself he may be deprived of his degree. Long after he graduates he awakens to see that it is all a sham, and this fact adds another disgrace to our medical schools. We all know that students are very unequal in ability, as well as capacity for work, and why should they all pursue the same course of study? We cast out the weak and disgrace them, the mediocre continue along the trodden path, but the strong are retarded. We do wrong when we disgrace the weak, and it is our duty to develop the strong. It is poor logic and begging the question to assert that the German student develops better under the banner of liberty than the American would. It is not difficult to obtain overwhelming authority in favor of liberty in higher education; it is only degrading to our profession in America to assert that our students are not worthy of it. As long as this continues, medical education in America, in spite of the advance it has made during the last twenty-five years, will remain at its present low level in the eyes of the educators of the world.

The curriculum in the accompanying tabulation, as given and advocated by Professor Mall, might well serve as a basis on which the medical schools of today could build elastic curriculums.

MEDICAL CURRICULUM *		
PRECLINICAL SUBJECTS		
	Obligatory	Elective
Anatomy	6 units	15
Physiology	2 units	4
Physiologic chemistry and pharmacology.....	3 units	6
Pathology and bacteriology	4 units	10
Hygiene and bacteriology		10
Elective	9 or more	
	24 = two years' work	
CLINICAL SUBJECTS		
Medicine	6 units	15
Surgery	5 units	15
Obstetrics	3 units	5
Gynecology		5
Dermatology		4
Pediatrics		4
Nervous diseases		5
Genito-urinary diseases		4
Laryngology		4
Ophthalmology		5
Medical jurisprudence		2
Psychiatry		4
Elective	10 or more	
	24 = two years' work	

* The curriculum extends over a period of four years and comprises about 3,000 hours. The unit is the equivalent of from 60 to 65 clock hours.

Professor Mall said:

In the above table I have arranged the units in two columns, reducing the obligatory courses to their minimum without excluding any of the seven branches. Further cutting-down might be an improvement, but I will not raise that question at present. As it stands in the table, 60 per cent. of the entire four years is obligatory, and the remaining 40 per cent. of the work is to be selected from a large group of elective courses. As they stand in the second column it would require an average student eight or ten years to take them all, and the two columns together represent work which our best schools can easily give at the present time. Much of our whole trouble in teaching is that we are trying to put ten years' work into four. . . . Each student might try a different combination while working out his own salvation and developing his individuality. The weak student would either drop out or go slower, the average would follow the trodden path, the good one would develop himself.

I have quoted Professor Mall in particular because he has demonstrated through his students the soundness of his views on academic freedom. There is only one way to develop strong men, and that is by helping them to become independent thinkers. Electives are the stepping stones to independent thought, and independent thought is the threshold of knowledge. We cannot keep the medical students marching in the trodden paths of their predecessors until weary and heart-sick they complete the march, only to find that they have also acquired mental debility on the way. We must tear down the restraining walls, and encourage them to forsake the trodden paths and to explore the unknown fields. We must help them to realize that the laws governing health constitute a limitless expanse for exploration, and that on our knowledge of these laws rests the physical efficiency of mankind.

1. Mall, F. P.: Philadelphia M. J. 3, 1899.

Book Notices

MANUAL OF TROPICAL MEDICINE. By Aldo Castellani, C.M.G., M.D., M.R.C.P., Lecturer at the London School of Tropical Medicine, and Albert J. Chalmers, M.D., F.R.C.S., D.P.H. Third edition. Cloth. Price, \$12. Pp. 2436, with illustrations. New York: William Wood and Company, 1920.

The first edition of this book, published in 1910, contained 1,242 pages. This edition contains 2,436. This may well be regarded as an index of the growth of our knowledge of tropical diseases in the last decade. In contents, the book is exhaustive; in fact, well nigh encyclopedic. Its three main divisions are the introduction, Part II on causation of tropical diseases and Part III on specific diseases of the tropics. The introduction includes chapters on the history of tropical medicine, tropical races, tropical climatology, tropical foods, tropical diseases and fitness for tropical life. The section on causation discusses, under physical causes, temperature and humidity, pressure and radiation, and traumatism. Under chemical causes are considered animal and vegetable poisons, including those used in hunting, fishing and warfare, as well as poisonous foods. This section also contains three exhaustive and interesting chapters on venomous animals, including spiders, scorpions, venomous fish, and the numerous snakes of the tropics. The section devoted to tropical parasites and their rôle in the production and transmission of disease is necessarily large, consisting of nearly 800 pages.

Parasites and carriers are discussed in zoological order, as protozoa, worms, leeches, ticks, and mites, insects, animal carriers and vegetable parasites. The third part, comprising over half of the book, treats of specific diseases of the tropics, dividing them into fevers, general diseases and systemic diseases. Under fevers are discussed those carried by mosquitoes, namely, the malarias, the tropical hemoglobinurias, yellow fever, dengue and allied fevers. Diseases carried by the tsetse fly and similar insects are the trypanosomiasis and the kala-azars. Those carried by lice and ticks are the relapsing fever, typhus fever, spotted fever and tsutsugamushi fever. It is difficult to understand why Rocky Mountain fever is discussed in this connection, since the authors state that it is found only in the mountainous regions of the United States. The other fevers are unclassified or are listed as probably due to bacterial infection. One of the most interesting chapters is that on the differential diagnosis of a tropical fever in which the diagnostic symptoms are tabulated for easy reference. General diseases are divided into those with an animal causation, including frambesia, verruca, the filariases, etc.; those with a vegetable causation, as leprosy and histoplasmosis; diseases due to chemical causes, including beriberi and epidemic dropsy; and general diseases the cause of which is unknown, under which the authors classify pellagra. The last section takes up in detail the various systemic diseases peculiar to the tropics.

It is interesting to note that in spite of the attitude regarding alcohol adopted by the English, the authors take every occasion to emphasize the danger of the use of alcohol and the inadvisability of any one addicted to its use, even in moderate quantities, undertaking work in tropical countries. Even the therapeutic value of alcohol is minimized, and in the chapter on venomous reptiles a severe blow is dealt at the time honored superstition of the value of alcohol in the treatment of snake bites. "Brandy and whisky have been repeatedly vaunted but they are useless." Apparently the authors have not had access to contemporary American literature. In the references to articles on food and nutrition, the latest reference to an American article is 1911, and none is made to the work of McCollum, Osborn and Mendel in the last five years. The book is copiously illustrated, and one of its most valuable features is the list of references following each chapter. Under the section on the state and tropical diseases is a list of eighty-seven special journals on this subject and an extended list of special works on tropical medicine, its history and development. In addition to its completeness, the fact that the third edition has been revised since the war and that the authors have had twenty years' experience in the tropics will justify its acceptance as one of the leading English authorities on tropical diseases.

Social Medicine and Medical Economics**THE VIRGIN ISLANDS OF THE UNITED STATES**

B. V. MCCLANAHAN, M.D.
GALESBURG, ILL.

Exactly one week prior to our declaration of war on Germany, the United States took over certain islands of unquestioned value in the neighborhood of Porto Rico. From a naval standpoint these islands possess marked strategic features, the most important of which probably is the landlocked harbor of Charlotte Amalie, St. Thomas. From a public health and medical point of view these most recently acquired possessions also present some very interesting phases.

The Virgin Islands of the United States (formerly the Danish West Indies) consist of a group of some fifty small islands, near the juncture between the Atlantic Ocean and the Caribbean Sea, lying from 30 to 80 miles east and south of Porto Rico. They were acquired from Denmark, March 31, 1917. From a period of a few years prior to this date the former government had been allowing the islands to decline gradually, the United States having tried twice before to gain control. Since their acquisition they have been under the control of the Navy Department, and it appears proper that they should so continue, as their small size necessitates their dependence on naval life and the sea for their welfare.

Commander (now Captain) C. S. Butler, Medical Corps, U. S. Navy, and I were the first American medical officers to reach the islands following their transfer. Arriving at Charlotte Amalie, the principal harbor of the island of St. Thomas, April 21, 1917, Dr. Butler remained for duty on St. Thomas, and I was detailed for both military and civilian duty to Christiansted, St. Croix.

The gradual decline under the former government was decidedly accelerated by a destructive hurricane in October, 1916, in which Christiansted suffered severely. Its hospital buildings, which were situated on a hill, were almost completely demolished and rendered wholly uninhabitable. Instruments, beds, linen and much of the original equipment were strewn over a wide area and rain-soaked beyond hope of further use.

The building occupied by the hospital on my arrival was an old chapel, of which the rostrum and mahogany railings still remained. A table near the pulpit served as office for both physician and nurse, and the medicine locker consisted of an old clothes press formerly used by the minister. In the center of the chapel a partition, reaching half way to the ceiling, had been erected, thus dividing off a space into a men's ward and a women's ward. This building, together with another about half a block away, were all that were ceded to us when I received control of the medical situation at Christiansted.

MEDICAL STATISTICS

The islands—and I speak principally of St. Croix, the largest and with the possible exception of harbors the most important one of the group—as we found them were in dire need of active medical, surgical and sanitary aid. Their welfare centered naturally around their health, and this was greatly impaired. Approximately 95 per cent. of the population were black. Statistics collected by former Danish physicians indicated that the majority of the negro population had venereal disease; about 50 per cent. had syphilis in either congenital or acquired form. Filariæ were present in the blood of from 15 to 25 per cent. of individuals examined, and over 5 per cent. of the adults had elephantiasis in some form. Leprosy, considering the population of the islands, was preva-

lent, there being from sixty to ninety inmates in the asylum during the first two years of our occupancy, while the total population of the islands was less than 28,000.

Typhoid fever was never troublesome, appearing only sporadically over the islands. The last severe epidemic occurred over two generations ago; but to prevent any further trouble from this source the entire population of the islands was given antityphoid vaccine during the latter part of 1918. Malaria was rare, although the anopheles mosquito was found often in collections gathered. Yellow fever and bubonic plague had been unknown for the last hundred years, while pellagra was present in a goodly percentage of the hospital cases treated.

Probably one of the greatest scourges of this small country was the high infant mortality. Fifty-one per cent. of the children died before reaching the age of 3 years and about one half of these before they were 1 year old. This high infant mortality rate may be explained by two factors: illegitimacy and the tropics. According to the United States census taken in 1918, nearly 65 per cent. of the parents living together were not legally married, and in relationships of this kind, combined with the inherent lassitude of the tropics, it naturally rested with the mother to support the children. The second contributing factor may be said to be the tropics themselves; milk, of course, soured readily, and like all food-stuffs was hard to obtain in anything like a clean state. This, combined with a lack of feeding knowledge and neglect, caused infant gastro-intestinal infections to reach a high mark.

It is safe to say that at the time of American occupation 35 per cent. of the population of the islands needed medical or surgical care of some sort. Syphilitic conditions were present, some of which disappeared like magic under the proper treatment. Venereal sores, bathed continually in pus and filth and often aggravated by edematous foreskins, were prevalent. We encountered many hydroceles containing a quart or more of fluid, hernias of enormous size and, last but by no means least, elephantiasic extremities and scrotums of such size and weight that they not only impaired the general health but served as an extremely cumbersome barrier to locomotion.

PHYSICIANS' FEES

The question of fees charged prior to American occupancy is one of especial interest. The physicians to the islands were sent by the Danish government and received ample salaries from their home government. On the other hand, the ordinary negro inhabitant of the islands had limited financial means so that charges of from one to ten dollars for major operations, while appearing exceedingly small, were really reasonable and just. The price for a herniotomy was five dollars, and the highest price charged for any operation was twenty-five dollars. These prices, of course, were for the negro population which could not well afford to pay more. Well-to-do planters, sugar factory operators and plantation owners were charged more than the stipulated rates at the discretion of the physician. Contract work was practiced generally with the larger estates and sugar factories, these contracts calling for one or two visits of the physician at the factory and laborers' villages weekly, with visits more often during the sugar crop time.

HOSPITALS

As I have mentioned, the hurricane of 1916 wrought havoc especially to the hospital at Christiansted. The other hospitals of the islands situated at Charlotte Amalie, St. Thomas and at Frederiksted, St. Croix, suffered less and were able to continue in the same buildings. The buildings occupied temporarily by the Christiansted hospital would hardly accommodate sixty-five patients, were in no sense suited for

the care of the sick, and had been barely made fit by the installation of crude plumbing, tin flooring in the operating room, kerosene lamps, and other absolute necessities. The hospital boasted two private rooms, which were private, however, only in the sense that they contained one bed each. In no other respect were they private, for they had windows that opened on a hallway, partitions that reached only half way to the ceiling, and both directly adjoined the children's ward.

Rigid iron beds which could not be taken apart and with a series of crossed iron bands for springs were what comprised the resting place for the patients in the hospital. Mattresses were made of horsehair or seaweed, pressed hard and thick. Bed linens, towels and other napery were of a heavy linen of good grade, all sent from Denmark; and with the exception of being heavy, cumbersome and unpliable, they were very fine.

FACILITIES FOR SURGERY

The operating room consisted of an east room on the second story, with a tin floor, an antique operating table, and locally constructed sinks, stands and instrument cabinets. It was lighted for night work with two large round-burner kerosene lamps. One naturally feels a trifle uncomfortable at the thought of operating under an open flame; but by using extreme caution we were able to care for the small amount of night emergency surgery that was necessary.

The instruments in the operating room were mostly of Danish origin, some of them peculiar and clumsy; but they served their purpose very well. These instruments, in addition to the ones furnished with the Navy supplies for Marines, gave us all we really needed for most of the surgery encountered. Suture material was scarce, the supply of catgut being particularly low; and as this article was hard to obtain, we were continually handicapped by the lack of it.

Surgical dressings, sponges, cotton, binders, pads, and the like were all sent out from Denmark where, it was said, they were made under the direction and supervision of the queen herself. However true or untrue this rumor may have been, it was a fact that, prior to our occupancy, yearly and oftener, if necessary, the queen would send out large quantities of surgical supplies all wrapped, sealed, labeled and sterilized ready for immediate use. A fair amount of this surgical material was on hand when we arrived.

The needles in the operating room were not of the type we had been used to; and because all metal rusts so easily in the tropics, these needles were of little value. The Christiansted hospital was indeed grateful for the gift of assorted operating needles sent to them by a Chicago hospital on realizing actual conditions.

The majority of the surgery had to be done without the use of rubber gloves, not as a matter of choice, but because the hospital had only six pairs of its own. We literally wore gloves to keep our hands clean instead of for the protection of the patient from infection, and considering our handicaps, we had comparatively few infections.

We were unable to do all the surgery that was continually at hand. We did all the surgery we could, considering the size of the hospital and the limited amount of supplies available. At best, it was a slow process, as all sterile water, instruments, etc., had to be prepared over small charcoal pots in the corridor adjoining the operating room.

PROSPECTS IN THE FUTURE

I left the islands in March, 1919, and many improvements were well under way and progressing even before this time. The American Red Cross made some liberal and beneficial donations to the hospitals of the Virgin Islands during 1918. The Christiansted hospital also received at this time a complete roentgen-ray outfit and a motor ambulance. Repairs

were effected, among them the installation of electric lights, which greatly increased the efficiency of the institution. Dispensaries for outpatients had been established at all hospitals in the islands, and a great deal of good was being done in the treatment of ambulatory cases. An earnest attempt had been made, combined with the efforts of the department of health, to ascertain and treat all venereal cases, trying if possible to get at the source of infection in every case.

The future health of these islands, and in this way the real future of the islands, depends largely on the work and the cooperation of the medical men stationed there. With the wealth of material to work on, especially surgical, duty was a pleasure to me, and I am sure that all the medical officers felt grateful for the opportunity to serve in so new, rich and fertile a field.

249 East Main Street.

Medicolegal

Time of Liability of Physicians and Surgeons

(*Bowers v. Santee* (Ohio), 124 N. E. R. 238)

The Supreme Court of Ohio, reversing a judgment affirmed by the court of appeals that sustained the defendant's demurrer to the plaintiff's petition, says that the petition stated that, Dec. 29, 1913, the plaintiff sustained a fracture of both bones of her left leg above the ankle joint and employed the defendant to treat the case, that he was unsuccessful in his first attempt to reduce the fracture, and in about a week attempted again to set or reset the fractured limb, and again negligently failed to place the fractured ends of the bones together, etc. This action for damages was begun in April, 1915. The defendant's demurrer was on the ground that the plaintiff's right of action was barred by the state statute of limitations, and the question was, When did the latter begin to run as against the plaintiff? Did more than one year intervene between the date on which her cause of action "accrued" and the date on which such action was commenced? The supreme court holds that, in an action for a breach of contract in such a case, the statute of limitations does not begin to run until the contract relation is terminated, and that, under the allegations of the plaintiff's petition that the contract of employment between the surgeon and his patient continued from Dec. 29, 1913, to May, 1914, the plaintiff's right of action did not accrue until May, 1914, and was not barred by the statute of limitations when the action was brought.

The first two paragraphs of the syllabus in the case of *Gillette v. Tucker*, 67 Ohio St. 106, 65 N. E. 865, are as follows:

1. A surgeon and physician, employed to treat a case professionally, is under an obligation, which the law implies from the employment, to exercise the average degree of skill, care, and diligence exercised by members of the same profession, practicing in the same or a similar locality, in the light of the present state of medical and surgical science; and that he will indemnify the patient against any injurious consequences which may result from his want of ordinary skill, care, and attention in the exercise of his employment.

2. It is the duty of the physician and surgeon to exercise due and ordinary skill, care, and attention, not only in and about an operation which he decides to be necessary, but also, in the absence of a mutual understanding, or notice to the contrary, to render such continued further care and treatment as the necessity of the case requires; and he is liable for injuries and damages which proximately result from the want of ordinary skill, care, and attention.

The doctrine announced in these two paragraphs is very plain and practical, so that both surgeon and patient will have their respective interests abundantly safeguarded. The doctrine is promotive of the exercise of reasonable skill, care, and treatment by the surgeon, not only at the specific time of the operation, but also during the subsequent period of treatment necessary to a reasonable and substantial recovery. The patient relies almost wholly on the judgment of the surgeon, and under the usual circumstances of each case is bound so to do; and if the injury is not reduced,

and a normal condition restored, as fully or as speedily as expected, the patient is still at liberty to rely on the professional skill, care and treatment to complete such recovery so long as the surgeon continues his employment with reference to the injury. The decision in *Gillette v. Tucker* was by a divided court that stood 3 to 3, with a rather vigorous dissenting opinion which was followed a few years later in *McArthur v. Bowers*, 72 Ohio St. 656, 76 N. E. 1128; but this court now disapproves the *McArthur* case, and approves and reaffirms the doctrine announced in the *Gillette* case. Physicians and surgeons exercising reasonable care and skill need have no fear of it. Reckless and careless physicians and surgeons should be kept in fear of it.

The law should not impose on the patient a duty that he can know only through expert knowledge which he does not possess, but as to which he is compelled to accept the judgment of his physician or surgeon. Moreover, it is clearly just to the surgeon that he be not harassed by any premature litigation instituted in order to save the right of the patient in the event that there be substantial malpractice. The surgeon should have all reasonable time and opportunity to correct the evils which made the operation or treatment necessary, and even reasonable time and opportunity to correct the ordinary and usual mistakes incident to even skilled surgery. The doctrine announced here is conducive to that mutual confidence that is highly essential in the relation between surgeon and patient.

Examination Required to Determine Injury to Eye

(*Holton v. Janes* (N. M.), 183 Pac. R. 395)

The Supreme Court of New Mexico holds that, in a personal injury case in which the plaintiff had voluntarily exhibited an injury to his head to the jury for inspection, and the defendant moved that the court compel the plaintiff to submit to a physical examination of his head by physicians named by the defendant, it was error to deny the defendant's request. The supreme court says that an examination of the cases will show that the courts have uniformly held that, when a plaintiff in a personal injury suit voluntarily exhibits the injured part of his body to the jury for inspection, the portion of his body so exhibited becomes an exhibit in the case, like any other object or thing introduced in evidence, and the opposite party has the right to make such inspection of it as will enable him to explain, criticize or impeach its value as evidence, and to that end have it examined by experts. As to the wounds in his head, the plaintiff in this case alleged that they greatly injured and weakened his eyesight, making it difficult for him to discern objects at any considerable distance. It is a matter of common knowledge, of which courts will take notice, that the question of the impairment of vision is capable of exact demonstration by expert examination, and in this case, when the plaintiff put his head in evidence and permitted the jury to examine it, unless the eye which he complained of as being injured was put out, the jury could in no manner determine the extent of the injury to it, if any, but with the aid of experts the matter was capable of exact determination. For these reasons this cause, wherein the plaintiff recovered a judgment, is reversed and remanded with instructions to award the defendant a new trial.

Privilege Not Affected by Services Being Gratuitous

(*In re Hallenberg's Guardianship* (Minn.), 174 N. W. R. 443)

The Supreme Court of Minnesota holds, in a proceeding to determine the competency of a man 82 years old to care for and manage his property, that the rule as to privileged communications applied and that there was no error in excluding the testimony of a physician as to consultations with the man in regard to certain ailments, when the only ground on which it was sought to sustain the admissibility of such testimony, in the face of the express provisions of the statute to the contrary, was that the physician was the patient's son-in-law and did not expect pay for his services. The application of the rule does not depend on the services being gratuitous or paid for.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.
Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
Alpha Omega Alpha Honorary Fraternity, New Orleans, April 26.
American Association of Anesthetists, New Orleans, April 26-27.
American Association of Physicians, Atlantic City, May 4-5.
American Association for Thoracic Surgery, New Orleans, May 1.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Arizona Medical Association, Nogales, April 16-17.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
California State Medical Society, Santa Barbara, May 11-13.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Maryland, Med. and Chir. Faculty of, Baltimore, April 27-29.
Medical Veterans of the World War, New Orleans, April 26.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson, May 11-12.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
Nebraska State Medical Association, Omaha, May 24-26.
New Hampshire Medical Society, Concord, May 12-13.
North Carolina State Medical Society, Charlotte, April 20.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

ANNUAL CONFERENCE ON PUBLIC HEALTH AND LEGISLATION

Held under the auspices of the Council on Health and Public Instruction of the American Medical Association, March 4, 1920

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich., in the Chair.

Chairman's Address

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: There has never been a time when so many people were interested in public health as at present. National health associations specially interested may be divided into official and voluntary. The federal Public Health Service arrested bubonic plague and held it in abeyance at a total cost of between 200 and 300 lives on the Pacific Coast, when it might have spread all over this country. Splendid work has been done on pellagra. Its etiology has not been settled, but the work of Goldberger and his associates on the influence of diet on pellagra is a wonderful demonstration. The laboratory work of the Public Health Service, the testing of animal products, the research work on typhus fever, and anaphylaxis are among the most valuable activities of the United States Public Health Service. But the federal government cannot go into a state and do health work, unless requested by the state to do so. The exercise of medical functions, whether the regulation of medical practice or preventive medicine, is under state control, and I think it is rather fortunate that this is the case, because, divided as we are into forty-eight political groups, we do not have to make the same experiments at the same time. Other organizations of officials I might mention are the Conference of State Health Officers and the American Public Health Association. No better work is being done anywhere than by the International Health Board. We all know the splendid work the Red Cross did during the war and the admirable support received from the people. The Red Cross found itself at the end of

the war with a great organization. With thousands of nurses, hundreds of medical officers, with millions of dollars, and plenty of work to do in Europe, the Red Cross is continuing to do that work in a most splendid way. The National Tuberculosis Association, founded in 1904, has continued to expand, and receives its revenue from the Christmas sale of stamps, which last December amounted to \$4,200,000. The Association for Social Hygiene is a national organization interested in venereal or so-called social diseases, and just now there is a great deal of enthusiasm being displayed in reference to this work. The child welfare movement is more or less mixed up with the health crusade under the management of the National Tuberculosis Association; but as long as the children are getting the benefit, it does not make any difference where the aid is coming from.

Report of the Secretary

DR. FREDERICK R. GREEN, Chicago: This is the first Conference on Public Health and Legislation called by the Council on Health and Public Instruction since Feb. 6, 1917. The absorption of the public and the profession in the war rendered it inexpedient to hold a conference in 1918 or 1919. Owing to the activities and lessons of the war, the attitude of the public toward health matters is today entirely different from that of five years ago. The public health movement is rapidly passing out of the propaganda stage and is entering the constructive period. What the public wants to know today is how diseases can best be prevented and efficiency maintained at the highest point. The duty of physicians, both as individuals and as organizations, is to furnish plans for the development of governmental health agencies for each of our political units from which can be constructed the best type of organization for health conservation.

One of the greatest possibilities for usefulness in the annual midwinter conference is the opportunity which it offers for concentrating at one time and place many of our meetings and independent bodies which are now scattered throughout the year. One of the most important functions of the Council has been to act as a hub around which other movements and organizations could center. If this annual conference can be made the rallying point for as many other conferences, meetings and organizations in the health field as possible, we shall be able to secure greater effectiveness at a diminished cost, which is the essential problem of all administration.

Standardization of Public Health Activities

DR. GEORGE E. VINCENT, New York: This paper will appear in full in an early issue of THE JOURNAL.

The Standardization of State Public Health Organizations

DR. CHARLES C. CHAPIN, Providence, R. I.: When we talk about standardizing public health work we mean about what the manufacturer means by standardizing his workshop. We mean that health officers should be encouraged to adopt the very best and latest methods, and that the retention of obsolete and useless methods should be discouraged. Accepting this definition of standardization, we ask: What are the means best calculated to promote the desired improvement in the public health work of the states? Every health officer would like to improve his service. There are two main reasons why he does not do more: he does not know what to do and he has not the funds wherewith to do it. There are a lot of people who will disagree with me because I am inclined to place the greater importance on the former. The first step is to show him what others are doing and what he can and should do. One important means of standardizing state health work is to show what is being done in every state, and analyze and arrange the data so that the facts may be easily found. This is no small task, and is impossible without the assistance of the state health officers themselves. A questionnaire is a terrible thing, yet it seems to be necessary. To find what a health department is really doing, numberless questions must be asked; and to answer them correctly often requires a great deal of time and trouble on the part of a great many persons. Another important point in the organization of health work is the consideration of

relative values. It is not enough to demonstrate that the state supervision of water supplies reduces typhoid fever, that the giving of antirabic treatment prevents rabies, that the inspection of milk raises the bacterial standard, and that the operation of a sanatorium restores sick people to health. We should know, if possible, how much sickness is saved and how many deaths are prevented. Accurate accounts should be kept by every health officer of each definite line of work which he is following. One of the rarest things to find in a health office is accurate cost accounting. Uniformity in all parts of the reports of state health departments would make for economy and efficiency. Every report should contain certain standard and uniform tables of mortality and morbidity statistics. The work of every division of the department should be set forth clearly and simply, and numerical statements should be inserted whenever practicable. Much can be done to standardize and improve the work of state health organizations by a survey of their activities with a comparison of costs and results. The results of the survey should be widely distributed, and the report should include a numerical rating of the states. The collection of the data would be greatly facilitated by uniform accounting and reporting. State health officers could provide for this through a committee to consider the relative importance of health activities and the standards on which a rating should be based. A survey, however, cannot well be made by state officials. It had much better be made by some agency entirely independent of them. A survey should be made periodically, perhaps every five years. Sanitary science is growing rapidly, and sanitary practice should keep pace with it. Such surveys are expensive, but before the war the states were spending annually more than \$3,250,000 for public health. The amount is far greater now. A small fraction of 1 per cent. of this would be a small sum to pay for taking account of stock.

Standardization of Municipal Health Organization

DR. ALLAN J. McLAUGHLIN, Washington, D. C.: Standardization is both feasible and desirable to standardize "objectives" in municipal health work; but standardization in detail of methods of procedure is extremely difficult, and in many instances may be undesirable. Fundamentals in public health work are the same for all cities, and these may be standardized. These are the factors in the public health problem which are common to all cities. Standardization by an authoritative agency will be of inestimable value to the health officer in having charged to other departments the cost of the indirect health activities which are often paid for out of health appropriations. In initiating new work, standardization will be of great assistance, but its greatest aid will often be the demonstrations made by voluntary unofficial agencies. Thus, in standardizing health departments, which really means reorganization of health departments, the voluntary and unofficial agencies engaged in health work must be considered and their activities utilized to cover gaps in the official campaign. What are the aims of an ideal health department and the objectives which it seeks to attain, and what are the fundamentals of organization? The aims of health departments are the eradication of preventable disease, the elimination of corrigible physical and mental defects, and the maintenance of all individuals in the best possible physical and mental condition. In carrying out these aims we have as objectives the prevention of infant mortality, the prevention and correction of physical and mental defects in the child, and the prevention of preventable diseases. To accomplish these aims and to obtain these objectives we must consider these fundamentals in our health machine: administration, vital statistics, child hygiene, industrial hygiene, communicable diseases, public health education, sanitary engineering, food inspection, hospitals and sick relief. Standardization of the fundamentals of organization can be effected on a nation-wide basis, and a committee on standardization could formulate the general classes of work which should be undertaken in every municipal health department. An example of the value of such standardization is the possibility of securing epidemiologic data in usable form, by a proper employment of the vital statistics division, and the regular

field force of the department. The committee on standardization can make very useful recommendations for the transfer of much of the work of abating nuisances, and the collection and disposal of garbage and refuse to other departments; but here again local conditions will determine how best to adjust the work in each city. The greatest single defect in municipal health organization today is the lack of machinery for coordinating and utilizing voluntary and unofficial agencies in an official plan to insure teamwork.

DISCUSSION

DR. C. ST. CLAIR DRAKE, Springfield, Ill.: My own conception of standardization is the development throughout the nation of health department machinery to the highest point of efficiency consistent with the law; along uniform lines which will permit the best coordinative functioning with all governmental and extragovernmental health agencies; with an internal arrangement of bureaus or divisions which will make possible the highest degree of cooperation with the minimum of duplication of effort. I naturally view this question from the standpoint of the state health officer. Any acceptable form of standardization must take into consideration these fundamental points: (1) a definition of what constitutes public health work; (2) definite knowledge of what all other states are doing and of the type of machinery employed by them; (3) the adoption of a definite policy of relationship to other states' health departments, to the federal government, to local health authorities, to extragovernmental health agencies and to the public at large; (4) the determination of the functions which shall be carried out by the state health department and of those which are to be imposed on other state departments; (5) the determination of the type of organization most desirable for state health departments, and the essential divisions and bureaus and their relationship to each other; (6) the determination of a reasonable and acceptable policy in dealing with extragovernmental health agencies, and (7) the determination of the extent to which federal aid in state public health work is properly to be encouraged. Any form of standardization requires a thorough knowledge of what other state health departments are doing and how they are doing it, so that there may be uniformity of procedure. Without this knowledge, it is practically impossible to compare the different departments, to interpret their reports and financial statements, or to determine the comparative efficiency of any individual department.

There should also be developed a well defined departmental policy based on a reasonable interpretation of the law; a policy in which the law is not employed as the means of evading obligations or of passing on responsibility, and a policy which does not assume more power than the statutes actually give or more than the courts would reasonably sustain.

There is also a serious need for some definite policy as to what functions the state department of health should perform, and what functions should be relegated to other state departments.

DR. ENNION WILLIAMS, Richmond, Va.: The value of any particular public health method should be ultimately measured by the morbidity or mortality statistics, and no one would undertake to interpret the results of statistics until several years shall have elapsed. For instance, for the last three years, we have been carrying on a rather active campaign in the public schools by circularizing teachers and education work to inculcate those personal habits that would prevent the transference of mouth secretions. The statistics for two years following the introduction of this measure would indicate more than 50 per cent. reduction in deaths and in cases of scarlet fever and diphtheria. Yet I would not be willing to say from the experience of two years that this measure was or was not responsible for the reduction, and consequently its value cannot yet be demonstrated. We, therefore, cannot even compare its value with the customary methods of quarantine and disinfection, which are more costly and require greater health organizations. Thus, no numerical valuation can yet be placed on such measures; also, there is likely to be a great difference of opinion as to the value of measures until they are demonstrated by statistics.

DR. W. S. RANKIN, Raleigh, N. C.: I believe in numerical scoring, not only in interstate work but also in the work of states. We do it in dairies, and in the medical inspection of schools. I am working out a system of numerical scoring for county health departments, taking the various units, or county health problems, and all the items of work embraced in those units and giving each item and each unit a financial equipment.

DR. SAMUEL J. CRUMBINE, Topeka, Kan.: I think it is appropriate for this conference, composed of health officers and members of the medical profession, to make a request of the Rockefeller Foundation to make a survey of extragovernmental agencies. If this were done I believe it would receive serious consideration. I know of no agency better fitted to undertake that work. It would be an authoritative utterance on that question.

DR. ALLEN W. FREEMAN, Columbus, Ohio: It is essential to get all the people who are interested in this health movement to recognize the necessity of laying a sound foundation. We should strive to develop a sound sentiment for health among the people, and then build a sound structure, with competent people to run it, a decent scale of salaries, and work by an administrative system covering the whole state.

DR. HAVEN EMERSON, New York: There are three absolutely indispensable functions which should be standardized: costs, results, and the control of communicable diseases. It is the function of the Public Health Service of the United States to call the attention of state health officers and local health officers to the possibility of standardizing cost accounting for public health functions. We ought to be able to show how much it costs to carry on a certain definite function. It ought to be possible to get comparative data on specific functions in communities that have organized health departments.

DR. H. N. OLIN, Lansing, Mich.: We shall find it difficult to standardize methods of accounting. I am in favor of the standardization of public health activities. Let us know what our neighbors are doing. As commissioner of health of Michigan, I should like to know the details of the health work in Massachusetts, Ohio and some of the other states, so as to give the people of Michigan better health service.

DR. FRANK BILLINGS, Chicago: I want to speak on two points. First, the need of publicity to educate the people, which is one of the reasons the American Medical Association organized its Council on Health and Public Instruction. There are approximately 80,000 members of the American Medical Association, representing the best elements of the medical profession of the country. They are interested in health and in the prevention of disease. The central office has a card index, not only of every member of the association, but of every physician in the country. Probably there is no other body of men in the country with the facilities of communication not only with organized county and state societies but also with individuals who are interested in health matters. Second, in taking up the matter, the American Medical Association had no thought of dominating the field of health, but at the time the Council on Health and Public Instruction was organized there was very little cooperative work with all the health agencies of the country, and its policy was to try to get together all of these health agencies for the purpose of concentration of effort and teamwork. I believe it has done a vast amount of good in that respect.

DR. RACHELLE S. YARROS, Chicago: The state and local boards of health have tried to enforce measures that the people do not understand. If we expect support from the people we must educate them as to what we really want. State and local boards of health should also educate physicians because many of them do not understand what we are aiming at. If we educate the people, we shall get their support.

DR. S. W. WELCH, Montgomery, Ala.: All public health work must be done by governmental agencies. We must have something around which voluntary agencies can be coordinated; and until we have a county health organization, which takes in the county as a unit, and around which can

be collected and directed the activities of the general public, we are not going to get anywhere in that community. County organizations should function with the state organization.

DR. HENRY VAUGHAN, Detroit: We ought to have some centralized place where the vast amount of information collected from the different health departments throughout the country can be made available to local and state health departments. I should like to know something of the details of venereal disease control and the measures that are carried out in different parts of the country. To do that a questionnaire can be sent to every local or state health officer in the Union.

DR. GEORGE E. VINCENT, New York: If the Rockefeller Foundation were asked to cooperate in such an undertaking as that mentioned by Dr. Vaughan of collecting information, I am sure its board of trustees would be willing to cooperate with some representative agency that stood before the public authoritatively for whatever it did; and if a constructive cooperative program, based on the requirement of information and cooperation with individual state departments in building up their work, were carried out, it would be very carefully and sympathetically considered by the board of trustees of the Rockefeller Foundation.

DR. CHARLES V. CHAPIN, Providence, R. I.: It would be a good plan for somebody to make such a survey as we have been discussing. Many state health officers desire to have such a survey made. As to uniform reports of accounts, I believe that of very great importance; but I am afraid many health officers do not realize the tremendous importance of it.

(To be continued)

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Joint Annual Conference of the Council on Medical Education of the American Medical Association with the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, held in Chicago, March 1-3, 1920

(Continued from page 913)

Report of Committee on Public Health and Preventive Medicine

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: The trend and spirit of medical schools is toward curative medicine. The graduates of our best medical schools today are not fitted to do public health work. The committee recommends that an improvement be made in this direction. During the last two or three years the National Board of Medical Examiners, examining graduates from Class A schools only, and the very best graduates of those schools, has scarcely found men who could get a passing mark in preventive medicine, although there have been excellent marks in surgery, medicine and the specialties. It is a matter for consideration whether the medical profession should fit men for preventive medicine or turn the job over to somebody else. The sanitary engineer as an all around man is better fitted as an epidemiologist than the average physician. A number of medical schools are now offering courses in public health. They have had a very precarious existence. The best public health courses are given at Harvard and at the Johns Hopkins schools, and in neither of these places is the attendance large enough to justify the existence of the school. The regulations of most of the states and many municipalities have been changed so that a medical degree is not required for health officers. Some of the best municipal health commissioners today are not physicians. In our opinion the tendency in all medical schools is to teach curative medicine, not prevention. The committee recommends that we insist that medical men who are fitting themselves for health officers should take an additional course of not less than two years. Even to make proper medical men we need more hygiene and preventive medicine in the medical course than we have. We recommend that five hours a week for one year be devoted to preventive medicine—double the amount of time we are now giving to this branch—and we do not expect to make expert

epidemiologists in this way, but possibly we can give what the ordinary practitioner needs.

DISCUSSION

DR. ALEXANDER C. ABBOTT, Philadelphia: The University of Pennsylvania in 1906 offered the first course leading to the degree of Doctor of Public Hygiene. For four years we did not have a single applicant, but in 1910 we had one applicant. Since that time we have graduated thirty-three with the degree of Doctor of Public Hygiene, and we have given a number of certificates to persons taking special departments of the work who were not qualified for the degree. I still regard the work as being to some extent experimental. The qualifications for the degree have been that a candidate shall become a Doctor of Medicine, and that the Doctor of Medicine degree should stand for the same preliminary requirements for the degree that we now require for persons entering the University of Pennsylvania Medical School. As a result, we have had satisfactory material to work on. I should say the supply and demand will control this, and the future is safe, because I take it for granted that others, who are making an honest effort to push this thing, and not rush it, are in the same position that I am. I have on my desk, more or less all the time, applications for persons to fill desirable positions. The future possibility of supplying the demands is daily growing larger.

DR. EUGENE F. McCAMPBELL, Columbus, Ohio: At the Ohio State University we started several years ago to give a course in preventive medicine. For four years, we had a cooperative course with the state department of health. The work in preventive medicine covers the situation well. In the Ohio State University we give a course in personal hygiene in the first year in medicine. The course in clinical medicine, in which epidemiology and communicable diseases come into play, is given in the junior year. The senior year is covered by a course in preventive medicine of only two hours. I think the five-hour course referred to by Dr. Vaughan is probably adequate for the medical student, except for those who desire to enter the field of industrial medicine. Opportunities for election should be given in the junior and senior year, particularly in the senior year, for intensive study of public health work. The demand far exceeds the supply. In the state of Ohio, large commercial concerns are asking for young medical men trained in public health work, particularly in preventive medicine, industrial medicine and surgery, etc., and it is impossible to supply properly trained men.

DR. JOHN SUNDWALL, Minneapolis: Public health workers in the future should be in largest measure recruited from members of the medical profession. There is no question at all that sanitarians or other members from other professions are making good health officers. The same thing is true of a great many of the sciences that make up the medical profession. Many of our best anatomists have been recruited from the departments of zoology and biology. Public health in the future is going to be concerned with a great many bigger problems than those concerned with epidemiology, such as human welfare and mental hygiene. Industrial hygiene will be expanded to include all adult hygiene.

DR. GEORGE M. KOBER, Washington, D. C.: I have been teaching hygiene since 1889, and I want to make a plea in favor of the report of the committee for a greater number of hours in the curriculums of our medical schools for this branch. In our own school we give sixty hours to general hygiene, thirty hours to the etiology and prevention of communicable diseases, and fifteen hours to military and naval hygiene. I believe that number of hours devoted to these subjects is no more than sufficient to be of substantial aid to the average practitioner in the treatment of disease. The object of hygiene is not only the prevention of disease but also the improvement of health, which is a most important factor in the treatment of disease.

DR. G. CANBY ROBINSON, St. Louis: At Washington University we have a course of thirty-three hours in preventive medicine, and eleven hours of social medicine. We have considered ways and means of improving matters, and have

discussed a plan of departmental cooperation in these matters, putting one person in charge of the course, but having all the departments participate in the working out of the completed course.

DR. A. P. MATTHEWS, Cincinnati: Dr. Vaughan's recommendation was mainly along the line of epidemiology, but there is an important field in industrial hygiene and medicine, particularly the character of people engaged in these industries. The University of Cincinnati gets support in its departments of industrial medicine and preventive medicine for public health, from the business men of Cincinnati. At the suggestion of the late Dr. Holmes, a committee of business men secured money to support the department of industrial hygiene. There is undoubtedly a great possibility of the medical profession's getting in closer touch with business industries through this means.

DR. E. P. LYON, Minneapolis: I have a feeling that as more and more subjects are pressed on the medical curriculum for entrance, we shall have to do exactly what the colleges did and make a curriculum which will be more particularly elective than any school so far has done. That will mean we shall have to specialize in degrees, and certain men who are not qualified for licensure should be content to continue their fundamental preparations until they are. We might call them all doctors when they are trained on the proper basis and fitted for the work that has to be done. Or we should view the matter from the standpoint of general good.

DR. OSKAR KLOTZ, Pittsburgh: We all realize that each school has a duty to perform which differs with the situation of the school, and it is hard to apply one standard to every school. Our own situation is much like that in Cincinnati. We have certain problems in our vicinity of outlining education in which the public is interested. If we should follow the standards of the U. S. Public Health Service in hygiene we should fail in the result. We have an industrial situation that is peculiar. The ordinary individual who has had training in hygiene is hardly able to realize the extent to which the public demands attention. The standardization of departments of hygiene is very difficult.

DR. WORTH HALE, Boston: We are developing an elective system at Harvard in the study of these problems, and are permitting fourth year men to elect a course dealing wholly with problems related to public health, hygiene and industrial medicine. We do not anticipate that they will become finished products in these subjects, but we hope that a certain group of men will become interested so that they will continue further in the work which appeals to them and thus supply some of the demand that appears to be urgent.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: The prime and particular object of a medical school is to teach preventive medicine and curative medicine. A school for hygiene should not be under the medical department. I hope that schools of hygiene will be open not only to medical graduates but also to the sanitary engineer, the sociologist, or to any one who is interested.

Report of Committee on Teaching of Pharmacology

DRS. A. N. RICHARDS, TORALD SOLLMANN and C. W. EDMUNDS: Pharmacology has profited greatly by the advances in medical education which have taken place in the past ten or fifteen years. New departments have been established in schools where none existed before, and where the teaching of this subject was under the control of some other medical branch, it has been split off and established as a separate and distinct department. The teaching of the subject has been simplified also through the aid of the state licensing boards, which are confining their attention in examinations to the more important drugs, to the exclusion of those of lesser importance. It is hoped and expected that these tendencies, if continued, will still further advance the teaching of pharmacology in the future. In regard to the contents of the course in pharmacology, the student should learn what the really useful drugs are, and also the limitations of their usefulness. He should learn their fundamental action and their side actions. These studies lead naturally

to a study of their toxicology and to the treatment of poisoning. He must learn sufficient materia medica to know something of the physical and chemical characters of the drugs and of their principal preparations, so as to be able to prescribe them correctly, and he must become fairly proficient in prescription writing. He should also be required to practice the writing of prescriptions in his later clinical courses in medicine and in therapeutics whenever an occasion for the use of drugs arises. Some instruction in therapeutics may be given, but the practical work in this branch must necessarily be left for the hospital ward.

The time to be devoted to the subject should be from 175 to 200 hours, not taking into consideration the teaching of practical therapeutics. This may be divided roughly into two parts: from seventy-six to 100 hours to be devoted to laboratory instruction, and the remainder to a systematic lecture or quiz course. The laboratory time, in turn, may be divided into two parts if desired: one part devoted to materia medica and pharmacy being given in the first year, and the other portion devoted to pharmacodynamics proper being given in the second year. Or, if preferred, the entire time to be spent in laboratory instruction may be utilized in one course to be given preferably in the second or third year. In this course a few hours may be devoted to pharmacy and to the chemistry of drugs, but the greatest emphasis should be laid on experimental pharmacodynamics. As far as possible, the experiments should be carried out by the students, working in groups under adequate supervision; but when the experiments are not suitable for students to carry out the work themselves, demonstrations may be substituted. Carefully kept notes of all the experiments should be required of all the students. The laboratory course should be rounded out by frequent informal conferences, quizzes and lectures, so as to give the student an intelligent knowledge of the subject under discussion. Some introductory work in the prescribing of the commoner remedies may also be given in the laboratory course. The remaining seventy-five or 100 hours to be devoted to the subject may be utilized according to the wishes of the instructor in charge, either as a lecture course with frequent quizzes or as a quiz course proper following one of the standard textbooks and supplemented by lectures on different phases of the subject. This course should follow on the completion of physiology and would, therefore, naturally come in the second year or early in the third. It should cover such materia medica as may seem essential; prescription writing, which should be practiced at every opportunity, but, above all, a thorough study of the pharmacology of the more important drugs, with briefer reference to those of lesser importance and the ignoring of those which should be discarded entirely. Such mention of therapeutics may be made as will serve to assist the student in the memorizing of his pharmacology and lend greater interest to the subject, and, in addition, give him a foundation for the courses in practical therapeutics which will be given him later.

DISCUSSION

DR. A. N. RICHARDS, Philadelphia: The spirit is the thing on which we should concentrate, and the letter consequently will take care of itself. Laboratory work and laboratory methods represent the nucleus about which the course in pharmacology must center. By laboratory work I mean not only that which the student does himself, that is, the beginning, but that which he is shown by an expert instructor of experiments which he is unable to do, which experimental work is the body of knowledge which represents science. The student must be brought to know what people have been thinking about whenever they advise experiments; and to interpret the results of the experiments, he must learn something of the value of evidence and the capacity to interpret evidence. Then he will be in a position to protect himself against embarrassment and against the half digested views of others with whom he may be confronted later on. If we can impart spirit to the student, make him see that the subject is alive, that it is a fallible thing, that it is full of holes and lots of opportunities for differences of opinion, and that the subject is intrinsically difficult, we shall have accomplished half of our task.

DR. JOHN W. SCANE, Montreal: If a student in pharmacology is given a synopsis of the things in his hands, with clear directions that he is to perform certain experiments, and is left alone to work them out in his own way, giving him no spoon feeding, no actual assistance in the performance of these experiments, and then checking the work up at the end of the laboratory period on that subject, he will do much better work. We have pursued that method at McGill in the last few years with more satisfactory results than formerly.

DR. WORTH HALE, Boston: One has to adapt the course to meet local conditions. We teach very little materia medica and pharmacy. We attempt to give the student a great many chemical relations of drugs in the laboratory, and devote about an equal amount of time to pharmacodynamics. The more I teach, the more I am impressed that a student can frequently get facts and historical knowledge more easily from reference textbooks and original papers than he can from laboratory experiments themselves.

DR. HUGH McGUIGAN, Chicago: One of the greatest handicaps I find in the students that come to us is that eight out of ten know very little or nothing about chemistry. If pharmacology is indicated, it is applied organic chemistry, and the men do not know it.

DR. ALEXANDER MACALISTER, Trenton, N. J.: As a member of the state board of examiners, in conducting examinations in materia medica and therapeutics I find that applicants for licensure are very deficient in their knowledge of dosages and in prescription writing. At our last examination, out of twenty-six applicants, there were only two who could write prescriptions properly. I think this is largely due to the fact that these branches are taught imperfectly in the majority of medical colleges.

Pathology, Bacteriology and Parasitology

Papers were read by Dr. James Ewing, New York, on "Pathology," and by Dr. A. I. Kendall, Chicago, on "Bacteriology and Parasitology."

DISCUSSION

DR. LOUIS B. WILSON, Rochester, Minn.: I cannot wholly agree with Dr. Ewing regarding the impossibility of teaching men necropsy technic in the undergraduate course, but I do agree as to the undesirability of teaching men how to perform operations for the removal of brain tumors. It is not impossible to teach a man quickly and reasonably a good necropsy technic, and unless we teach them they will never do it.

DR. J. P. JOBLING, New York: Pathology is probably the first subject the medical student takes up, in which he applies to a large degree the work he has already gone over. To a certain extent that includes anatomy, bacteriology, physiology, biologic chemistry, etc. Pathology should be taught to as large a degree as possible by actual observation, by experimental work, and by actual necropsy work.

DR. OSKAR KLOTZ, Pittsburgh: We are realizing more and more that pathology is only a special department dealing with morbid anatomy, but more and more we must realize the human side of the subject. It has been stated several times at this meeting that pathology forms more or less of a link between the fundamental departments and clinics. It has all the attributes of the fundamental departments in their ideals. It has also another attribute of its own, and that is of making it eminently human in its application to disease. That is much more difficult than to bring in some of the other fundamental departments, such as anatomy and chemistry, but pathology is one of the subjects concerning which the student realizes, for the first time, that he is approaching his ideals in medicine.

DR. ALEXANDER C. ABBOTT, Philadelphia: The burden of the song throughout this conference has been that there is a distinct and conspicuous line of demarcation between the fundamental sciences and the practical branches of medical teaching. Let us teach our sciences in the first two years, but let us develop in some way, either at the end of the second year or in the third year, a first class, gilt edge clinical laboratory, in which we shall have coordinated all of these more or less abstract sciences, a laboratory so equipped

that these sciences can be brought to bear directly on the cases seen in the dispensary and hospital.

DR. H. GIDEON WELLS, Chicago: I wish to emphasize what Dr. Wilson said about the desirability of teaching pathologic technic with laboratory animals. We can do that easily enough, but how few laboratories do it? You can give a man a good fundamental grounding in technic by using selected material.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

February, 1920, 3, No. 12

- *Artificial Tuberculous Infection of Guinea-Pigs Through Respiratory Route. J. B. Rogers, Cincinnati.—p. 750.
- *Pulmonary Syphilis. E. H. Funk, Philadelphia.—p. 754.
- Three Cases of Spontaneous Pneumothorax. E. Morris, New Haven.—p. 763.
- *Spontaneous Pneumothorax Following Artificial Pneumothorax; Operation; Recovery. C. H. Cocke, Asheville.—p. 781.
- *Case of Pulmonary Tuberculosis Terminating in Spontaneous Hemopneumothorax Following Artificial Pneumothorax. F. H. Heise and A. K. Krause.—p. 788.

Tuberculosis Infection of Guinea-Pigs by Inhalation.—Rogers reports further experiments on the production of pulmonary tuberculosis in guinea-pigs by the inhalation of tuberculosis material. In all the experiments the guinea-pigs were wrapped so that only their nostrils were exposed to the spraying. All animals giving a single spraying of five minutes with a suspension of tuberculosis sputum developed pulmonary tuberculosis. Particles of tuberculosis sputum containing tubercle bacilli placed on the normal nasal mucous membrane brought about tuberculosis changes in the cervical lymphatic glands with involvement of the lungs, liver and spleen later.

Pulmonary Syphilis.—Funk believes that late syphilis of the lung occurs clinically more often than is generally taught. Diagnosis is difficult and judgment may have to be suspended until syphilis has been controlled by treatment, when "apical râles" will clear with the associated bronchitis if signs are due to syphilis. The author reports in detail three cases of what he believes was pulmonary syphilis that have come under his own observation.

Operation and Recovery in Spontaneous Pneumothorax Following Artificial Pneumothorax.—A patient with acute tuberculous bronchopneumonia was treated by artificial pneumothorax. Thirty-four days after the first introduction of nitrogen gas, and following a coughing fit, spontaneous pneumothorax developed. At first partial, within twelve days the spontaneous pneumothorax had become complete, and purulent fluid developed in the chest. The patient became very septic and gravely ill and on the eighteenth day of the spontaneous pneumothorax a rib resection was done under local anesthesia. Cocke says that after surgical operation, the patient's relief was spectacular and that his fever disappeared within a day or two and has remained normal since.

Spontaneous Hemopneumothorax Following Artificial Pneumothorax.—Heise and Krause report the case of a man, aged 21, who had hemoptysis and pain in his chest. These symptoms were so indefinite that diagnosis at first was only tentative. He did well for several months but then his condition became less favorable. After six months he was continually febrile and was having more hemoptyses. Meanwhile, his signs indicated a slight stationary process, while the roentgen-ray showed markedly progressing involvement. The fifty-sixth examination was positive for the first time. By this time the patient was gravely ill. Artificial pneumothorax was performed. The next day, after raising himself in bed, the patient suddenly experienced a sharp stabbing pain in his left side. The patient went into collapse and died fourteen hours after the rupture of his lung. At necropsy, it was found that the pneumothorax needle had not injured the

patient's lung. On the anterior surface near the caudal tip was a tear of the pleura over a small cavity and close to a short and very thick adhesion. The entire left lung was involved with a caseating process that was cavitating at numerous places. The left thoracic cavity contained about 2 liters of clotted blood.

Arkansas Medical Society Journal, Little Rock

February, 1920, 16, No. 9

- Review of Diagnostic Methods. W. M. McRae, Little Rock.—p. 171.
- When, Where and How to Operate in Fresh War Wounds. L. J. Kosminsky, Texarkana.—p. 176.
- Ileocolitis. J. W. Melton, Benton.—p. 178.

Canadian Medical Association Journal, Toronto

March, 1920, 10, No. 3

- *Plasmoma of Nasopharynx. J. T. Rogers.—p. 223.
- Tuberculosis of Urinary System. J. E. Palmer.—p. 225.
- Pyloric Stenosis of Infancy. F. W. Stockton.—p. 230.
- Case of Chronic Middle Ear Suppuration, Cholesteatoma, and Mastoiditis, Complicated by Labyrinthitis, Sinus Thrombosis and Meningitis. J. K. Milne Dickie.—p. 238.
- *Treatment of Obstructive Dysmenorrhea. E. V. Frederick.—p. 243.
- Causes of Tick Paralysis of British Columbia, Rocky Mountain Fever, Infective Jaundice and Yellow Fever. J. L. Todd.—p. 245.
- Renal Calculus. W. Hutchinson.—p. 250.
- Some of Severer Forms of Chronic Headaches. W. J. Chambers.—p. 256.
- Cases of Ectopic Pregnancy. F. W. Gershaw.—p. 261.
- Chronic Intussusception with Polypus. L. G. Pinault.—p. 265.
- Case of Endothelioma of Pleura with Multiple Metastasis. A. Vallee.—p. 268.
- Aphasia in a Left-Handed Individual Consequent on a Right Cerebral Lesion. F. B. Gurb.—p. 270.
- *Retroperitoneal Congenital Cyst Probably Arising from Wolffian Body. J. M. Elder.—p. 272.
- Buried Chronic Catgut Sutures Acting As Foreign Bodies and Causing Recurrent Abscesses Thirty Years After Their Insertion. J. M. Elder.—p. 273.
- Scurvy. F. G. Finley.—p. 274.
- Tabes Dorsalis with Gastric Manifestations. A. H. Gordon.—p. 275.

Plasmoma of Nasopharynx.—Rogers reports a case in which posterior rhinoscopy revealed an uneven granular looking hemorrhagic mass, completely filling the nasopharynx and seeming to spring from its vault. The surface of the tumor showed areas of fresh and old bleeding. Digital palpation through the mouth suggested a movable and rather firm growth, any manipulation of which resulted in a persistent but not alarming hemorrhage. At this time Rogers considered the case one of nasopharyngeal fibroma. A general examination showed various systems normal. The growth was removed whole. Sections showed that it consisted essentially of plasma-like cells. A diagnosis of plasmoma was made. The tumor took origin from the inferior border of the cushion of the eustachian tube and the neighboring surface of the soft palate. A search through the literature and textbooks has failed to discover a similar case. The pathologic files of the Royal Victoria Hospital during the past five years record only two cases of plasmoma, one the subject of this paper and another which arose from the medulla of the bone.

Treatment of Obstructive Dysmenorrhea.—To overcome the objections and retain the beneficial effects of a glass cervical stem, Frederick constructed a thick hollow glass tube, 2 inches long, one-half inch in diameter, with the upper end smoothly rounded in the flame to the lower end of which a round flat vulcanite boss is firmly fastened. In the side of this vulcanite two small holes are drilled large enough to pass a needle and silk suture. The advantages of this instrument are said to be: (1) full dilatation; (2) free exit for discharges; (3) a means for suturing it firmly with silk so that it may be retained firmly as long as desired; (4) protection against rectovaginal wall perforation. The stem has been found satisfactory in the treatment of obstructive dysmenorrhea in selected cases.

Retroperitoneal Congenital Cyst Probably Arising from Wolffian Body.—A baby girl, aged 2 years, sustained an injury to the right kidney as evidenced by blood in the urine and reactionary temperature. The injury caused a congenital retroperitoneal cyst on the same side to undergo rapid increase in size. The anatomic situation and the general characters of this cyst were such as in Elder's opinion to warrant a diagnosis of cyst of the wolffian body.

Canadian Journal of Mental Hygiene, Toronto

January, 1920, 1, No. 4

- Responsibility of the Medical Profession in Program for Mental Hygiene. A. T. Mathers.—p. 295.
Mentality of Convalescence. C. E. A. Bott.—p. 302.
One Thousand Psychiatric Cases from Canadian Army. C. K. Clarke.—p. 313.
Mental Excitement in a Psychopathic Hospital: Its Prevention and Care. E. Mills.—p. 318.
Social Service Problems of Jewish Immigrant. D. A. Fauman.—p. 323.
Applications of Psychiatry to Industrial Hygiene. S. Cobb.—p. 329.
Mental Tests in Practice. A. G. Morphy.—p. 336.

Indiana State Medical Ass'n Journal, Fort Wayne

Feb. 15, 1920, 13, No. 2

- Lipovaccines. A. P. Hitchens, Indianapolis.—p. 41.
Surgical Treatment of Empyema by Closed Method. A. E. Mazingo, Indianapolis.—p. 46.
Mastoiditis at Camp Taylor. J. W. Carmack, Indianapolis.—p. 52.

Journal of Industrial Hygiene, Boston

March, 1920, 1, No. 11

- Control of Infectious Diseases in Industrial Communities. H. Zinsser, New York.—p. 525.
Chronic Benzol Poisoning. T. M. Legge, London.—p. 539.
Anthrax in Kashmir. R. P. White.—p. 541.
Unnecessary Fatigue, A Multibillion Enemy to America. F. B. and L. M. Gilbreth.—p. 542.
Teeth and the Worker. J. Burnet, Edinburgh.—p. 546.
Spirit of Work Under Craft Guilds of Middle Ages. T. M. Legge, London.—p. 550.
Physical Examinations. F. L. Meredith, Boston.—p. 556.

Chronic Benzol Poisoning.—Two cases of purpura hemorrhagica in rubber spreaders are reported by Legge, and he claims that they are the first cases of chronic benzol poisoning known to have occurred in England. The history of these cases was practically identical, commencing with malaise and anemia, which was followed by subcutaneous and submucous hemorrhages, and both men were eventually admitted to hospital suffering from bleeding from the nose, gums and bowels. The blood count in the first case was as follows: red blood cells, 2,800,000 per cubic millimeter; leukocytes, 2,000 per cubic millimeter; hemoglobin, 35 per cent.; color index, 0.6. The chief characteristic of the post-mortem examination in both cases was numerous submucous hemorrhages throughout the intestinal tract and under the endothelium of the heart. In the second case, where a more detailed examination was available, characteristic changes were observed in the bone marrow of the long bones. The conditions observed in life and after death were those seen in cases of aplastic anemia and are identical with those which have been noted in twelve cases (all fatal) arising from poisoning by T. N. T.

Journal of Nervous and Mental Diseases, New York and Lancaster, Pa.

February, 1920, 51, No. 2

- Significance of Phylogenetic and Ontogenetic Studies for Neuro-pathology. B. Brouwer, Amsterdam.—p. 113.
*Australian Epidemic of Acute Encephalomyelitis. J. B. Cleland and A. W. Campbell, Sydney.—p. 137.
*Possible Significance of Babinski and Other Pathologic Reflexes. E. D. Friedman, New York.—p. 146.

Acute Encephalomyelitis.—The authors believe that the paucity of cases in the Australian epidemic is chiefly due to the fact that many individuals in the community react to the presence of the virus and its toxins in the nervous system to such a slight degree that no interference with physiologic function results, hence there are no manifestations of illness. In other individuals the reaction is a degree heavier, and these are the abortive cases; in a few individuals the reaction is great and interference with function is pronounced.

Significance of Babinski Phenomenon.—It is suggested by Friedman that it is possible that all pathologic reflexes are an expression of an atavism. A lesion of the corticospinal system causes man to revert to the stage of the tree climbing monkey in whom there seems to be a dissociation between the great toe and the little toes. The presence of a positive Babinski in epilepsy would be explained by the injury to the corticospinal system and that the reflexogenic zone for elucidating these pathologic reflexes could most readily be explained on the assumption of adaptation to function.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

February, 1920, 14, No. 6

- Effects of Various Colloids and Other Agents Which Produce Anaphylactoid Phenomena on Bronchi of Perfused Lungs. P. J. Hanzlik and H. T. Karsner, Cleveland.—p. 449.
*Effects of Various Colloids and Other Agents Which Produce Anaphylactoid Phenomena on Surviving Intestine and Uterus. P. J. Hanzlik, Cleveland.—p. 463.
Hemagglutination in Vitro by Agents Which Produce Anaphylactoid Symptoms. H. T. Karsner and P. J. Hanzlik, Cleveland.—p. 479.

Effects of Agents Which Produce Anaphylactoid Phenomena on Surviving Intestine and Uterus.—The results of Hanzlik's study sustain the contention elaborated in previous papers as to bronchial musculature, that the disturbances produced by the intravenous injection of agar and various nonprotein colloids, and also arsphenamin, bear no relationship whatsoever to anaphylaxis or anaphylactic shock.

Journal of Urology, Baltimore

December, 1919, 3, No. 6

- *Massive Degeneration in Tuberculosis of Kidney and its Role in Clinical Cure. A. Randall, Philadelphia.—p. 427.
*Migrating Bladder Stone. B. S. Barringer, New York.—p. 445.
*Method for Control of Hemorrhage After Suprapubic Prostatectomy. B. S. Barringer, New York.—p. 447.
*Case of Blastomycosis Involving Prostate and Seminal Vesicles; Recovery. F. J. Parmenter and B. T. Simpson, Buffalo.—p. 449.
Nephritis in Fifty-Six Soldiers. H. Gray, Boston.—p. 459.

Massive Degeneration in Tuberculosis of Kidney and Its Role in Clinical Cure.—Randall pleads for the putting forth of greater effort to establish the possibility of cure by anatomic healing. He reports a case in which renal tuberculosis was not only primary, but was unilateral, and it was likewise completely destructive of the organ. Spontaneous "autonephrectomy" succeeded; the infectious character was ultimately conquered, and the patient succumbed to a disease in no way related to his renal disease—pernicious anemia. The diagnosis was made at the time of the necropsy.

Migrating Bladder Stone.—On making a rectal examination of a man, aged 50, Barringer found just within the anal sphincter a stone nearly as large as a hen's egg. The stone was black, rough and shining like coal. Twelve years before the patient had a perineal section and perineal drainage. Ten years ago he entered a hospital because of partial retention of urine, dribbling and abscess formation in the perineum. He was told that he had a growth in the rectum because of marked constipation and straining at stool. Another perineal section was performed. Ever since this last operation he noted, at intervals, the escape of urine from his rectum and fecal matter from his urethra. For the past six months this has been constant, with great urinary tenesmus and very often fecal and urinary incontinence. He has had the sensation of some obstruction and dull pain in his rectum, and has noted that his stools were ribbon-like. A year ago he again went to a hospital because of an abscess in the perineum. This was opened. The patient has never had a rectal injury, and never had introduced any foreign body into his urethra. He had an attack of gonorrhea at the age of 21. The stone had as a nucleus a piece of the shaft of a long bone. This center nucleus was surrounded by lamellae of phosphatic crystals in which no fecal matter was found except in the way of slight staining. This, in the author's opinion, clearly indicates that the stone arose in the bladder.

Control of Hemorrhage After Suprapubic Prostatectomy.—After enucleation of the prostate, Barringer inserts a strip of 2-inch gauze, several yards in length, through the open bladder into the bed from which the prostate has been removed. The gauze is packed into the prostate bed with the index finger of the right hand, or with a plain thumb forceps, against the counter pressure of two fingers of the left hand which have been previously inserted into the rectum to aid in enucleating the prostate. Enough gauze is used to overfill the prostate cavity. With the hemorrhage controlled, a simple sponge stick is passed into the bladder and the gauze ball grasped by this. The bladder is sutured to the rectus fascia and the hole in the bladder sewed up.

simply allowing space for the gauze and sponge stick. No tubes are put into the bladder but the urine finds exit alongside the sponge stick and gauze. The dressings are changed as often as they are saturated. If the bleeding begins again, pressure on the sponge stick controls it.

Blastomycosis Involving Prostate and Seminal Vesicles.—The patient whose case is recorded by Parmenter and Simpson is said to be one of the few to recover from extensive systemic blastomycosis. Only in the epididymis is there any evidence of the disease after four years, during which time the lungs, skin, muscles of the leg, prostate and seminal vesicles have been involved.

Medical Record, New York

March 6, 1920, 97, No. 10

- Instincts, Emotions and Endocrines in Sterility. S. W. Bandler, New York.—p. 383.
 Pandemic of Influenza as it Affected Canton, China. W. W. Cadbury, Canton.—p. 391.
 Dreams of Feeble Minded. W. S. Walsh, Providence, R. I.—p. 395.
 Intestinal Toxemia; Its Medical and Surgical Treatment. W. F. Burrows and E. C. Burrows, New York.—p. 398.
 *Chronic Anilin Poisoning. W. G. Thompson, New York.—p. 401.

Chronic Anilin Poisoning.—A case of chronic anilin poisoning, manifesting all of the typical symptoms, namely, vertigo, gastritis, diplopia, asthenia and an exfoliative dermatitis, is reported by Thompson. The cause of the poisoning was a French hair dye called "goute à goutte." The type of anilin was paraphenophendiamin, 2 per cent., hydrogen peroxid, 75 per cent., and alcohol, 23 per cent. Thompson points out that the menace of anilin hair dyes has not yet sufficiently been emphasized to be appreciated generally by the medical profession. The fact that personal susceptibility varies as much as in the case of poisoning, for example, by Rhus toxicodendron, only makes it more difficult always to recognize such cases. It is well to be suspicious of artificial Titian red hair and all the darker shades up to jet black.

March, 13, 1920, 97, No. 11

- *Etiology of Thrombo-Angiitis Obliterans. W. Meyer, New York.—p. 425.
 *Chemical Blood Findings in Thrombo-Angiitis Obliterans. A. Bernhard, New York.—p. 430.
 *Pathology of Thrombo-Angiitis Obliterans. L. Buerger, New York.—p. 431.
 Ureteral Kinks and Their Significance. F. A. Roberts, Newark.—p. 437.
 *New Method of Phagocytosis Test, with Blood Plasma. Specific Immunologic Reaction. M. Otani, Tokyo.—p. 439.
 Cancer Problem. E. H. King, Portland, Me.—p. 444.

Etiology of Thrombo-Angiitis Obliterans.—Meyer asserts that the characteristics of the patients who are particularly prone to develop thrombo-angiitis obliterans seem to indicate a hereditarily weak sympathetic nervous system. Hence, the functioning of the eliminating glands (kidneys, etc.) innervated by that nervous system, is probably subnormal. When the system of such a patient is kept incessantly flooded with tobacco smoke poisons over long periods of time, the elimination of the poisons by these glands is liable to fall behind, and the system will gradually become saturated with the poisons. This is the starting point of the trouble. Vicious circles of various types, a general upset of physiologic balances in the blood, tissue asphyxia, etc., are induced, and cause, secondarily, blood vessel lesions which in time lead to the onset of the symptom complex known as "intermittent limping" and, under certain conditions, to the culminating development of the disease, "gangrene." The only real cure for the disease is prophylaxis. People so constituted as these Hebrews are should not smoke. They should be warned in good season—at home, in school, from the pulpit—of the deleterious effects and serious consequences to them of the excessive use of cigarettes.

Chemical Blood Findings in Thrombo-Angiitis Obliterans.—The results of investigation of the sugar tolerance test in thirty-six verified cases of thrombo-angiitis obliterans revealed the following: 1. The blood sugar concentration at the zero hour varies between 96 and 210 mg., with an average of 115 mg. per hundred cubic centimeters, the urine showing no sugar at the zero hour. 2. The blood sugar at the end of the forty-five minute period varied between 106 and 344 mg.,

with an average of 179 mg., and 36 per cent. of the patients showed sugar in the urine at the forty-five minute period, of which 23 per cent. had a lower blood concentration than 150 mg. Six patients had a blood sugar concentration of 180 mg. or higher without showing sugar in the urine, and 69 per cent. showed a concentration of 150 mg. or more. 3. The blood sugar at the end of the two-hour period varied between 96 and 288 mg. with an average of 146 mg.; 33 per cent. showed sugar. 4. In three cases, or 8 per cent. of all the cases, Type I reaction was obtained; 92 per cent. of the cases gave Type II reaction. In none of the cases did Type III reaction result. In contrast, the series of 300 other cases gave 36 per cent. Type I, 55 per cent. Type II, and 9 per cent. Type III.

Pathology of Thrombo-Angiitis Obliterans.—The lesions in thrombo-angiitis obliterans as noted by Buerger are, in chronologic order: (1) an acute inflammatory lesion with occlusive thrombosis, the formation of miliary giant cell foci; (2) the stage of organization or healing, with the disappearance of the miliary giant cell foci, the organization and canalization of the clot, the disappearance of the inflammatory products; (3) the development of fibrotic tissue in the adventitia that binds together the artery, vein and nerves.

New Method of Phagocytosis Test with Blood Plasma.—This method is described in such detail that the original article should be consulted. The basis of the method is the observation that the citrated or oxalated blood plasma of persons infected by a certain species of pathogenic micro-organism has been found to have a remarkably augmented phagocytal power against that particular species of micro-organism. The acceleration of phagocytosis is considered to be one of the immunologic reactions, by means of which an early diagnosis of tuberculosis, typhoid fever and dysentery may be established. The method is far more simple than Wright's opsonin test. It can easily be applied for clinical purposes as well as for immunologic investigation.

Michigan State Med. Society Journal, Grand Rapids

March, 1920, 19, No. 3

- Industrial Surgery and Its Similarity to War Surgery. H. N. Torrey, Detroit.—p. 105.
 Wound Shock. F. S. Baird, Bay City, Mich.—p. 107.
 The Cancer Question. J. G. R. Manwaring, Flint, Mich.—p. 110.
 Tuberculosis. G. Waters, Memphis, Mich.—p. 113.
 Diagnosis and Treatment of Peripheral Nerve Injuries. F. C. Kidner, Detroit.—p. 116.
 *Case of Aortic Aneurysm. A. M. Crance, Bay City, Mich.—p. 120.
 Congenital Harelip and Cleft Palate. C. L. Straith, Detroit.—p. 122.

Blood Pressure in Aortic Aneurysm.—The only symptom complained of by Crance's patient was "slight pain in the chest with an occasional shortness of breath," but the pathologic findings were quite numerous. There was a decided difference in the pressure in both arms, an important sign which points toward aneurysm. Hence, Crance believes, the blood pressure should be taken bilaterally in all cases presenting cardiovascular symptoms. He also is of the opinion that chancres occur within the urethra, associated with gonorrhea, more often than has been realized.

Military Surgeon, Washington, D. C.

March, 1920, 46, No. 3

- William Paul Crillon Barton (1786-1856), Surgeon, Navy—A Pioneer in American Naval Medicine. F. L. Pleadwell, Washington, D. C.—p. 241.
 American Physician in Draft and in Service of World War. V. C. Pedersen, New York.—p. 282.

Nebraska State Medical Journal, Norfolk

February, 1920, 5, No. 2

- Knee Joints. H. Winnett Orr, Lincoln.—p. 33.
 Enlargement of Cervical Lymph Glands. F. W. Heagey, Omaha.—p. 37.
 Abscessed Teeth and Systemic Disturbances. J. W. Shuman, Sioux City.—p. 40.
 Blood Sugar; Report of Cases. Miles J. Breuer, Lincoln.—p. 44.
 Blood Chemistry and Its Clinical Significance. M. G. Wohl, Omaha.—p. 48.
 Necropsies. A. A. Conrad, Crete.—p. 51.
 Roentgen Diagnosis of Malignant Bone Tumors. S. A. Levey, Omaha.—p. 54.
 General Anesthesia. G. W. Reneker, Falls City.—p. 55.

New Jersey Medical Society Journal, Orange

March, 1920, 17, No. 3

Some Medical Tendencies and Responsibilities. A. Lambert, New York.—p. 73.
Mental Hygiene and Public Health. C. C. Beling, Newark.—p. 79.
Public Health Service in Middlesex County. C. W. Naulty, Jr., Perth Amboy.—p. 83.
After-Care of Sanatorium Patients. M. J. Fine, Newark.—p. 85.
Colon Bacillus in Vagina as a Cause of Leukorrhea and Sterility. S. Barbash, Atlantic City.—p. 87.
Vassermania. C. L. DeMeritt, Hoboken.—p. 89.

Colon Bacillus in Vagina as a Cause of Leukorrhea and Sterility.—Barbash uses autogenous vaccines in all cases of leukorrhea with very gratifying results. He also uses local treatments consisting of tampons impregnated with a preparation containing ichthyol, iodine and phenol. The vaccines invariably contained the colon bacillus together with one of the staphylococci. These cause at times a profuse leukorrhea with highly acid reaction, which in turn may cause ulceration in the vagina. The colon bacillus by reason of its acid producing ability renders the patient sterile.

New York Medical Journal

Feb. 21, 1920, 111, No. 8

Occupational Diseases. J. F. X. Jones, Philadelphia.—p. 309.
Education of Physician. F. T. Woodbury, Edgewood Arsenal, Md.—p. 317.
Compulsory Health Insurance. E. MacD. Stanton, Schenectady, N. Y.—p. 320.
Bill of Rights of Child. I. W. Brewer, Watertown, N. Y.—p. 323.
Clinical Interpretation of Scarletoid Rashes. M. Scholtz, Los Angeles.—p. 325.
Metatarsalgia and Allied Conditions. A. D. Kurtz, Philadelphia.—p. 329.
Treatment of Syphilis by New Mercurial Preparation. J. Lewengood, New York.—p. 331.
My Friend, The Consultant. L. M. Kahn, New York.—p. 332.

Feb. 28, 1920, 111, No. 9

Roentgen-Ray Studies of Functional Alterations of Diaphragm. H. K. Pancoast, Philadelphia.—p. 353.
Errors in Abdominal Diagnosis as Seen by Pathologist. S. P. Reimann, Philadelphia.—p. 355.
Relationship of Ophthalmology to Group Diagnosis. H. E. Smith, New York.—p. 357.
Sources of Error in Estimation of Blood Pressure. A. E. Oliensis, Philadelphia.—p. 358.
Modern Treatment of Sterility. H. M. Armitage, Chester, Pa.—p. 360.
Treatment of Tuberculosis in Experimental Animals. B. S. Paschall, New York.—p. 363.
High Heels and Body Health. H. Scheimberg, Brooklyn.—p. 369.
Bone Tumors of Thyroid Origin. J. C. O'Day, Honolulu, Hawaii.—p. 374.
Heredit. L. D. McEvoy, New York.—p. 375.

Roentgen-Ray Studies of Functional Alterations of Diaphragm.—Greater study of the diaphragm movements is urged by Pancoast. Interference with the action of the diaphragm is readily detected by the roentgenoscope and this may be an important means of determining the structure affected and the pathologic conditions responsible for the functional disturbances of the muscle. The study of the diaphragm is, therefore, an important means of diagnosis, and in a few instances, the sole source of knowledge whereby the condition present can be determined. These conditions are detailed by Pancoast.

March 6, 1920, 111, No 10

Psychology of Flying. H. G. Sutherland, London.—p. 397.
Somatic Symptoms in Nervous and Mental Diseases. F. X. Dercum, Philadelphia.—p. 402.
Varieties of Tremor at Front. T. A. Williams, Washington, D. C.—p. 404.
Problems of Eugenics in Connection with Manic Depressive Temperament. B. Onuf, Rutherford.—p. 407.
Lethargic Encephalitis. S. E. Jelliffe, New York.—p. 412.
Neurogenic Study in Production of Dyspnea. F. P. Miller, Los Angeles.—p. 416.
Gastric Ulcer Treated by Nerve Blocking. E. A. Parker, Brooklyn.—p. 418.
Use of Relaxation in Hypertensive States. E. Jacobson, Chicago.—p. 419.
Treatment of Tuberculosis in Experimental Animals. B. S. Paschall, New York.—p. 423.

Somatic Symptoms in Nervous and Mental Diseases.—A condition met with infrequently to which Dercum calls attention is one in which primary nervous disease and primary visceral disease coexist in the same patient; for example,

brain tumor and hysteria, pelvic disease and hysteria. A case in point is cited. The early history suggested an actual lesion of the esophagus due to some trauma in the act of swallowing, perhaps from a bolus of hard or mechanically irritating mass of food, and the first esophagoscopy seemed to confirm this. Later, it seemed as though the symptoms had their origin in a spasm of the esophagus; later still the symptoms suggested hysteria, particularly as they disappeared for a time under suggestion. However, convulsive seizures which were neither reconcilable with those of hysteria or of a true epilepsy, remained unexplained. It was only the later appearing mental features which led to a correct appreciation of the case. Evidently the case was one of dementia praecox in an early stage, the symptoms of which at the time the patient first presented himself were just beginning to reveal themselves. His early conduct and general demeanor in the wards became increasingly explicable as he continued under observation. It would appear further that the convulsions which the patient described and which were difficult to classify, are to be regarded as among the epileptiform attacks—the motor crises—every now and then met with in cases of dementia praecox, especially in the developmental period. Finally, the case teaches a valuable lesson as to the interpretation of local or visceral symptoms, when the latter have no or little physical foundation, and when, still further hysteria offers an inadequate and unsatisfactory explanation.

Oklahoma State Medical Ass'n Journal, Muskogee

December, 1919, 12, No. 12

Tuberculosis Dispensary. H. T. Price, Tulsa.—p. 341.
Review of Tuberculosis. J. W. Nieweg, Duncan.—p. 344.
Acute Miliary Tuberculosis Following Puerperal Infection. M. H. Newman, Oklahoma City.—p. 347.
Newer Methods of Differentiating Effort Syndrome, Tuberculosis, and Hyperthyroidism. R. M. Balyeat, Oklahoma City.—p. 350.

Southwest Journal of Med. and Surg., El Reno, Okla.

February, 1920, 28, No. 2

Laboratory as Aid in Practice of Medicine. S. F. Hoge.—p. 25.
Fistula-in-Ano. S. B. Hibbard, Kansas City, Mo.—p. 31.
Ileocecal Insufficiency. J. M. Postell, B. H. Lovelady, F. H. Clark, M. S. Gregory, Oklahoma City.—p. 40.
The Conscious Conflict as a Factor in the Etiology of Hysteria. M. S. Gregory, Oklahoma City.—p. 48.

Southwestern Medicine, El Paso, Texas

February, 1920, 4, No 2

Prostate. N. D. Brayton, Miami, Ariz.—p. 1.
Etiology and Nonsurgical Treatment of Chronic Otitis Media. H. L. Brehmn, Albuquerque, N. M.—p. 6.
Treatment of Hay Fever. R. R. Brownfield, Phoenix, Ariz.—p. 10.

Surgery, Gynecology and Obstetrics, Chicago

March, 1920, 30, No. 3

*Malignant Myoma and Related Tumors of Uterus. N. Evans, Rochester, Minn.—p. 225.
*Treatment of Tuberculous Osteoarthritis by Bone Grafts. C. R. LaValle, Buenos Aires, Argentine.—p. 239.
Petrochanteric Fracture of Femur. A. O. Wilensky, New York.—p. 244.
*Origin of Tumors of Ovary. J. R. Goodall, Montreal.—p. 249.
Puerperal Infection; A Plea for Early Operation in Pelvic Septic Phlebitis. A. J. Nyulasy, Perth, Australia.—p. 265.
Urologic and Radiographic Study of the Samar Twins. H. W. Plagemeyer, Detroit, and J. H. Selby, Washington, D. C.—p. 269.
*Acute Osteomyelitis and Periosteitis Complicating Epidemic Influenza. M. Behrend, Philadelphia.—p. 273.
*Frequency and Significance of Omphalitis. A. N. Creadick, New Haven, Conn.—p. 278.
Rupture of Rectum During Labor. L. Dorsett, St. Louis.—p. 283.
Infections of Kidney in Gynecologic Practice. W. S. Danforth, Evanston, Ill.—p. 284.
Maternal Mortality; a Crime of To-Day. C. H. Davis, Milwaukee.—p. 288.
Intracranial Pressure. C. C. Rogers, Chicago.—p. 291.
*Clinical Application of Carrel-Dakin Method to Cases of Acute Appendicitis Requiring Drainage. E. T. Rulison, Jr., Sacramento.—p. 294.
Protection of Skin from Pus, Urine, Feces, Chemicals or any Other Irritating Material by the Use of Sheet Rubber Adherent to the Skin. A. L. Soresi, New York.—p. 306.
Amputation of Hip-Joint with Removal of Whole Bone, and Flaps Amputated Just Above. G. Torrance, Birmingham, Ala.—p. 308.
External Surgery of Nasal Accessory Sinuses. A. G. Coakley, New York, and W. W. Pearson, Des Moines, Iowa.—p. 309.
Brain Abscess Complicating a Local Cranial Infection. W. Sharpe, New York.—p. 312.

Tumors of Uterus.—Evans makes a very detailed analytical report of the study of seventy-two cases in a series of 4,000 operations for uterine fibromyoma.

Treatment of Tuberculous Osteoarthritis by Bone Grafts.—LaValle uses grafts which extend from the diaphysis to the epiphysis without touching the articular cavity or coming in contact with the tuberculous tissue.

Origin of Tumors of Ovary.—Goodall's work is based on sections, both serial and nonserial, from ovaries of 127 females of all ages, from a few hours to 80 years, as well as on serial sections of five human embryos. The comparative study covers, roughly, 15,000 sections, mostly serial, from the cow, pig, sheep, cat, mouse, rabbit, guinea-pig and the dog, and from the embryos of the cow, dog, pig and cat. He takes up the histology of the ovary, the significance and origin of its various structures, its analogy to the testis and the origin of various tumors of the ovary.

Osteomyelitis and Periosteitis Complicating Epidemic Influenza.—Behrend reports five cases in one of which the radius was removed. He also reviews the literature of excision of the radius.

Frequency and Significance of Omphalitis.—On microscopic examination of the cord in 2,200 consecutive cases in which the infant weighed more than 1,800 gm., forty-three specimens showed leukocytic infiltration of the vessel walls and the adjacent connective tissue. The lesion is not pathognomonic of syphilis, for (a) it was present in forty cases where there was no evidence of syphilis, and (b) it was absent in twenty-nine cases of undoubted syphilis. The lesions arises by the extension of bacterial infection from the placenta. Bacteria are frequently demonstrable in sections of the cord. The lesion is commonly associated with prolonged labor after premature rupture of the membranes. The frequency of these infections and the resulting infant mortality, Creadick says, may be reduced by the use of rectal in place of vaginal examinations.

Carrel-Dakin Method in Acute Appendicitis.—The antiseptic treatment of cases of acute appendicitis requiring drainage was undertaken by Rulison in February, 1918, as a routine. Eighteen patients have been treated by him. During the procedure of appendectomy and drainage of a peritoneal abscess an extensive contamination of the operative wound necessarily occurs. In the cases received by Rulison, the average period of suppuration was 15.4 days, during which time the majority of the wounds discharged foul pus and sloughs. The average duration of hospital stay was twenty-eight days. Among the frequent complications, fecal fistula developed in 7.5 per cent. of the cases. There was a 9.1 per cent. mortality. Whether the course of these cases may be improved in any of these essential particulars by the use of antiseptics is dependent on their safe application and a determination of their efficiency in this type of infection. Severe pain reactions and shock attend the introduction of surgical solution of chlorinated soda into the free peritoneal cavity. The use of this antiseptic must, therefore, be restricted to the treatment of the drainage tracts after the period of walling-off has occurred. The injections are, therefore, not intraperitoneal but intra-abdominal. The satisfactory establishment of a water-tight drainage tract seems to depend as to its rapidity of formation on the type of infection. Great caution as to time and manner of introducing the fluid is necessitated. Accidents involving the integrity of intra-abdominal drainage tracts, with escape of the fluid into the free peritoneal cavity, are attended by grave danger, especially if infection be present. Less slough and less foul discharge were noted in the cases treated by this method. The average time when all treatment was stopped and dry dressings applied was 13.8 days. There was no gross suppuration in seven cases, and profuse suppuration in five cases. The discharge was odorless throughout in two cases. The average duration of odoriferous discharge in fifteen cases was only six days, and in a number of cases the odor was slight. There were no cases of disruption of the wound, and only one case in which real wound infection occurred. The details of the procedure are given and the results obtained are analyzed.

Tennessee State Medical Ass'n Journal, Nashville

January, 1920, 12, No 9

- Treatment of Dysmenorrhea. C. N. Cowden Nashville.—p. 317.
Blastomycosis. J. M. King, Nashville.—p. 319.
Paranoia. W. S. Farmer, Nashville.—p. 321.
Uses of Thomas Knee Splint. R. W. Billington, Nashville.—p. 325.
Gleet. I. Simons, Nashville.—p. 329.
Parturient Woman, The New-Born Babe. I. A. McWain, Paris.—p. 335.
Surgical Treatment of Pelvic Infections. W. C. Dixon, Nashville.—p. 340.
The Dollar Doctor. W. S. Nash, Knoxville.—p. 343.

February, 1920, 12, No. 10

- Clinical Pathologist: A Medico-Sociological Study. W. Krause, Memphis.—p. 355.
Two Years' Experience with Radium. E. T. Newell, Chattanooga.—p. 358.
Interpretation of Reports on Wassermann Reaction. J. H. Litterer, Nashville.—p. 364.
Empyema. G. R. McSwain, Paris.—p. 367.
Indications for Version and Other Considerations. W. T. Pride, Memphis.—p. 378.
Practical Phase of Blood Pressure. C. D. Robbins, Gallatin.—p. 380.
Headaches from Eye Strain. E. C. Ellett, Memphis.—p. 382.
Headache Due to Intracranial Pathology. B. F. Turner, Memphis.—p. 384.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 21, 1920, 1, No. 3086

- *Atony and Prolapse of Large Intestine. J. W. Smith.—p. 243.
Tumors Complicating Pregnancy, Labor and the Puerperium. Ovarian Tumors. H. R. Spencer.—p. 246.
*Effects of Deficient Diets on Monkeys. R. McCarrison.—p. 249.
Protective Inoculation Against Influenza. W. H. Wynn.—p. 254.
*Some Unusual Forms of Dysentery. G. C. Low.—p. 255.
*Ankylosis of Mandible and Its Operative Treatment. G. Chubb.—p. 257.

Atony and Prolapse of Large Intestine.—The symptomatology of this condition, Smith says, is quite definite. In the majority of cases there is a history of a distinct starting point. Quite often it has been a continued and severe attack of abdominal pain, usually right iliac or lumbar, with confinement to bed for from two to three weeks. After subsidence the pain continues, more marked at intervals, which tend to become shorter. When the pain is right iliac, the symptoms strongly suggest a subacute appendicular attack without pyrexia, and doubtless this has actually been present in many cases. Sometimes the pain is right lumbar, in the subhepatic area. In such cases one suspects kinking at the hepatic flexure. Much rarer is left iliac pain. In the cecum pool cecum a succussion splash is usual in the right semi-lunar line, above and outside McBurney's point, but below the level of the umbilicus. This may also be found on the left side in the pelvic colon cases. Constipation, though frequent, is not constant. Dull, aching abdominal pain and feeling of weight is very constant, either in the lower abdomen, more marked to the right, or in the epigastrium. Its occurrence may or may not be associated with the taking of food, but it is often associated with the erect posture and is then relieved by lying down, and often by manual support of the abdominal wall. Gastric or duodenal trouble sometimes with frequent vomiting, sometimes with epigastric pain after food is noted. Abdominal crises, such as accompany floating kidney, are associated with enteroptosis. Very marked pulsation of the epigastric aorta, sometimes visible pulsation, is frequent. After some experience, paying attention to these points, Smith states a diagnosis can generally be made. In the great majority of these cases, especially in their early stages, medical treatment alone is needed, and very frequently, if carried out carefully and continuously, it effects either a cure or such amelioration as to render life comfortable and useful.

Effects of Deficient Diets.—Diets which are deficient in vitamins and in protein, and at the same time excessively rich in starch or in fat, or in both, are, in McCarrison's opinion, potent sources of disease, and especially of gastro-intestinal disease. An excess of fat, in association with deficiency of "B-vitamin" and protein and supe

abundance of starch, is peculiarly harmful to the organism. Certain dietetic deficiencies greatly favor the invasion of the blood and tissues by bacteria; especially is this the case when deficiency of vitamins and protein is associated with an excessive intake of starch. Since life cannot be sustained in the monkey for much longer than 100 days on a dietary almost wholly devoid of "B-vitamin," it would appear that complete absence of this vitamin from the food is of less practical importance from the point of view of the production of disease in human beings than its subminimal supply. Complete deprivation of "B-vitamin," especially if there be also imperfect balance in other essential requisites of the food, will lead to rapid dissolution and death; subminimal supply of this vitamin will lead, in like circumstances, to slow dissolution and disease. McCarrison suggests that his findings may afford some explanation of the genesis of that great mass of ill defined gastro-intestinal disorders and vague ill health which forms so high a proportion of human ailments at the present day.

Some Unusual Forms of Dysentery.—As proof that other conditions, many of them very common, may produce an almost similar clinical picture to real dysentery, Low cites the following cases: syphilitic ulceration of the rectum; large fungating malignant growth in the rectum; advanced tuberculosis of the lungs, with extensive tuberculous ulceration in the small and large bowel; schistosomiasis infection only; *paragonimus* dysentery; *heterophyses* dysentery; ankylostomiasis; balantidial dysentery, pseudodysenteries, such as foreign bodies impacted in the rectum above the anus.

Ankylosis of Mandible and Its Operative Treatment.—Chubb reports five cases in which removal of the coronoid process overcame the ankylosis. No tissue flap transplantation was done.

Journal of Mental Science, London

January, 1920, 66, No. 272

Need for Schools of Psychiatry. C. H. Bond.—p. 10.

*Mental Cases of Endocrine Considerations. G. P. U. Prior.—p. 23.

Treatment of General Paralysis. G. H. M. Krohn.—p. 46.

Mental Cases of Endocrine Considerations.—In a series of forty-six postmortem examinations, in which the glands had been taken for examination, twenty-five persons had a definite thymus gland. Among these forty-six cases were thirty-two epileptics; twenty-two of these latter had the thymus present. The largest glands were found among the epileptics. Eight epileptics died a sudden death. All had enlarged thymuses. The suprarenals showed degenerative changes in fifteen cases. In four patients there was a deficiency in the interstitial cells of the testes. The pituitary showed no constant change in twenty cases; it was either normal or of slightly increased activity. The thyroids were mostly of two types, seven being taken as being quiescent and twelve as of overactivity. The pineal gland of two examined showed degenerative changes. The liver from nineteen patients was examined. Thirteen showed signs of fatty degeneration or fatty infiltration. The pancreas was reported on from fourteen patients. In nine, the islets of Langerhans were few in number and showed degenerative changes. The spleen from eleven patients was examined. From one case it was reported normal, in one there were small hemorrhages, in two waxy degeneration; six showed fibrotic changes. In twelve female cases an enlarged thymus was found in seven. Of the ovaries in eight cases, the fibrous tissue was much increased and the organs were shrunk and atrophic. In three instances, small Graafian follicles were seen. Most worthy of note in these results is the large percentage of cases in which the thymus is found to persist, and the great number of times in which there is found degenerative changes in the suprarenal cortex. That the liver, spleen and pancreas are seldom reported to be normal is suggestive, but the number of times these organs have been examined is not sufficient to say that changes are constant. The fibrotic and atrophied ovary appear to be present almost invariably, and the fact that the menstrual function is most irregular in epileptics may depend on this.

A corresponding change is not found to the same persistency in the male sex gland.

Lancet, London

Feb 21, 1920, 1, No. 5034.

*Tumors Complicating Pregnancy, Labor and the Puerperium. H. R. Spencer.—p. 411.

Surgery During War. V. W. Low.—p. 419.

Gas Poisoning. W. P. Herringham.—p. 423.

Some Aspects of Tuberculosis Problem. T. D. Lister.—p. 425.

*Abscess of Liver Among British Eastern Troops. A. L. Candler.—p. 429.

*Influenzal Pneumonia: Intravenous Injection of Hydrogen Peroxid. T. H. Oliver and D. V. Murphy.—p. 432.

Anesthesia in Throat and Nose Operations. F. Rood.—p. 433.

Case of Hirschsprung's Disease (Megacolon) Causing Acute Obstruction. I. Tewfik.—p. 435.

Tumors Complicating Pregnancy, Labor and Puerperium.—Of the cases recorded by Spencer, three were terminated by death. The first death resulted from intestinal obstruction, due to nipping of the ileum between two subperitoneal fibroids—a very rare accident, of which Spencer has not been able to find another example. The other two deaths suggest the necessity of bacteriologic examination of the tumor before resorting to conservative abdominal operations. In one case there was present a foul discharge, after a miscarriage which had occurred six days previously at the second month. Spencer enucleated a sessile submucous myoma and removed a mass of putrid decidua in 1898. Subsequently the woman gave birth to two children. She remained in good health till 1917, when she began to lose considerably, and the abdomen increased in size. She became cachectic. She had a large, fixed, irregular, uterine tumor, nearly filling the abdomen. She had also pleural effusion and hemoptysis and other signs of growth in the lungs. From the cachectic condition, the hemorrhages and foul discharge, it appeared probable that the growth was a uterine sarcoma. The woman died nearly twenty years after the enucleation of the fibroid.

Abscess of Liver Among British Eastern Troops.—The points of importance to which Candler directs attention are that often there is no history of diarrhea or dysentery in these cases; often no amebas are found in the feces, and even in fatal cases little or no ulceration of the bowel is found postmortem. Fairly low temperature, pulse rate, and leukocytosis are not always contraindicated of the presence and quantity of pus. The liver may not be enlarged downward, or only slightly so, because of necrosis around the abscess occurring rather than the liver enlarging or being pushed downward. If the puncture fails to find pus in a case diagnosed clinically, an epigastric incision should be made in an attempt to get a scientific early diagnosis and treatment. Drainage should be free, followed by daily sterile dressing and a course of emetin hypodermically. The drainage tubes should be removed as early as possible to prevent secondary infection and sinus formation. Inflamed lung is liable to disguise inflamed liver below and beneath it.

Intravenous Injection of Hydrogen Peroxid in Influenzal Pneumonia.—There occurred in Bushra in June and July, 1919, a severe epidemic of influenza, most marked among Indian troops, and accompanied in many cases by an exceedingly toxic and fatal bronchopneumonia. In one large Indian hospital in which the influenza cases were segregated in special huts, the death rate was over 80 per cent. in the pneumonia cases with toxic symptoms. So useless were the usual remedies tried in this latter class of case, that Oliver and Murphy felt justified in giving a trial to the intravenous injection of hydrogen peroxid. The first case was one of bronchopneumonia of influenzal origin and intensely toxic. The patient had been delirious for two days previously, and was selected as being the worst case in the ward and to all appearances moribund. Two ounces of a ten volume solution of hydrogen peroxid were diluted with 8 ounces of physiologic sodium chlorid solution, and the solution made slightly alkaline with 5 minims of liquor ammoniae. This produced a faintly effervescing solution. The median cephalic vein was exposed by open dissection, and the solution infused through a glass cannula attached to a Rogers apparatus.

The solution was infused very slowly, a complete stop being made for half a minute in every four. Small bubbles were allowed to enter the vein unchecked, but if a large accumulation of oxygen appeared in the cannula, the transfusion was checked for about one minute until it had gradually entered the vein. The whole transfusion lasted for fifteen minutes. The patient showed no signs of discomfort until toward the end of the operation when he became slightly restless. This, however, passed off in a few minutes, and there were no other untoward symptoms, except a moderate rigor which occurred two hours later. After the rigor, the temperature which had been 101.8 F. fell to normal and remained so for thirty-six hours, when it again rose to 101 F. The latter rise was not accompanied by toxic symptoms and the temperature gradually fell to normal in the course of the next ten days. The change in the mental condition was remarkable. The patient, who previously had had to be tied in bed owing to delirium, was sitting up within six hours of the injection and asking for food; he slept well the next night and from that time improved in every way, eventually being invalided to India as a walking case three weeks later. Encouraged by the apparent success in this case, the authors tried the method in twenty-four other cases of influenzal pneumonia, selecting always those patients whose condition was apparently hopeless. Of the total of twenty-five cases, thirteen patients recovered and twelve died, a mortality of 48 per cent. Of the twelve who died, nine showed no visible effect for either good or ill. In three there was a temporary improvement. One patient died within five hours of the infusion, during a rigor. One patient had four injections at intervals of from three to five days without any sign of gas embolism, nor were there any signs of such embolism post-mortem.

Medical Journal of Australia, Sydney

Jan. 17, 1920, 1, No. 3

Application of Military Surgery to Civil Practice. C. G. Shaw.—p. 49.
Significance of the Complement Deviation (Wassermann) Test for Syphilis. F. Tidswell.—p. 56.

Jan 24, 1920, 1, No. 4

*Hydatid Infestation of Bone: Multilocular Hydatid Disease and Ordinary Hydatid Cysts. C. W. Corlette.—p. 73.
Case of Xanthoma Diabeticorum. R. E. Harrold.—p. 84.

Multilocular Hydatid Disease of Bone.—Following several traumatic injuries of the right thigh sustained many years ago, Corlette's patient noticed the appearance of a small swelling in the groin, and a larger swelling below the inguinal ligament. The roentgen-ray appearance suggested a new growth. At operation this mass was found to be mixed with smaller and apparently granular material. The main cavity intercommunicated with other larger and smaller loculi around the upper part of the femur, and these again with other cavities passing up behind the iliac bone and through erosion holes and also via the obturator foramen into the pelvis and thence upward. There was a very large cavity extending up over the dorsum ilii. There was also an enormous ramifying cavity reaching from within the pelvis up along the general course of the psoas as high as the liver, but not invading the liver and not invading the kidney. The cavity was medial in relation to the kidney, and partially covered it. As for the bone, the right side of the pelvis was eroded everywhere, and its skeletal structure was reduced to a fretwork, or network, of thin bone. The acetabular cup had vanished, and with it had vanished the head of the femur. Through the perforation extended a large branch connecting the upper cavity with a cavity in the femur. The neck of the femur was tunneled by this, so that only the cortical part survived. In addition to the system of intercommunicating cavities on the right side, other separately encapsulated accumulations of the same material were discovered at the postmortem examination. One was a very large sac lying in the soft parts of the thigh, mainly posterior. It reached from the level of the upper end of the bone above nearly to the popliteal space below. Another was a sac between the spleen and the diaphragm, the top of the spleen forming its floor and the under surface of the

diaphragm forming its roof. A multilocular hydatid of the right lung was also present.

Medical Journal of South Africa, Johannesburg

December, 1919, 15, No. 5

Parasitized Kabeljaauw and Cape Salmon. W. W. Pitchford.—p. 101.
Venereal or Sexual Disease. C. Porter.—p. 104.
Tuberculous Meningitis and Lethargic Encephalitis. J. H. H. Pirie.—p. 109.

Journal of Tropical Medicine and Hygiene, London

Feb. 16, 1920, 23, No. 4

Toxoplasma Pyrogenes Castellani, 1913. A. J. Chalmers and A. Kamer.—p. 45.
Occurrence of Lateral Spined Bilharzia Eggs (Schistosoma Mansoni) in Urine. J. W. S. Macfie.—p. 45.
*Etiology of Pellagra. A. Viswalingam.—p. 46.

Etiology of Pellagra.—From careful observation, Viswalingam is lead to conclude that faulty diet, in itself, cannot cause "pellagra" and that there is a superadded infection. If diet should be the sole factor, then the effected individual should improve and there should be no recurrence when he is removed to a hospital and placed on liberal diet. But this is not so; therefore, apart from diet, sunlight, etc., there must be some other factor, probably a toxin. The habits of the people, the poor dietary, the extremely insanitary surroundings in which they live, the initial gastro-intestinal troubles, the condition of chronic fibrosis seen in the organs drained by the portal circulation, and many other minor factors, Viswalingam says, favor the view that the infection must be through the alimentary canal. Whether the infecting agent is an organism which enters the gastro-intestinal system and produces a toxin which is absorbed into the system and produces the varied symptomatology, or whether owing to a deficiency in the vitamins, some deleterious products are created in the intestines and give rise to an intoxication of the system, it is difficult to say at present. The seasonal recurrences of symptoms in patients removed from their surroundings and placed in a hospital with adequate diet for considerable periods of time, would point to the presence of an endotoxin resulting from the evolution of some organism or more probably the establishment of a vicious circle brought about by profound metabolic changes. Among predisposing causes are mentioned dysentery, ankylostomiasis, malaria and scurvy. Evidences of one or the other of those were present in at least 60 per cent. of the cases seen by the author.

Bulletin de l'Académie de Médecine, Paris

Feb. 3, 1920, 83, No. 5

*Lethargic Encephalitis. P. Marie and Mestrezat.—p. 103; Idem. C. Achard.—p. 106; Idem; P. Remlinger.—p. 112.
*Influenza and Pneumonic Plague. C. Broquet.—p. 116.
The Fight Against Tuberculosis. Coubard.—p. 119.
*Operative Treatment of Empyema. P. Peugniez.—p. 122.

Lethargic Encephalitis.—Marie and Mestrezat report that in their six cases the cerebrospinal fluid was almost completely normal. The lymphocytes numbered only from 8 to 26. Netter, on the other hand, noted considerable lymphocytosis on repeated examination. In one of his three cases, the number was 14, 16, 84 and 30 in nineteen days; in another 56, 118, 16 and 9, and in a third, pronounced lymphocytosis at first was followed by 60 and 24 in five days. Achard comments on the wide differences in the clinical pictures now encountered. One man had been having fever for ten days, with headache, a little delirium at night, but no paralysis, somnolency or other symptom. The twelfth day the characteristic somnolency of lethargic encephalitis developed. He says, "La maladie est polymorphe et acyclique." The mental, motor and general phenomena, however, in their various forms and combinations cannot be fitted into any of the frames of classic pathology. Others spoke of the appearance of the disease in Africa and Japan. A resolution was adopted appealing to physicians to report to the Académie the cases of the disease as they encounter them, specifying the address of the patients and the probable date of the onset, in order to centralize the data.

Influenza and Pneumonic Plague.—Broquet was sent to Indochina in 1911 to study the epidemic of plague, and he suggests the necessity for applying in prophylaxis of influenza the whole series of measures found effectual in arresting the spread of plague. They should include protection of the face, disinfection, aeration, forbidding of public gatherings, quarantine in the ports, vaccination of arrivals, and serotherapy against the known germs (Pfeiffer, pneumococcus and streptococcus).

Operative Treatment of Empyema.—In Peugniez' case the chronic empyema had followed influenza, and it was treated by Delorme's decortication, removing the thick fibrous shell over the lung which had shrunk back against the spine. The lung expanded at once, and the empyema was cured, but muscular paralysis of the left brachial plexus followed. It gradually subsided, and not a trace was left by the second month.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 16, 1920, 44, No. 2

Local Manifestations of Botulism. De Saint-Martin.—p. 52.
Diphtheric Paralysis with Meningeal Reaction. Du Camp and Carrieu.—p. 55.
Good Urea in Epileptics. H. Dufour and G. Semelaigne.—p. 58.
Sugar by the Vein in Nephritis. F. Rathery and H. Boucheron.—p. 61.
Intratracheal Medication in Acute Bronchopneumonia. Rathery and Bonnaud.—p. 63.
Hyperpigmentation and Lichen Planus in Mouth as Signs of Suprarenal Insufficiency. Crouzon and Bouttier.—p. 67.
Syphilitic Diabetes. Carnot and P. Harvier.—p. 71.
Primary Typhoid Cholecystitis. A. Panayotatou.—p. 76.
Analysis of Abdominogenital Nerves After Influenza. L. Moreau.—p. 81.

Ocular Manifestations of Botulinus Poisoning.—Four men developed the classic symptoms of botulism after eating from a can of smoked trout, and in addition they presented extreme and persisting congestion of the papilla and retina, with amblyopia. The optic nerve and retina lesions were still evident six months after, as also considerable contraction of the visual field for white and even more for other colors, but there was no scotoma or imperfect discrimination of colors. The asthenia also persisted exceptionally long. This and the torpor were so marked at first that the men could not leave their beds for almost three weeks. De Saint-Martin suggests that these comparatively severe and long persisting ophthalmoscopic findings may aid in the differential diagnosis of botulism at the time and even months later.

Meningeal Reaction with Diphtheric Paralysis.—Ducamp and Carrieu found only 5 leukocytes per cubic millimeter in the cerebrospinal fluid in the case described, although there was up to 2.4 gm. of albumin, and also 6.9 gm. sodium chlorid.

Varying Urea Content of Blood in an Epileptic.—The epileptic seizures developed for the first time after several injections of neo-arsphenamin, but they returned after suspension of the drug. They came on at night. The urea content of the blood had been between 0.25 and 0.40 per liter at other times, but a few hours before the seizure it ran up to 0.44, dropping nearly to the former figure next day. The intervals between the seizures were long, so the phenomenon could be studied well in the young woman.

Sugar Infusion in Nephritis.—Rathery and Boucheron cite literature which confirms the value of injection by the vein of a 30 per cent. solution of glucose as an excellent means for stimulating diuresis in appropriate cases. In grave toxic conditions it has often proved extremely useful, but some recent experiences warn that this measure is distinctly contraindicated in chronic nephritis with azotemia. In three cases studied in detail no diuresis followed; the output of urine decreased, and the azotemia increased, all the symptoms becoming aggravated.

Syphilitic Diabetes.—Carnot and Harvier report a case of diabetes in a woman of 53 with neurosyphilis in which necropsy showed the entire pancreas transformed into scleromatous tissue. The urine had been abundant and contained from 66 to 72 gm. of sugar per liter after two years. After the diabetic symptoms, a few days before death from pneumonia.

Primary Typhoid Cholecystitis.—Panayotatou relates that typhoid bacilli were cultivated from the pus in the gall-

bladder. There had been no symptoms from other organs or regions, and the fever had been of the cholecystitis type, not suggesting typhoid in any way, but the rapid and complete recovery after removal of the gallbladder confirms the causal connection. The case sustains the view that infection with the typhoid bacillus may induce other clinical pictures instead of the classic typhoid fever, analogous to the extrapulmonary manifestations of the pneumococcus.

Paris Médical

Jan. 24, 1920, 10, No. 4

*Influenza Pandemics. J. Teissier.—p. 69.
*Mishaps with Arsphenamin. Emery and A. Morin.—p. 80.

Jan. 31, 1920, 10, No. 5

Opening Lecture of Clinical Medicine Course. C. Achard.—p. 85.
Clinical Parasitology of Malaria. C. Paiseau and J. Hutinel.—p. 91.

Influenza Pandemics.—Teissier was sent to Russia in 1890 to study the pandemic of influenza, and his report in 1891 sums up equally well his conclusions from the recent visitation, namely, that some particular cosmic conditions suddenly enhanced the virulence of a pathogenic germ—probably some ordinary micro-organism—and this opened the portals to secondary infections. Only individual prophylaxis is effectual, with strict isolation of *les grippés*. He adds that although the cosmic conditions may enhance the virulence to a point beyond all means of defense, yet as a rule the malignancy is in ourselves. The exceptional mortality of the pregnant confirms this.

Mishaps with Arsphenamin.—Emery and Morin report a case in which the first injection of arsphenamin caused no disturbance, but forty-eight hours after a second injection, urticaria, joint pains and fever developed, as in serum sickness. The case stands midway, they say, between the major arsphenamin anaphylaxis (nitroid crises, serous apoplexy) and the minor manifestations (fleeting eruption and benign jaundice). These experiences suggest application of the principles of anti-anaphylaxis by preliminary injection of very small amounts before the main dose. They have been applying this method in a large number of cases, and say that although it conflicts with certain theories in vogue, yet the practical results are gratifying. Their method is to begin with 0.02 gm.; 0.03; 0.04; 0.05; 0.08; and 0.10 on successive days before beginning the course proper. Sicard has recently reported injection of daily doses of 0.3 gm. of neo-arsphenamin kept up for months, and none of the patients ever exhibited the slightest tendency to serious mishaps.

Presse Médicale, Paris

Jan. 31, 1920, 28, No. 9

*Serotherapy in Typhoid. A. Rodet and S. Bonnamour.—p. 81.
*Estimation of Chlorids in the Serum. Rodillon.—p. 85.
The Schick Test for Susceptibility to Diphtheria. M. Nathan.—p. 86.

Serotherapy of Typhoid.—Rodet and Bonnamour applied serotherapy to 246 typhoid patients, with complicating influenza in some cases, and they state that benefit was apparent in every stage of the disease, but was most pronounced when started early. The fever and the other signs of toxic action were distinctly abated; complications were warded off, and the mortality reduced. They were unable to give baths in their service, and the serotherapy effectually took the place of hydrotherapy. They add that the antiserum is harmless and there are no contraindications. It should be given at the first suspicion of typhoid, without waiting for bacteriologic confirmation. They injected it subcutaneously; exceptionally, by the vein, and would not hesitate to inject it intraspinally in typhoid meningitis. They wait forty-eight hours after the first injection, and still longer if the fever is going down. If it keeps high, or runs up again, they give a second injection at once and repeat after forty-eight hours. The dose of 15 c.c. seems the optimum; no better results were obtained with larger doses, and less than this is ineffectual. The mortality was 4.7 per cent. in the civilian service and 5 per cent. in the military until influenza appeared. After that the figures were 12.4 and 7.6, respectively.

Chlorids in the Blood.—Rodillon expatiates on the importance of determination of the chlorids in the blood as an

index of conditions in the kidneys. He commends as far superior to all other methods the Moog technic followed by the Charpentier-Volhard technics as very reliable and rapid. Exactly 11.7 c.c. of the filtrate after treating the serum with an equal volume of a 20 per cent. aqueous solution of trichloroacetic acid, is mixed with 10 c.c. of tenth-normal solution of silver nitrate and 50 or 60 c.c. of distilled water, and 10 c.c. of a saturated solution of ammonioferric alum. Then a tenth-normal solution of ammonium sulphocyanid is added from a graduated buret, agitating constantly, until a persisting red tint appears. The chlorid content in grams per liter serum equals the number of cubic centimeters of the sulphocyanid used.

Progrès Médical, Paris

Jan. 17, 1920, **35**, No. 3

- *Traumatic Suprapubic Hematoma. F. Cathelin.—p. 23.
Signs of Ulcer of Lesser Curvature of the Stomach. Loeper.—p. 25.
Tentative Chemotherapy in Tuberculosis. G. Salles.—p. 28.

Hematoma from Horseback Riding.—Cathelin remarks that unless one thinks of the possibility of a lesion of this kind, the differential diagnosis is difficult. The strain on the muscle occurs when vaulting on the horse. The pain gradually increases, and a large tumor develops behind the rectus abdominis. The hematoma subsides in a week or two under strict bed rest, with a compressing bandage and application of moist heat. In the eight cases described, the patients were all new recruits being trained for the cavalry.

Jan. 25, 1920, **35**, No. 4

- Operative Treatment of Pott's Disease. P. Barbarin.—p. 35.
*The Leukocyte Reactions. M. Loeper.—p. 37.
Concussion of Cervical Spinal Cord. A. Barbé.—p. 40.

The Leukocyte Reactions.—Loeper presents the prevailing assumptions on the nature and functions of the leukocytes, and mentions a number of personal experiments. In normal rabbits, for example, after injection of epinephrin, the polynuclears show a slight increase while the mononuclears decline. In a previously vaccinated rabbit, however, a similar injection causes the polynuclears to drop while the mononuclears run up to over 15,000. This type of cell seems to share essentially in the production of antibodies, and increasing numbers presage recovery and immunity. The leukocytosis induced by the fixation abscess (from subcutaneous injection of 1 c.c. of oil of turpentine) proved very useful during the influenza epidemic. He adds that some quite remarkable instances of its efficacy here have been published.

Schweizerische medizinische Wochenschrift, Basel

Jan. 22, 1920, **50**, No. 4

- *Influenza and Pregnancy. O. Beuttner and Vulliétty.—p. 61.
*The Gastric Mucosa with Ulcer. E. Fricker.—p. 63.
Improved Devices for Mechanical and Hot Air Treatment. Von Neergaard.—p. 68.

Influence of Influenza on Pregnancy and Childbirth.—Beuttner and Vulliétty state that 23.3 per cent. died of forty-seven pregnant or parturient women with influenza in their service. The mortality was highest in the cases in which the influenza arrested the pregnancy, abortion or premature delivery following the onset of the influenza. The younger age, and the first pregnancy, seemed to offer the greater dangers. When influenza developed postpartum, it ran a mild and uncomplicated course, probably owing to the hyperleukocytosis which is the rule in parturients. If this assumption proves to be correct, it suggests that the serum of parturients might possibly be used in treatment of influenza. The death rate among the prematurely born was 60 per cent. and 13 per cent. of those delivered at term, showing the noxious influence of the bacterial toxins on the fetus. The practical conclusions from these experiences are to ward off interruption of the pregnancy and, in treatment of the influenza, to refrain from quinin and other drugs liable to stimulate the uterus to contract. The gynecologist should warn pregnant women to keep away from sources of contagion, and perhaps it might be wise to advise women not to become pregnant during a period of epidemic influenza, "although," the writers add, "this advice may elicit yelps of indignation from many persons."

The Gastric Mucosa with Ulcer.—Fricker reproduces four photomicrographs of the true pathologic anatomic finding which are the rule with ulcer. The mucosa shows a chronic inflammatory atrophy much more regularly than hitherto assumed. This imposes the necessity for careful and prolonged supervision of the diet after operative measures. In one case of chronically recurring peptic ulcer in a robust man of 43, the mucosa showed extreme hyperemia, and stasis hemorrhages were common, but there was no thrombosis or embolism and no signs of bacterial invasion. His micrographs were all obtained from the living mucosa, while previous research in this line has been on the cadaver or on animals. One conclusion is evident, namely, that more than one cause may induce peptic gastric ulcer.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 30, 1919, **40**, No. 96

- Necessity for Propaganda Against Tuberculosis. C. Molon.—p. 104.
*Atypical Epidemic Meningitis; Two Cases. G. Salvetti.—p. 1043.

Atypical Epidemic Meningitis.—In Salvetti's two cases the onset was insidious, suggesting ordinary influenza at first. There was no vomiting, and the mind was clear throughout except just before death in one case. The temperature was always relatively low, and the lumbar puncture fluid seemed to be normal except for slight turbidity only at the first or second puncture, but the meningococcus was cultivated from the fluid in both cases. The fatal outcome in one case was surprise after the extremely mild course in both.

Policlinico, Rome

Jan. 5, 1920, **27**, No. 1

- *The Facial Nerve in Epileptics. L. Roncoroni.—p. 3.
*Malarial Orchitis. E. Vecchia.—p. 6.
*Tuberculosis in Relation to Life Insurance. I. Romanelli.—p. 9.

The Facial Nerve in Epileptics.—Roncoroni calls attention to the hyposthenia of the innervation of the face in certain persons, saying that he has found it most pronounced in epileptics. Hyposthenia in other nerves may explain certain phenomena observed in other conditions, he suggests.

Malarial Orchitis.—Vecchia's patient was a youth of 19 with a history of old malaria, but no attacks for a year. Then suddenly intense fever and chills developed, with pain in the scrotum. Gonorrhea or mumps were suspected until the malaria parasite was cultivated from the blood, and under quinin the orchitis and the febrile attacks subsided.

Tuberculosis in Relation to Life Insurance.—Romanelli analyzes May's recent report on this subject, and compares the conclusions with his own experience, which suggests the advantage of postponing acceptance of a candidate who has recently had a tuberculous process in a bone or joint, in the urinary apparatus or peritoneum. In 75 per cent. of the cases, when pulmonary tuberculosis developed later the interval was not over three years. With a clinically cured pulmonary lesion, he warns that there may be still fire under the ashes, and a trauma or infectious disease may fan it into a flame. This occurred in many cases during the influenza epidemic. A ten year interval, however, is a good guarantee, other things being equal, with a progressively decreasing extra risk premium.

Riforma Medica, Naples

Nov. 15, 1919, **35**, No. 46

- Chaulmoogra Oil. A. Valenti.—p. 994.
*Ataxia of the Aorta. O. Cantelli.—p. 995.
*The Metabolism in Nephritis. A. Barlocco.—p. 1003.

Remittent Ataxia of the Ascending Aorta.—Cantelli applies this term to a set of symptoms observed identical in three cases. The symptoms were directly connected with transient disturbances in the innervation of the ascending aorta, the clinical picture being that of an aneurysmatic dilatation of the ascending aorta: systolic fremitus, and harsh systolic murmur, heard in the second right interspace and spreading along the vessels, and a protodiastolic murmur of endocardial origin, spreading to the apex, loudest at the focus for auscultation of the aorta. The assumption that the whole syndrome was of nervous, functional origin was

med by the abrupt subsidence of all the symptoms after a longer or shorter interval, and independently of any medicinal treatment. This behavior of the ascending aorta, especially when accompanied by symptoms resembling those of angina pectoris, bears the imprint of a sympathetic neurosis of that part of the vessel, in the same way as the lack of pain in the celiac plexus and pulsation and ectasia of the abdominal aorta represent the principal manifestations of the sympathetic neurosis of this part of the body. His patients were a woman of 42 and two men of 60 and 34. In the woman the attacks had always occurred just before the menses, and there were other signs of vasomotor instability, tremor and tachycardia. The older man was a bon vivant, without a trace of atherosclerosis of the myocardium, and only the complete subsidence of all the symptoms in two months and the return later of the whole syndrome, excluded actual aneurysm. The man of 34 had long had a mild syphilitic aortitis when suddenly the symptoms of ectasia of the aorta developed, with the other signs described above, but all disappeared in twenty days without leaving a trace, after absolute repose was enforced, with a suitable diet. Cantelli devotes nearly nine pages to discussion of the mechanism, emphasizing anew in conclusion that the ataxia subsided in his cases without any drugs.

Metabolism in Nephritis.—Barlocco reviews what others have been doing in study of the intermediate and external metabolism by Bang's micromethods applied to the blood. He compares with their results his own findings in a number of healthy controls, and in ten patients with nephritis studied until death. With sound kidneys the total nitrogen in the blood ranged from 0.027 to 0.046 per cent. and the urea nitrogen from 0.013 to 0.027 per cent. The ratio between the two, dividing the urea nitrogen by the total nitrogen, was between 35 and 60 per cent. The ureosecretory constant ranged from 0.062 to 0.106. In health, 15 gm. of urea, added to an ordinary diet, is eliminated in twenty-four hours. The solids in the blood amount to 3.20 or 3.80 per cent. and the urea to 0.075 or 0.120 per cent. The differences between these figures and those obtained in his numerous cases of various forms of nephritis are discussed, as they serve to distinguish the different types. They emphasize the folly of attempting to study a case of nephritis from the whole blood and the urine alone.

Rivista Critica di Clinica Medica, Florence

Sept. 27, 1919, 20, No. 39

Conjugated Deviation of Head and Eyes in Brain Disease. L. Siciliano.—p. 457.

General Principles of Diet in Nephritis. Fornaseri.—p. 460.

Erythema Nodosum in Relation to Tuberculosis. Pisani.—p. 463.

Enlargement of Glands as Aid in Diagnosis. Fornaseri.—p. 465.

Deviation of Head and Eyes in Brain Disease.—Siciliano's arguments favor Flourens' explanation of the mechanism for rotation in the semicircular canals.

Gaceta Médica de Caracas

Nov. 30, 1920, 26, No. 22

Phlegmasia Alba Dolens in Typhoid. Villegas Ruiz.—p. 235.

Phlebitis in Typhoid.—Villegas described two cases of phlegmasia alba dolens which developed during convalescence from typhoid, the only instances of the kind he has encountered in his thirty-two years of practice and his hundreds of typhoid cases. The left thigh was affected, and in Archison's fifteen cases the phlegmasia was on the left in fourteen. In the discussion that followed, four other physicians referred to a total of seven cases in their practice. Villegas mentioned also phlegmasia of other origin; he has encountered a comparatively large number of puerperal cases. In certain other cases the phlegmasia was the warning sign of visceral cancer. In one case he accepted the phlegmasia alba dolens as pathognomonic of a cancer of the liver while other consultants insisted that the trouble was hypertrophic sclerosis of the liver, but time confirmed his diagnosis. Rousseau diagnosed in himself the gastric cancer, to which he succumbed later, by the appearance of an insidious phlebitis in the dorsum of one hand. In treatment Villegas

has found electric light baths useful, but absolute immobility of the limb is the main thing. Tachycardia often occurs with the phlegmasia, and in Razetti's case the tachycardia persisted long afterward and the young woman finally died suddenly, possibly from embolism.

Prensa Médica Argentina, Buenos Aires

Jan. 10, 1920, 6, No. 22

*Rupture of Bladder. A. F. Celesia and A. Buzzi.—p. 225.

*Vicious Circle after Gastro-Enterostomy. N. Tagliavacche.—p. 226.

*Dissociated Elimination of Bile Elements. C. P. Waldorp.—p. 227.

Improved Slanting Curet. E. Finochietto.—p. 230.

*Arrhythmias. P. M. Barlaro.—p. 231. Conc'n.

Rupture of the Bladder.—The two cases reported by Celesia and Buzzi were admitted to the hospital within twenty-four hours. The posterior wall of the bladder had ruptured in each case, in one from a fall, in the other probably in consequence of overdistention from fluid, self-injected, in treatment of acute gonorrhea. In this latter case no urine could be extracted with the catheter in the bladder, but in the other case the catheter had evidently found its way through the breach in the wall into the peritoneum, and quantities of blood-stained urine were evacuated. The shock and tenesmus were extreme in both, but a prompt laparotomy was followed by recovery.

Vicious Circle After Gastro-Enterostomy.—The man of 42 had had periods of gastric disturbance since the age of 20, and he finally had gastro-enterostomy done. This was followed by a period of tranquillity for seventeen months, when the disturbances began anew. An anastomosis between the afferent and efferent loops arrested the vicious circle, but a peptic ulcer with involvement of glands was deemed inoperable. The afferent loop was 30 cm. long, and the opening was not at the lowest point of the stomach and was too far to the left. Another defective feature of the technic was that the anastomosis ran from left to right.

Dissociated Elimination of Elements of the Bile.—Waldorp classifies the different forms of jaundice from complete or partial retention of all the elements of the bile and the jaundice with isolated retention of bile pigments or of bile salts. Hemolytic jaundice is the perfect type of the latter group, but it includes also catarrhal jaundice in the active stage, and some cases of jaundice from cirrhosis, or from infectious or toxic disease of the liver; it may possibly include likewise the early phases of the other group. With alcoholic cirrhosis there may be no sign of toxic retention as manifested by pruritus and bradycardia but the blood dust is scanty, and the Hay and Pettenkofer reactions are usually positive. Intercurrent infection or abuse of alcohol or other toxic action is liable to induce a phase of exaggerated retention and hence augment the jaundice temporarily. Brault and Garban investigated for retention of bile in long series of patients, and found it in some persons who gave no evidence of jaundice but had tuberculous, malarial or other form of liver disease. In typhoid also there may be retention of bile salts, with urobilinuria, as also in pneumonia in male adults, and in all persons with chronic poisoning from any cause. Brulé warns that retention of bile elements with appendicitis suggests that the liver is vulnerable, and hence should not be subjected to the strain of chloroform. The bile salts are also liable to be retained during pregnancy, the retention increasing as the pregnancy progresses, and ceasing after delivery.

The Arrhythmias.—Barlaro entitles his article a "brief" study of the arrhythmias, but it has been continued through a long number of issues. He recalls that treatment must be based on the special form of the arrhythmia and on the occasional cause. To illustrate the imperative necessity for seeking the cause he tells of a case in which an attack of fainting, palpitations, arrhythmia and bradycardia resisted the entire battery of heart tonics and stimulants but subsided promptly under a purge and restriction to water, a dish of green peas being responsible for the whole disturbance. In one woman the diagnosis of myocarditis as responsible for the arrhythmia was changed later to arrhythmia from impacted gallstones, and extraction of the stones put an end

at once to the arrhythmia. Besides removing the cause and treating stomach, bowel and gynecologic disease which may be a contributing factor, it may be wise to soothe the over-excitable nervous system and give tonics. Valerian and belladonna are often useful, the latter reducing reflex action from the stomach, the most frequent cause of extrasystolic arrhythmias, while it moderates the excitability of the heart. Heart tonics are liable to exaggerate the arrhythmia, but in paroxysmal tachycardia, digitalis well managed may give fine results, as also strophanthin with pulsus alternans and perpetual arrhythmia. Organ extracts may prove surprisingly effectual in appropriate cases, and antithyroid serum with hyperthyroidism. If the dropping of tea, coffee or tobacco is not soon followed by improvement, the cause must be sought elsewhere. Brilliant cures may be realized with mercury and iodid when syphilis is responsible, and the latter drug may render good service with sclerosis in vessels or elsewhere. In some cases tuberculin may prove extremely useful. With paroxysmal arrhythmia, drinking or eating something may help in arresting an attack, by the reflex from swallowing; or compression of the pneumogastric nerve may stimulate it to inhibit the excessive action of the heart. Tickling the pharynx or other means to induce nausea and vomiting may arrest the attack in some persons; in others this may aggravate it. The condition of the heart muscle must be supervised, and venesection, revulsion, purges, and diuretics applied as indicated.

Reforma Médica, Lima

October, 1919, 5, No. 62

*Treatment of Eclampsia. P. Villanueva.—p. 116.

Eclampsia.—Villanueva as a last resort in a case of convulsions from uremia in a man of twenty-eight with advanced chronic nephritis, injected sodium bicarbonate by the vein. The result was surprisingly good, the convulsions subsiding, and the acute phase was soon past. He applied this same treatment in a case of puerperal eclampsia in which the convulsions and anuria had kept up after venesection and evacuation of the uterus. Four hours later the convulsions abated, the catheter drew 150 gm. of urine, and the general condition seemed more hopeful, showing that at least the 50 gm. of the saturated solution of sodium bicarbonate by the vein had done no harm. He repeated the infusion, giving 100 gm., and applied lumbar puncture. By the next morning the patient was out of danger. This experience has been confirmed in eleven other cases in the last five years, prompt improvement following the combination of venesection, lumbar puncture and the alkaline infusion, with copious intake of fluids. He urges others with laboratory equipment to confirm his merely clinical assumption that acidosis is responsible for eclampsia, at least in certain cases.

Revista Española de Obstet. y Ginecología, Madrid

December, 1919, 4, No. 48

*The Placenta as Blood-Producing Organ. P. Domingo.—p. 545.

The Placenta as a Blood-Producing Organ.—Domingo reports extensive research on the early stages of the evolution of the embryo, the origin of the first blood cells, etc. His conclusions differ in certain respects from those hitherto accepted.

Siglo Médico, Madrid

Dec. 27, 1919, 66, No. 3446

Repeated Laparotomy. A. Morales.—p. 1114.

*Essential Incontinence of Urine. F. González Aguilar.—p. 1116. Concluded in No. 3449, p. 37.

Incontinence of Urine.—González reiterates that thorough study of the child will almost invariably reveal some explanation for the enuresis in some hitherto overlooked disease or some anomaly that may possibly be corrected. Only when all such can be positively excluded are we justified in labeling the case as essential incontinence. Treatment should aim to reduce the irritability of the bladder or stimulate the atony of the sphincter, according to the case. The diet should be extremely nourishing and digestible, and of the smallest bulk possible. Overstarched or overtight clothing, powder-

ing, and dirt may maintain the tendency to incontinence. In two of his cases it was cured by constant vigilance rendering masturbation impossible. He lauds epidural injection of physiologic artificial serum as one of the most valuable measures in treatment of enuresis, and never hesitates to apply it when belladonna, strychnin and electricity fail. Any practitioner, he says, can give the epidural injections using from 5 to 10 c.c.; for children under 12 not more than 3 c.c. Inunction in the pubic region twice a day of a drug to soothe the peripheral nervous system has sometimes aided. Courtade has reported 55 per cent. cured and 85 per cent. much improved by the induced electric current, but González advises reducing the intermittences to one a second. This stimulates instead of fatiguing the muscles, and he always is guided by the patient's tolerance. He applies the electricity for five or six minutes every day at first, and later every second or third week. In concluding his long study of incontinence, he mentions Bounier's success in otherwise intractable cases by modifying the excitability of the bulb by cauterizing certain portions of the nasal mucosa.

Berliner klinische Wochenschrift, Berlin

Nov. 17, 1919, 56, No. 46

What the Influenza Epidemic Has Taught Us. B. Möllers.—p. 108.

*The Capillary Pulse in Infectious Diseases. L. Lichtwitz.—p. 1083.

*Use of Orthoform in Psychiatric Cases. W. Böttcher.—p. 1084.

Friedmann's Treatment of Tuberculosis. E. Bloß.—p. 1084.

Relations of the Autonomic Nervous System to Striated Muscles. Frank.—p. 1090. Conc'n.

The Capillary Pulse in Infectious Diseases.—From a series of observations Lichtwitz reaches the conclusion that the capillary pulse in fever is not the result of increased heart activity, elevated temperature, or rubedo, but is due to a disturbance of peripheral circulation in the region of its appearance brought about by a toxic injury of the arterioles and capillaries. He was not able to discover that the phenomenon has any prognostic significance.

The Use of Orthoform in Psychiatric Cases.—Böttcher has found orthoform of great value to allay itching in pruritus vulvae et vaginae in psychiatric cases. He uses ordinary a 10 per cent. ointment. The anesthetic effect of the orthoform continues for from ten to thirty hours, which is a valuable feature in dealing with psychiatric patients, who become impatient and work harm to themselves if the itching is not promptly allayed.

Deutsche medizinische Wochenschrift, Berlin

Nov. 27, 1919, 45, No. 48

*Problems in Paralysis and Tabes Therapy. F. Plaut.—p. 1324.

*The Pathogenesis and Treatment of Bed-Sores. Wieting.—p. 1324.

Side-Effects of Silver Salvarsan. G. L. Dreyfus.—p. 1326. Conc'n

*Influenza and Pregnancy. E. J. Schmitz.—p. 1328.

*Scleroderma in Relation to the Endocrine Glands. W. Roesch.—p. 1329.

Experimental Tuberculosis of the Eye and Active Immunization of the Friedmann Method. F. F. Krusius.—p. 1330.

"Nirvanol" Poisoning. Charlotte Jacob.—p. 1331.

Mites in the Feces of Man. H. Westphalen.—p. 1333.

*Emphysema Therapy. Heermann.—p. 1333.

Recent Problems in Paralysis and Tabes Therapy.—Plaut says that the fact that familial paralysis and tabes are comparatively rare is opposed to the assumption of a peculiar type of spirochete the mere presence of which in a subject would cause syphilitic paralysis or tabes. The changes that regularly occur in the spinal fluid during the secondary stage of syphilis are usually followed by normal conditions whether specific treatment is given or not, so that it hardly seems likely that these changes are to be regarded as the foundation for the later development of paralysis or tabes. In the case of a few syphilitics, however, the spinal fluid continues to show pathologic changes even after many years. Whether the paralytics develop from this class can only be shown by a long series of investigations. He avoids mercury entirely in the treatment of paralysis, and for the treatment of tabes he prefers salvarsan to mercury. Salvarsan is ordinarily not indicated in syphilitic paralysis, as it does not stay the progress of the disease, but, he thinks, it may be well to use it in the initial stages owing to the danger of a false diagnosis of paralysis being made when in reality

it is a genuine case of syphilis of the brain. He denies that salvarsan used in syphilitic paralysis causes paralytic attacks, untoward mental and physical reactions, and even symptoms resulting in death. One symptom of paralysis usually yields to salvarsan, that is, the increase in the number of cells in the spinal fluid. Intraspinous injections in syphilitic paralysis have not proved effectual, he continues. In tabes, however, intraspinal injections exert a favorable influence on the pain, the crises, paresthesia, bladder trouble and ataxia, and should be used unless intravenous therapy, which should always be tried first, has already brought about reasonable symptomatic improvement. Whether intraspinal mercurial treatment will prove efficacious in paralysis and tabes remains to be seen. The fact that paralytics often receive at least temporary benefit from induced febrile processes has long been known, and of late Vienna physicians have scored considerable success in this mode of treatment. Plaut has seen no noteworthy improvement following the use of vaccines in syphilitic paralysis and, in general, the results of the various forms of treatment in paralysis and tabes are far from satisfactory, but with earnest collaboration of clinicians, experimental pathologists, anatomists, serologists and chemists, he hopes for progress in the future.

The Pathogenesis and Treatment of Bed Sores.—The matter of bed sores has been left too much to nurses, Wieting thinks, and many physicians are inclined to assume an indifferent attitude, from which great harm results. His investigations as to the fundamental origin of bed sores have led him to the conclusion that the pressure causing the necrosis or gangrene is exerted from within and not from without, as is commonly supposed. Aside from cases in which the epidermis or cutis has been injured directly by thermic, chemical or mechanical causes, only disturbances of the blood supply can bring about necrosis of the skin, and these disturbances are caused by the more or less complete occlusion of blood vessels by pressure continued too long in one spot, whereby an anemic condition of the more sensitive subcutaneous and deeper-lying tissues is effected. It is evident, therefore, that the subcutaneous tissues suffer more and earlier than the skin; their necrosis precedes that of the skin. While admitting that there are cases in which decubitus cannot be avoided even with the best of care, he believes that many cases that occur are avoidable. Besides the ordinary measures—such as change of position, absolute cleanliness, rubbing with alcohol, the use of rubber rings, water cushions, underlay of cotton—he thinks more recognition should be given to the continuous water bath in the more serious cases. The patient may be suspended for hours at a time in a warm bath, in which he is supported by a bed sheet or a hammock. Frequently suspension apparatus may be indicated, as in the case of wounds of the heel or the lower leg. In the matter of bed sores hypurgia plays a big part, that is, the sum of the minor factors that make for prophylaxis and recovery. Even the placing of a rubber ring cushion so that the pressure will be taken off a certain spot is not such a simple matter as it may seem to some.

The Effect of Influenza on Pregnancy.—Schmitz reports that in Germany it was often noted with surprise that the strongest persons seemed to have no more, but perhaps even less, resistance than the weaker. He takes this as only an indication how primitive our ideas are concerning the meaning of the term "constitution." We are too much inclined to assume that a sturdy frame and a well developed musculature must necessarily presuppose extra resistance of the organism to infection. Our knowledge of individual differences in matters of morphology, the ability of cells to react, and the ever changing content of protective substances in the body fluids is still too indefinite for us to do more than speculate in regard to comparative immunity. An illustration of this is Fischer's assumption that sturdy persons have too many antibodies, and that their lack of resistance is due to the fact that they kill off the invading germs too rapidly, and thereby overload the body with liberated toxins, or Grabisch's hypothesis that healthy persons have less capacity to produce antibodies because they are, in the nature of the case, less exposed to infections. On the other hand, the effect

of pregnancy on the course of influenza is not a matter of speculation. It is entirely too evident. Of thirty-seven pregnant women in his service, nearly 46 per cent., died. The mortality among the nonpregnant was only 12.5 per cent. Aside from the changes in the respiratory mechanism and the impeding of the circulation, Schmitz thinks that one possible explanation of the unfavorable effect of pregnancy on influenza lies in the physiologic swelling in pregnancy of the mucous membrane of the respiratory organs.

Scleroderma in Relation to Disease of Endocrine Glands.—Roesch reports a case of generalized scleroderma, in the indurated stage, in a young woman with symptoms of abnormal thyroid and suprarenal functioning. He concludes therefrom that scleroderma may possibly be caused by disturbances of function in one or more of the glands of internal secretion.

Treatment of Emphysema.—Heermann recommends, as an effective therapeutic device in emphysema, an elastic rubber bandage, from 4 to 5 cm. wide, buckled about the chest at the level of the short ribs. He finds it aids expiratory movements and produces a feeling of comfort and relief. It is worn during the day—continuously, if possible. The good effect is soon shown by the increase in lung expansion and the remission of symptoms in the lungs and throat.

Münchener medizinische Wochenschrift, Munich

Nov. 14, 1919, 66, No. 46

- *Chronic Lethargic Encephalitis. C. von Economo.—p. 1311.
- *Effect of Roentgenotherapy on Retarded Growth. E. Stettner.—p. 1314.
- Deep Thermometry. I. B. Zondek.—p. 1315.
- Conditions Governing the Course of Tuberculosis. H. von Hayek.—p. 1316. Cont'n.
- *Influenza in Relation to Pulmonary Tuberculosis. W. Amelung.—p. 1321.
- Chronic Appendicitis and Pathologic Condition of Adnexa. M. Graefe.—p. 1322.
- *Utilization of Surplus Human Milk. Marie Kayser.—p. 1323.
- Concentration of Rays in Heliotherapy. C. Widmer.—p. 1323.
- *Composition of the Blood in Arid Climates. A. Bickel et al.—p. 1324.

Chronic Lethargic Encephalitis.—Economo reports a case of lethargic encephalitis in a man of 45, which ran a long course, from April 5, 1917, to Jan. 7, 1919, when death ensued. The onset was acute. Periods of remission occurred, only to be followed by ever more violent attacks. The clinical diagnosis was pseudobulbar paralysis, with athetosis, following lethargic encephalitis. The necropsy findings were: hypostatic pneumonia in the right inferior lobe, atrophy of organs, parenchymatous degeneration of the myocardium, cachexia, no macroscopic changes in the central nervous system. The microscopic examination revealed extensive evidence of a poliomyelitis. In addition to the older lesions, there were several recent lesions of an acute type. Economo assumes that the virus of lethargic encephalitis after the first acute attack was not completely eliminated but continued to act on the central nervous system, setting up a chronic condition, with occasional exacerbations, carrying on its gradual work of destruction resulting in death. He compares the case to the rare cases of chronic anterior poliomyelitis following the acute form. It also seems to throw a sidelight on multiple sclerosis. Economo refers also to a mild epidemic of lethargic encephalitis that occurred in Vienna nearly two years before the first wave of the influenza epidemic, which, he thinks, supports the idea that it is a distinct disease, and refutes the claim that it only follows influenza. It would be a serious mistake to term the disease influenzal encephalitis as its causal connection with influenza is still uncertain.

Favorable Effect of Roentgenotherapy on Retarded Growth.—Stettner states that in cases of retarded growth due to disease such as chronic parotitis, or to constitutional anomalies such as status lymphaticus, he has been able, within a few months, to make up for a deficiency equal to several years of normal growth. In the two reported cases the retarded growth manifested itself in the lack of ossification centers; in one the bones had developed normally in length. In both cases the incited growth was accomplished by means of roentgenotherapy applied to the head, and doubtless particularly affecting the hypophysis in one case. The condition

of the bones of a child as shown by roentgenograms is a factor to be weighed in judging of the child's general condition. Stettner considers his results important as indicating the possible effect of roentgen rays on the organs of internal secretion. Three and five sittings were given in the course of four months and seven months, respectively.

Influenza in Relation to Pulmonary Tuberculosis.—Amelung's observations and investigations lead him to conclude that the influenza morbidity among patients with pulmonary tuberculosis is slight; that influenza takes a milder course in such patients than in the nontuberculous, unless the tuberculosis is far advanced; that tuberculosis of the lung may and sometimes does follow influenza in patients whose lungs were previously sound, and that in the last mentioned cases the prognosis is relatively bad. A theoretical explanation of the reciprocal relationship that exists between influenza and tuberculosis may be that the organism of tuberculous patients is from the start in a state of defense, whereas the healthy subject is taken unawares in a state of unpreparedness, and is swept away before he can mobilize his antibodies.

Utilization of Surplus Human Milk.—Marie Kayser describes in detail a system introduced in Magdeburg during the war by which surplus human milk was collected in the homes and utilized in hospitals and elsewhere for feeding to weakly and needy infants. The milk of healthy mothers, only, was used. In the nature of the case, Wassermann tests could not be made, but as the milk was always carefully boiled before it was used, it was assumed that infection was no longer to be feared. Boiling lessened the value of the milk so collected, but it was in any event better than boiled cow's milk for the infants for whom it was utilized.

The Composition of the Blood in Arid Climates.—Bickel, Loewy and Wohlgemuth refer to Grober's article on this subject, an abstract of which appeared in *THE JOURNAL*, Jan. 31, 1920, p. 365. From his examination of the blood of natives of Tunis, Grober had reached the conclusion that such a thing as urinary substances being given off from the blood in secretions, for instance, through the sweat glands, was an impossibility. Bickel and his co-workers state that Grober's conclusion was not justified. The fact that the blood of natives of Tunis is essentially the same in its composition as that of Europeans living in Europe is no proof, they think, as to whether or not the arid climate has any effect on the blood, much less that it may not exert a definite effect on metabolism which is concealed by compensatory processes in the blood. For example, it might well be true that marked changes occur in the sodium chlorid output and in the nitrogenous waste eliminated from the blood, while the blood still retained its usual percentage of these substances. Furthermore, there might be marked shifting in the proportionate amount of urinary substances eliminated by the kidneys and the skin, without evidence of this fact being necessarily present in the blood. In order to decide such questions as these, concurrent investigations on metabolism should be made; quantitative determinations of the elements of the urine, and also determinations of the amount and composition of the skin exudations, with due consideration of the nature of the food consumed. They also think that Grober should have examined the blood of Europeans living in Tunis, in order to draw just conclusions as to the indications of arid climates for Europeans suffering from kidney disease.

Therapie der Gegenwart, Berlin

November, 1919, 60, No. 11

- *One-Sided Diets. M. Jacoby.—p. 401.
- *Nonspecific Serotherapy of Diphtheria. M. Albrecht.—p. 404.
- Quinin Alkaloids as Antiseptics. S. Ostrowski.—p. 407.
- Testing the Eyes for Glasses. Fehr.—p. 416. Conc'n.
- General Principles for Treatment of Digestive Diseases. G. Klemperer and L. Dünner.—p. 420.
- *The Alcohol Question. J. Waldschmidt.—p. 425.
- Syringe for Intravenous Injections. R. Offenbacher.—p. 437.
- Treatment of Sprained Ankle. K. Gerson.—p. 438.

One-Sided Diets.—Jacoby remarks in concluding his study of this subject, that the terms vitamins, nutramins and accessory nutrients are about synonymous with each other,

and with oryzanin. Eutonin seems to be the organic base which is the mother substance of the others.

Treatment of Diphtheria.—Albrecht suggests that Bingel's plea to use normal horse serum, instead of antitoxin, has served to focus attention anew on the great changes induced in the organism by serum alone. But it has served most of all to emphasize anew the immense value of antitoxin, and that nothing can approach it.

The Alcohol Question.—Waldschmidt agrees with those who think that some inherited predisposition turns the scale so that one person becomes an addict and another not. The drunkard is "born, not made." The sound brain repudiates the abuse of alcohol. From prehistoric times and in all races there have been stimulants of different kinds, and it seems as if the human race cannot get along without them, but the more dangerous ones, he insists, should be prohibited.

Therapeutische Monatshefte, Berlin

September, 1919, 33, No. 9

- *Pharmacology of the Treatment of Wounds. III. S. Loewe and G. Magnus.—p. 321. Conc'n.
- By-Effects of Some New Narcotics. R. Meiszner.—p. 332.
- *Treatment of Fractures in the Aged. C. Heinemann.—p. 335.
- Whooping Cough. A. Kötz.—p. 341.
- *Acute Addison's Disease Following Influenza. Brünecke.—p. 354.

Treatment of Wounds.—Loewe and Magnus present a long series of arguments striving to restore a more pharmacologic view of the treatment of wounds, instead of the excessive bacteriologic view that has prevailed of late.

Fractures in the Aged.—Heinemann tabulates the details of twenty-two cases of fracture, mostly of the femur, in men and women from 61 to 78 years old. He affirms that the physician's task is more to keep the aged patient alive, than to cure the fracture. The patient must not be chained to the bed for more than a few days at most, consequently, a light plaster cast is preferable for immobilization. It should leave as much of the limb free as possible. When the fractured stumps have been driven into each other, a cast may sometimes be dispensed with; the patient can be got up with crutches or a walking frame. The getting the patient out of bed is the main thing, after the first shock is past. Lying in bed mechanically impedes the functioning of the autonomic system, and depresses the vital energies. In other pathologic conditions, the elderly can keep fairly well, even lying in bed, by exercising the legs and arms while reclining, but this is impossible with a fractured limb. Systematic breathing exercises, after the patient is up, help to maintain the circulation and ward off atrophy, and they benefit in other ways. Tepid baths under medical oversight are also useful. In his 22 cases a complete functional cure was realized in 11, and improvement in all the others, except in one fatal case of fat embolism. This patient, a woman of 62, had been long kept in bed after the lengthwise fracture of the femur. Only 7 have to use a cane, and 2 others, one or two crutches.

Acute Addison's Disease After Influenza.—Brünecke reports this case to call attention to the prompt benefit from treatment with partial antigens. Tuberculous lesions in the glands in the neck had suggested the advisability of this treatment for the girl of 12.

Wiener klinische Wochenschrift, Vienna

Nov. 27, 1919, 32, No. 48

- *Roentgen Treatment of Hypertrichosis. G. Holzknecht.—p. 1149.
- *Treatment of Gunshot Wounds of Joints. H. Salzer.—p. 1151.
- *Arthritis Due to Foreign Body. M. Hirsch.—p. 1154.
- Multiple Laceration of the Sigmoid Sinus. O. Beck.—p. 1155.
- Treatment of Old and Ulcerating Wounds. H. Deutsch.—p. 1157.
- *Observations on Ophthalmomyiasis. W. Goldschmidt.—p. 1159.

Roentgen Treatment of Hypertrichosis.—Holzknecht discusses the psychologic reasons why hypertrichosis in women should be treated, and describes in detail his method of roentgenotherapy with which he has been very successful. In some of the cases he describes, the women had tried to commit suicide on account of the disfigurement from the growth of hair on the face.

Treatment of Gunshot Wounds of Joints.—Salzer states that since there is no uniform method of treating joint

injuries, it is desirable that surgeons should give the results of their experiences in this field of surgery in order that out of the common experience of all a uniform method may be gradually worked out. In gunshot injuries of joints in which the bones were not seriously involved and in which the wounds had closed without reaction, he proceeded as follows: The joint was punctured and the fluid was drained off; from 3 to 5 c.c. of tincture of iodine was then injected and a light protective bandage was applied. This procedure was repeated, if necessary, two or three times. In 14 cases of gunshot wounds of the knee joint treated in this manner the patients were dismissed in about twelve days, the joint showing a good degree of motility. In one case, however, suppuration developed, rendering an operation necessary. On the other hand, if the wounds were lacerated and oozing, thorough débridement was done, the joint was cleansed with sodium chlorid solution, then completely sutured and tincture of iodine injected. After about sixteen days 7 such cases were dismissed in good condition. In another case, however, sepsis and periarticular abscesses occurred, which necessitated amputation at the thigh. In this case, owing to the pressure of work at the front, through an oversight, débridement and suturing of the wound of entrance had not been done. A total of 40 joint wounds (38 knee joints, one elbow and one shoulder joint) came up for treatment. In 3 cases primary amputation was required; in the other 37 cases the simple method described above was employed. In 7 cases secondary amputation became necessary. The remaining 30 were dismissed with fairly movable joints. There were no deaths. The last fatal case resulting from a joint injury dated back to the time when, though tincture of iodine was employed, primary suturing of the wound was not undertaken. While admitting that the results were not ideal, Salzer maintains that they were at least much better than had been secured under the conservative treatment. An important advantage of this method was that the patients suffered much less pain.

Foreign Body Arthritis.—Hirsch reports a case of arthritis of twenty years' standing due to the presence of a fragment of a needle in the knee joint. In spite of the fact that the joint had been frequently swollen and painful, after the needle was removed complete recovery followed in four months. Hirsch concludes, therefore, that in any disease affecting the knee joint the presence of a foreign body should be given diagnostic consideration. In his case the arthritis had been first of the intermittent hydrops type and later of the spongy, granulation type. This latter aspect should suggest the possibility of a foreign body.

Ophthalmomyiasis.—Goldschmidt describes his experience with 100 cases of ophthalmomyiasis in a river region in Russian Turkestan, central Asia. In the summer of 1915 a prisoner of war presented himself complaining of a foreign body in the left eye. The eyelids were swollen and inflamed. Examination revealed living organisms in rapid motion spread over the surface of the conjunctiva. There were from eighteen to twenty of such yellowish white organisms of varying length (from 0.25 to 1.5 mm.). Most of the larvae were removed by rinsing out the eye. Some of them, however, had burrowed into the cornea, and had to be removed with a swab, which was only possible after cocaine had caused them to loosen their hold. The patient developed, as a result, a keratitis with hypopyon, which healed leaving maculae and synechiae. The larvae were preserved in alcohol and were pronounced by Dr. Kuznetsoff, a Russian physician who had been practicing in the vicinity for a number of years, to be *Sarcophila magnifica Schineri (Wohlfarti)*. Goldschmidt had occasion to remove similar larvae from the eye in 100 other cases and learned that this ophthalmomyiasis was not uncommon. He says that a fly in its flight will often scrape off from sixty to seventy larvae onto the eyelid. The larvae display a tendency to burrow into the eyeball, and have been known to destroy it completely within forty-eight hours. Or after weeks of suppuration the end-result is atrophy of the eyeball, which is permeated with scars. Kuznetsoff had not known of any fatal cases such as have been reported by others, resulting from pyemia and sepsis.

Zentralblatt für Chirurgie, Leipzig

Jan. 17, 1920, 47, No. 3

*Headache After Intraspinal Medication. G. Hosemann.—p. 49.

*Blocking the Splanchnic Nerves. A. Hoffmann.—p. 53.

*Sound for Stenosis of Esophagus. E. Borchers.—p. 54.

By-Effects with Spinal Anesthesia.—Hosemann explains that the persisting headache after spinal anesthesia should always be analyzed as it may be due to one of several causes. In 17 per cent. of his 100 cases it was explained by irritation, meningism; the fluid was always under high pressure, with high albumin and cell content. Treatment here is with repeated lumbar puncture, diuretics and purges. In the other 83 per cent. the fluid was under very low or negative pressure, and there was very little albumin or cell content. The above mentioned measures would only aggravate conditions here. Copious intake of fluid is required here, better by the vein than subcutaneously or by the rectum. This will cure the headache within a few hours while under other measures it is liable to persist for weeks.

Blocking the Splanchnic Nerves.—Hoffmann joins in the chorus of praise for Kappis' method of blocking the splanchnic nerves from the rear for abdominal surgery. (The technic was described in these columns, Feb. 21, 1920, p. 568.) He has been using it for nearly a year for all kinds of operations on the stomach, duodenum, bile ducts, etc. A weaker solution of procaine answers the purpose, he says, and he advocates adding a little potassium sulphate: 0.5 parts procaine; 20 parts of a 2 per cent. solution of potassium sulphate and enough of the 0.9 per cent. solution of sodium chlorid to make 100 parts, adding 12 drops of 1:1,000 epinephrin.

Dilation of Cicatricial Stenosis.—Borchers expatiates on the advantages of the special sound he uses for this purpose. It is 1.5 meters long and tapers smoothly from 1.5 mm. at the tip to 1 cm. at the base. It is used in connection with the endless silk thread drawn out through an opening into the stomach, in correction of stenosis of the esophagus.

Jan. 24, 1920, 47, No. 4

*Treatment of Postoperative Tetany with Parathyroid Grafts. F. Landois.—p. 74.

*Removal of Half of Horse-Shoe Kidney. G. Magnus.—p. 76.

*Technic for Correction of Equinus Contracture after Amputation in Tarsus. A. Wachter.—p. 78.

Transplantation of Parathyroids in Treatment of Tetany.—Landois' experiments with parathyroid grafts in thirty-five dogs showed that only the autoplasmic operations were successful, and not all of these. Even at the best, the transplanted parathyroids have only a transient functional action, as they are soon absorbed. At the Breslau clinic there was only one case of tetany after thyroidectomy in ten years, but then came five cases in the last five years, fatal in one instance. As the spasms were continuous and the man was unconscious, three parathyroids were implanted, and essential improvement followed at once. It lasted, however, only nine days; the spasms then returned and soon proved fatal. Landois reiterates in conclusion that the parathyroids are not secreting organs, but glands which serve to neutralize the toxicity of certain injurious substances in the body. Hence treatment with parathyroid has little chance of success. Any treatment with established tetany is uncertain.

Heminephrectomy of Horseshoe Kidney.—Magnus found that the tuberculous process was limited to the right half of the horseshoe kidney, and he resected this alone. There was surprisingly little hemorrhage, and clinical recovery soon followed. The abnormal shape of the kidney was not suspected until it had been exposed.

Zentralblatt für Gynäkologie, Leipzig

Jan. 17, 1920, 44, No. 3

*To Arrest Hemorrhage with Placenta Praevia. P. Mathes.—p. 57.

Sweat Gland-Tissue Canceroid in Vulva. J. Schiffmann.—p. 59.

Nature of Sacral Pain. J. Novak.—p. 64.

Pituitary Treatment of Amenorrhea. R. Hofstätter.—p. 68.

Twilight Sleep in Obstetrics. P. Feldmann.—p. 74.

Transverse Septum in Vagina Impeding Delivery. T. Micholitsch.—p. 84.

History of Experimental Hermaphroditism. A. Foges.—p. 87.

Central Placenta Praevia.—Mathes knows of only twenty-two cases of placenta praevia centralis on record and adds another to the list. The fatal hemorrhage in such cases usually comes on separation of the placenta, so that the third stage of labor is the dangerous one here. He pleads for more energetic management of the case, pointing to his success with tying a thread around the tissues, just above each bleeding point, after the cervix had been opened up wide with speculums, after removal of the placenta. The placenta had been easily removed from above the cervical ring; below this it had to be pried loose, a scrap at a time. The hemorrhage at first had been so severe that the idea of cesarean section had to be abandoned as there was no time to prepare for it, and drawing down the foot arrested the bleeding. Waiting for the placenta to separate spontaneously, he says, has cost many lives, but with this method no fatal hemorrhage should occur from this cause, in a maternity at least. Pituitary and ergot should be given to insure good contraction of the uterus, the placenta then separated by hand under direct visual inspection, and each bleeding point tied off with a thread run around centrad.

Jan. 24, 1920, 44, No. 4

*Carcinoma Dose of Roentgen and Radium Rays. L. Seitz and H. Wintz.—p. 97.

Exudates in Pouch of Douglas with Appendicitis and Adnexa Disease. A. Mueller.—p. 109.

*Laminaria. K. Hoffmann.—p. 111.

The Unit of Cancer-Cell Destroying Action in Irradiation.—Seitz and Wintz have been studying the amount of roentgen and of radium rays required to destroy the cancer cell. They call this the carcinoma dose. It is equivalent to 100 to 110 per cent. of the skin unit dose (H. E. D.) which they accept as the amount of rays with 0.5 mm. zinc filter which, applied at a distance of 23 cm. from the skin, induces slight redness after eight days and a brown tint by the third to sixth week. Calling this 100 per cent., the carcinoma dose is 100 to 110 per cent.; the lowest limit is 90 per cent. It thus corresponds to the older conception of the erythem dose, but it does not vary, like the latter, with the susceptibility of the skin. Radium causes rapid necrosis of the cancer cell, while the destructive action of the roentgen rays is slower and more gradual, but the final result is the same with both, although the radium action is a close-up and the roentgen action a distant one. To destroy a cancer of the cervix over an area 3 cm. in circumference requires about 100 mg. radium element for thirty-two hours. When the amount of radium element was increased to 140 mg. and the exposure lengthened to thirty-four hours, with a 3 cm. cancer, the rectum suffered and a burn resulted. On account of the close contact and the biologic effect, the dose cannot be estimated by mathematical calculation as it might be if the distance were the same as with the roentgen rays. They advise that the dose of 100 mg. radium elements should not be surpassed unless the tumor is larger than 3 cm. and the bladder and rectum are thus pushed farther away, to a distance which weakens the effect of the rays, so that the sound tissues are left still capable of regenerating. To increase the distance, they keep the gamma ray filtered preparation in a wooden capsule, 4 to 7 mm. thick, with a thin coating of aluminum, and a glass cover. This holds the radium about 10 mm. apart from the tissues, and sometimes the cervix has to be dilated to introduce this bulky capsule.

Removal of Laminaria.—Hoffmann passes a loop of stout cord horizontally around the end of the tent as this projects from the cervix. Tweezers or some other small instrument is tied to the ends of the cord projecting from the vulva. By this firm hold and cross-bar handle, the laminaria can be easily pulled out.

Zentralblatt für innere Medizin, Leipzig

Jan. 31, 1920, 41, No. 5

*Experimental Pulmonary Edema. E. Laqueur and D. de Vries Reilingh.—p. 81.

Experimental Pulmonary Edema for Teaching Purposes.—Laqueur and Reilingh expatiate on the advantages of inducing osmotic edema in rabbits, and then practicing percussion and auscultation on them and comparing the findings with

the pathologic anatomy. They induce the edema by intratracheal injection of 5 or 20 c.c. of physiologic sodium chlorid solution.

Hygiea, Stockholm

Feb. 16, 1920, 82, No. 3

*Otitis Media and the General Practitioner. R. Bárány.—p. 81.

Otitis Media.—Bárány insists that the symptoms from acute otitis media which call for immediate operation during the third week do not have this significance during the first week. Only when they keep up after paracentesis, and grow worse, is the operation demanded. The bone is still hard, and to get into sound bone merely spreads infection. It is better to wait till the third or fourth week unless chills or meningitis force earlier intervention. The practitioner must realize further that there may be a destructive process in the mastoid process from an otitis media that has never required paracentesis. The ear may have healed while the mastoiditis is progressing. If the mastoid is tender from the start, the probabilities are that an operation will be necessary, but this is not inevitably the case. In one woman of 50 with 8 per cent. sugar, a large abscess in the mastoid process accompanied otitis media, and the auditory canal was filled with pus and granulations. The ear was treated with Burow's solution and thorough rinsing, while the sugar was being reduced with antidiabetic diet, to prepare for the operation. But in two weeks the abscess had disappeared and the hearing and the drum seemed to be normal. The physician should therefore be guarded in his prognosis, but the possibility of the bacteria dying off and the abscess healing spontaneously is too remote to deter from operating. Even with paracentesis he advises to temporize for a few hours, as spontaneous improvement may be observed. High fever in children in itself does not demand an immediate operation. In treatment of otitis media, he advises thorough but gentle rinsing out of the ear, saying that he does not think it possible for water to be forced into the internal ear, by this means, so that the dread of inducing labyrinthitis or meningitis is unfounded. He warns, however, that no water must be left in the ear as this provides a culture medium for germs. After rinsing, the ear must be thoroughly dried with cotton.

After the operation, he sutures the wound except for one small opening which he plugs with a rubber finger stuffed with gauze. This cigarette tampon is removed the next day, and a drain is inserted in its place made of rubber tissue rolled into a 2 or 3 mm. thick drain, which answers the purpose ideally. With chronic otitis media, the main contingents for operation are cholesteatomas in the middle ear, and for this he applied what he calls the "conservative radical" operation in 70 per cent. of his fifty-five cases and the hearing was considerably improved in all but two instances. This technic is being applied now extensively in other clinics.

Ugeskrift for Læger, Copenhagen

Jan. 22, 1920, 82, No. 4

Value of Diets in Different Countries. P. Heiberg.—p. 97.

Habitual Displacement of Head of Fibula. F. Teilmann.—p. 110.

*Treatment of Sterility in Women. C. Baastrop.—p. 111.

Treatment of Sterility in Women.—Baastrop is convinced that excessive acidity of the vaginal secretions may be responsible in some cases for sterility, by injury of the spermatozoa from the overacid environment. This assumption was confirmed in one case by conception following the use of a vaginal douche of a weakly alkaline fluid: a tablespoonful of a 2:1,000 solution of sodium hydroxid in a pint of tepid water.

Correction.—In the abstract on page 1860 of THE JOURNAL for Dec. 13, 1919, from Tecon's article on "Trauma and Tuberculosis," part of a sentence was left out by mistake. The sentence should read: "Sergent and Mantoux found only 9 and 5 per cent. with pulmonary tuberculosis after contusions and penetrating wounds of the chest while Tecon's proportion was 42 per cent." The italics are the missing words. The proportions after contusions alone were 55.5, 38.9 and 60 per cent., respectively.

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THE INCIDENCE OF ACUTE RHEUMATIC FEVER AT BELLEVUE HOSPITAL *

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On returning in the spring of 1919 to service in the wards of Bellevue Hospital, after a two years' absence, I was struck by the fact that there were no cases of acute rheumatism in the service. My memory was that spring and summer were the months when formerly there had been the largest number of cases. The house staff, on being questioned, seemed to accept it as not unusual; and though their memory dated back but two years at most, still it was evident that they were accustomed to the occurrence of fewer cases of the disease than had been my own hospital experience.

There were admitted into Bellevue Hospital 6,535 cases of acute rheumatic fever from January, 1906, to Sept. 1, 1919. Unfortunately, the records of the last four months of 1919 are still incomplete for the moment. In dealing with any hospital history records, with a varying house staff taught in three different schools of medicine in New York City and in the open division, coming from several widely separated schools over the United States and Canada, one would expect to find a certain variation of opinion as to what clinical picture would be recorded under such a general heading as acute rheumatism. But in reading the histories one finds it generally accepted, with few exceptions, that classified under rheumatism is the inflammatory

joints and without cardiac valvular involvement. Only a very small percentage will strike one as more fittingly to be classified from arthritis to acute rheumatism or vice versa. The number of cases of arthritis five and six years ago were about one quarter those of rheumatism, but during the past four years the number of rheumatism cases has diminished and the number of arthritis cases increased until in 1918 there were slightly more cases of arthritis than of rheumatism, there being 218 cases of rheumatism and

TABLE 2.—RELATION OF RHEUMATIC FEVER CASES TO
TOTAL ADMISSIONS

Years	Total Rheumatic Fever Cases Admitted to Bellevue Hospital	Total Admissions to Bellevue Hospital All Causes	Percen- tage of Rheumatic Fever Cases to Total Admissions
1906.....	444	23,660	1.87
1907.....	706	28,789	2.45
1908.....	630	29,411	2.4
1909.....	512	31,652	1.61
1910.....	599	36,820	1.62
1911.....	526	33,214	1.58
1912.....	432	36,113	1.19
1913.....	480	36,802	1.36
1914.....	581	37,162	1.56
1915.....	475	46,241	1.02
1916.....	394	43,951	0.896
1917.....	457	44,315	1.03
1918.....	218	40,980	0.531
1919.....	190*	37,632	0.521

* Calculated from average admissions for last four months of five previous years, i. e., adding 11 per cent. to admissions for first nine months, $172 + 18 = 190$.

226 of arthritis. Table 1 shows the number of arthritis cases since 1912.

This classification also rules out the number of arthritis deformans, the chronic arthritis and the gonorrheal joint infections.

In studying the rheumatism cases tabulated by year for age and total number (Tables 2 and 3), it is seen that in 1907 the percentage of acute rheumatism cases to the total admissions was 706 cases in 28,789 admissions, that is, 2.45 per cent. From that year the percentage has fluctuated slightly, but it steadily diminished to 1918, when it was 0.531. The total number of rheumatism cases had fallen from 706 to 218, and the total admissions had increased from 28,789 to 40,980. From 1909 through 1914, the number of rheumatism cases ran from 599 to 432, and the total admissions from 31,652 to 37,162, with practically a stationary ratio to total admissions, that of 1.6 per cent. But from 1915 for the next four years, the total admissions to the hospital increased greatly, and the number of cases of rheumatism diminished, so that the ratio to admissions becomes 1.02, 0.896, 1.03, 0.531 and 0.521 per cent. In 1919 we have the actual number of admissions for acute rheumatism for the first nine months of the year; but in calculating the total for

TABLE 1.—CASES OF ARTHRITIS, 1912-1918

Year	No. of Cases
1912.....	106
1913.....	95
1914.....	147
1915.....	205
1916.....	200
1917.....	242
1918.....	226

arthritis with fever affecting two or more large joints and frequently showing cardiac manifestation. The arthritis affecting the smaller joints of the hands and feet or affecting only one large joint are classified under arthritis, or knees and ankles affected with but little if any fever. Conversely, in studying the histories of arthritis one is struck by the unanimity with which acute arthritis refers to traumatic injuries to single joints or the inflammation of single joints, non-traumatic, or the acute multiple arthritis of the smaller

* Read before the Association of Cardiac Clinics, New York, Feb. 26, 1920.

1919, the actual admissions for the last four months of each year for the preceding five years were taken as a standard. From these figures it is evident that 11 per cent. of the total admissions for each year for rheumatism have been admitted during the last four months of the year. During the previous three years

averaged about the same. For all ages under 20 years, the percentage of these ages to the total has distinctly increased, as the total number of cases of rheumatism has diminished. Young persons from 20 to 24 and from 25 to 29 show a greatly diminished actual number of cases admitted, and in the last two years, 1918

TABLE 3.—ADMISSION OF PATIENTS WITH ACUTE RHEUMATISM ACCORDING TO AGE AND RATIO OF EACH FIVE-YEAR PERIOD TO TOTAL ADMISSIONS FOR EACH YEAR

	1911		1912		1913		1914		1915		1916		1917		1918		1919	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Under 5 years of age	..	....	4	....	1	....	..	....	2	....	1	....	3	....	..	....	1	....
From 5 to 9 years	4	0.7	2	0.4	6	1.2	14	2.4	11	2.3	10	2.5	9	1.9	13	5.9	15	8.7
10 to 14 years	14	2.6	7	1.6	22	4.5	12	2.1	19	4.0	10	2.5	19	4.1	15	6.9	15	8.7
15 to 19 years	46	8.7	31	7.1	47	9.6	48	8.2	33	6.9	20	5.0	31	6.7	23	10.5	12	6.9
20 to 24 years	93	17.7	84	19.4	106	21.7	113	19.4	90	18.9	66	16.7	84	18.3	31	14.2	24	13.9
25 to 29 years	89	16.8	49	11.0	80	18.4	107	18.4	80	19.0	42	12.0	88	19.0	30	13.0	13	7.5
30 to 34 years	84	16.0	63	14.5	75	15.3	82	14.0	67	14.0	61	15.4	62	13.5	27	12.3	20	17.4
35 to 39 years	53	10.1	67	15.5	58	11.8	59	10.1	59	12.4	49	12.0	48	10.5	26	11.9	21	12.2
40 to 44 years	50	9.4	51	11.8	48	9.8	44	7.5	38	8.0	42	10.6	39	8.5	12	5.5	16	9.3
45 to 49 years	52	9.8	28	6.0	23	4.9	38	6.5	29	6.0	27	6.8	36	7.9	20	9.0	12	6.9
50 to 54 years	21	4.0	25	5.7	12	2.4	33	5.6	20	4.0	31	7.1	18	3.9	8	3.6	6	3.4
55 to 59 years	9	1.6	10	2.3	6	1.2	22	3.7	12	2.5	14	3.4	11	2.4	9	4.0	3	1.7
60 to 64 years	9	1.6	8	1.8	9	1.8	6	1.0	9	1.9	9	2.3	6	1.3	3	1.3	3	1.7
Over 65 years.....	1	....	3	....	1	....	3	....	6	....	10	....	3	....	1	....	1	....
Totals.....	526		432		489		581		475		394		457		215		172*	

* First nine months of year.

the percentage has been 9 instead of 11. We therefore added 11 to the admissions for 1919 as the probable total, the real figures to be obtained later.

Table 4 shows the number of patients with rheumatism admitted by months from 1914 to 1918, inclusive, and for the first nine months of 1919. This

TABLE 4.—NUMBER OF ADMISSIONS FOR RHEUMATIC FEVER

	1914	1915	1916	1917	1918	1919
January.....	45	36	23	23	24	15
February.....	46	28	36	33	28	7
March.....	51	54	50	60	32	23
April.....	96	50	69	69	30	30
May.....	78	84	65	75	33	26
June.....	74	57	35	76	26	31
July.....	38	55	50	48	20	27
August.....	37	26	29	22	9	14
September.....	23	25	8	19	7	..
October.....	22	18	8	4	2	..
November.....	16	18	7	7	2	..
December.....	23	19	11	19	6	..
	579	470	391	455	219	172

table further shows that rheumatism is noticeably more prevalent from March 1 to August 1 than in the other months of the year, showing the disease to be one of spring and summer predominance. This tends to disprove the "chill" theory of causation as brought forward by Cullen in 1778 and held until recent years. Hirsch shows that in Denmark and Germany the winter months of December, January and February show usually a higher incidence than spring and summer. Similarly separated into seasons, the Bellevue figures of 1915 through 1918 have a spring and summer excess except in the winter months of 1918 (Table 5).

Considering the relation of age to the occurrence of rheumatism, we have definite figures from 1911 to 1919. Divided in quinquennial periods from 5 to 9 and 10 to 14 years of age, the actual number of admissions of the 5 to 9 group has increased, but the 10 to 14 group has remained about the same, so that the percentage of the ratio of these years to the total admissions for the year has risen as the total number of admissions has decreased. From 15 to 19 years the actual number has diminished, but the percentage has

and 1919, a percentage fall also. From 30 to 39 years of age, the total number of admissions has fallen with but slight change in percentage to total cases. The same can be said for the years 40 to 59. There has been, therefore, a great diminution of the total number of patients with rheumatism admitted from 15 years of age on. Under 15 years of age the total number admitted has remained stationary. From 15 to 29 years of age, both the actual number of patients admitted and the percentage of these age groups to the total number each year has noticeably diminished, particularly in the years 20 to 29. From 30 years onward, the greatest change has been in a diminution of actual numbers.

EFFECT OF PREVENTIVE MEASURES

These changes are marked after the year 1914. Has any new factor appeared in the preventive measures against rheumatism since 1914? None, except the spread among the medical profession of realization of the relation of focal infections to general diseases; and it was about six years ago that the dental clinics were established in the various hospitals in this city and the tonsillectomy clinics became vigorously active. The foregoing figures would seem to indicate that in the years of childhood, from 5 to 14, the impression of these preventive measures has not been very notice-

TABLE 5.—PERCENTAGE OF ADMISSIONS FOR RHEUMATIC FEVER

	Winter		Spring		Summer		Autumn	
	Dec., Jan., Feb.	Jan., Feb., Mar.	Mar., Apr., May	Apr., May, June	June, July, Aug.	July, Aug., Sept.	Sept., Oct., Nov.	Oct., Nov., Dec.
1915 (+ Dec., 1914).....	18.3	39.6	29.1	12.8				
1916.....	19.5	46.1	28.7	5.6				
1917.....	14.9	45.6	32.4	6.6				
1918.....	30.6	40.9	23.7	4.7				

able. In young adults from 15 to 29 there has been a strong impression made. Has this been due to disinfecting the teeth or removing tonsils or both, or neither? From 30 years to 50 there has also been evident results of dental work. To confirm these impressions, 1,000 consecutive histories of rheumatism were examined in Bellevue in the 1915-1918 period. In the

forty-three children of this group, 58 per cent. are recorded as having bad tonsils and 53.4 per cent. as having bad teeth. The records show that 25.3 per cent. of these 1,000 patients had tonsils noted as bad and 48.3 per cent. had teeth noted as bad. Thirteen per cent. are noted as having both tonsils and teeth bad. Tonsils alone seemed to be the focus of infection in 11.3 per cent., teeth alone in 55 per cent., and both bad in 13 per cent. The teeth are mentioned as good in only 6.7 per cent. of these 1,000 patients, and thirty-one of these sixty-seven patients are noted as having severe tonsillar infections.

As a possible checking comparison, the records of 50 consecutive cases of pneumonia were studied to see in what proportion the teeth and tonsils showed infection but with no rheumatism or other arthritis. The percentage of bad teeth in this group is 57, as against 68 of the rheumatic group, and the total percentage of tonsils noted as bad, 17 as against 25.3. More striking, however, is the percentage of patients in whom the teeth are noted as good, being 19, as against 6.7 in the rheumatic cases.

It is impossible to state what percentage of these cases showed cardiac involvement. In 1908, in studying the histories of 500 cases of rheumatism in Bellevue, 253, or 50.6 per cent., showed recent or old endocarditis. If the cardiac involvement dominated the clinical picture, the patient would probably be recorded under acute or chronic cardiovalvular disease and not under acute rheumatism. The liability, moreover, to cardiac involvement varies with age, the figures of Church showing 75 per cent. for children under 10 years of age and liability to their involvement diminishing, until over 40 years of age the percentage was 12.5 per cent.

TABLE 6.—CONDITION OF TEETH AND TONSILS IN ONE THOUSAND CONSECUTIVE HISTORIES OF ACUTE RHEUMATIC FEVER (1915-1918)

	Cases		Controls	
	No.	%	No.	%
Cases excluded*	34	...	0	0
Tonsils bad.....	113	11.3	27	11
Teeth bad.....	551	55.0	126	51
Both bad.....	131	13.0	15	6
Neither mentioned.....	119	11.9	33	13
Throat inflamed.....	224	22.4	0	0
Teeth good†.....	67	6.7	48	19
Total bad tonsils.....	253	25.3	42	17
Total bad teeth.....	683	68.3	141	57

Total cases, 1,000; total controls, 250.

* Cases excluded history showed patient suffering from some other disease.

† Of these sixty-seven cases, thirty-one are especially noted as instances of marked tonsillar trouble.

CONCLUSION

These figures were obtained in gathering material for a report on health insurance to see whether or not there had been an actual diminution in the number of cases of acute rheumatic fever admitted to Bellevue Hospital, and to see whether any deductions could be drawn from them regarding the wisdom of including dental hygiene in the preventive measures of social insurance. They are too limited for any sweeping generalizations. But it would seem that the actual and striking diminution of total admissions for rheumatic fever of the past two years was more than accidental, and that for this the dental hygiene more than any other one factor was responsible. That tonsillectomy has also made its impression is most probable, as the diminution of both total number of admissions in the

20 to 29 year group and the percentage ratio to total number of this group is really most striking, especially since during this period of life the liability to rheumatic infection is especially noticeable. The average number admitted of 20 to 29 years of age during the four year period 1911 to 1914 was 180, while during the five year period 1915 to 1919 it was 110. The ratio to total admissions has also fallen from 17.8 per cent. for 1911 to 1914 to 15.3 per cent. for 1915 to 1919. The two periods from 20 to 29 are the periods in which the figures show most definitely an average reduction of percentage to total, combined with a definite reduction of total admissions. Have tonsillectomies begun to tell, or has it been oral and dental hygiene? Undoubtedly both, as ten years have not elapsed since tonsillectomy before 15 years of age has become widespread, so that it could not previously have affected the older years of this and other age groups in the community.

ADEQUATE PREPARATION FOR THE PRACTICE OF OTOLARYNGOLOGY

DISCUSSION OF AN OLD PROBLEM*

GEORGE E. SHAMBAUGH, M.D.

CHICAGO

As an introduction to my discussion I wish to relate a few experiences which have come to me recently.

REPORT OF CASES

CASE 1.—Last December a man, aged 23, consulted me about his ear trouble. He stated that for perhaps six or eight years he had noticed an insidious development of deafness, associated with a persistent tinnitus aurium. At first only one ear was involved, but for two years both had been affected.

Both drum membranes were unusually transparent, but in other respects they were quite normal. The functional tests revealed a marked elevation of the lower tone limit, a strongly negative Rinne test for both ears, and an actual prolongation of bone conduction, with an extensive defect at the upper tone limit. The diagnosis was clearly one of otosclerosis, producing fixation of the stapes and a degeneration in the labyrinth. The lower and middle turbinated bodies had been removed from both sides, the septum had been resected, the faucial tonsils had been enucleated, and the nasopharynx had been curetted. In the operation on the faucial tonsils, both posterior pillars had been removed. The result of these operations was a marked pharyngitis sicca, with crusting in the nasopharynx, thickening of the lateral bands of the pharynx, caused by the removal of the posterior pillars, and an annoying rhinitis.

The patient stated positively that he had never experienced any nose or throat symptoms prior to his operations, and that the series of operations had been performed to arrest his increasing deafness. It is at once apparent to any one who understands the diagnosis of ear diseases that this patient was suffering from a form of ear trouble which has no especial relation to nose and throat conditions, and that operations on the nose and throat could not be expected to better his ear condition.

CASE 2.—Last month a man, aged 20, was referred to me from a neighboring state because of tinnitus aurium, which had annoyed him for more than a year. A letter from his family physician stated that the patient was coming to me to have carried out a series of operations on the nose and throat, which had been recommended by a local specialist, in order to save the patient from losing his hearing. The

* Read before the Chicago Laryngological and Otological Society, March 1, 1920.

operations that were recommended included resection of the nasal septum, turbinectomies and removal of the tonsils. The patient was experiencing no nose or throat trouble. Both drum membranes were quite normal, and the functional examination disclosed no defect in the hearing. It was possible that the tinnitus was being caused by an incipient otosclerosis, which had not as yet produced any defect in the hearing. One thing was certain: the patient did not suffer from any middle ear disease which could have been influenced by nose or throat conditions.

CASE 3.—During the same week a young woman residing some distance from Chicago consulted me about having a mastoid operation, which she had been urged to have done. The hearing in the right ear was very much reduced, as the result of an exhausted suppurative otitis media. The hearing in the left ear was only slightly impaired. In this ear there was found a slight mucous discharge which came from a large perforation in the anterior segment of the membrana tympani. This discharge, the patient stated, had recurred from time to time in this ear since childhood. There was no odor. It was because of this discharge that the radical mastoid operation had been urged as a prophylactic measure to prevent a possible serious intracranial complication. The palpable facts in this case were, first, that the patient was not suffering from a form of ear trouble which leads to a serious complication and, second, that an operation had been proposed which might very easily result in a serious impairment of the hearing in the one ear on which the patient had to rely. In other words, an operation was proposed for an ear condition which did not require an operation and, furthermore, if a condition had really existed in this ear which would ordinarily justify an operation, such a procedure would be warranted in this case only in the presence of symptoms indicating an impending serious complication, because it was the one ear on which the patient had to rely for hearing.

CASE 4.—A few weeks ago a patient came to the Presbyterian Hospital suffering from a discharging ear, the result of an acute otitis media. He stated that his ear discharge had begun last December and that practically from the onset he had suffered from pain, more or less severe, in the mastoid, and that the region over the process had been swollen and tender for a couple of weeks. Only two days before I saw this patient he had been urged to have his tonsils removed, a submucous resection of the septum performed, and turbinectomies, in order to cure his discharging ear.

COMMENT

Here is a series of cases presenting the most elementary clinical problems that confront the otolaryngologist and in each instance entirely wrong advice has been given. The questions arise: What is the cause of this state of affairs, and is there a remedy? The cause for this condition is the fact that the country is literally flooded with general practitioners who have found a lucrative field of work in doing operations on the nose and throat, but who have had no fundamental training in otolaryngology which has prepared them to make the proper examination or to diagnose the conditions requiring these operations. For years general practitioners have been coming to our city clinics, especially to the so-called postgraduate schools, with the sole object of learning the technic of a few operations on the nose and throat. It has been proverbial that these men have not been interested in learning the principles of otolaryngology. Diagnosis has not especially interested them. They came to get a smattering of technic for a few operations. This they could get in a few weeks, whereupon they returned to their practice to begin doing these operations on their patients. It is not surprising that the wrong advice is so frequently given, or that so many unnecessary operations are being performed.

The remedy for this state of affairs is equally clear. The representative otolaryngologists throughout the country should insist that the practitioners who come to them for instruction should first acquire a knowledge of otolaryngology before they are taught to do operations in this specialty. Otolaryngology is not such a difficult subject that it requires a genius to master its principles. On the other hand, it is just as clear that these principles cannot be acquired by a few weeks or a few months' attendance at postgraduate clinics. We should insist that a physician who is preparing to practice otolaryngology should spend as a minimum one year of full time work in the study of this subject. His work during this year should be as much in the study of the fundamental sciences of anatomy, embryology, physiology and pathology as in the study of the clinical aspects of the subject. It does not suffice that he assist in a clinic during this year, where the chief work is the removal of tonsils and the correction of septum irregularities. His reading should be directed, and assistance should be given him in learning to make diagnoses and to understand the proper indications for operative treatment. The technic of operations should be taught only as the final part of such preparation. It is a relatively simple matter to teach a student the technic of operations. It is a difficult problem to teach the methods of examination and the making of diagnoses. The situation throughout the country does not call so much for a large number of men to do the work in otolaryngology as it does for the adequate training of only a relatively small fraction of the men who are at present attempting to take care of this work. I am told that in many communities the number of men who are limiting their practice to otolaryngology often exceeds that of the men doing all the other medical work, and that these men are succeeding financially more than their fellows largely because of the unnecessary surgical work which they are undertaking to do.

We owe it to the public and the specialty which we are attempting to represent that we take a definite stand on this proposition of adequate preparation for practice in this field. We cannot directly control the unscrupulous practitioner who takes a case in which we refuse to operate and which he himself knows does not require an operation, and who subjects the patient to, say, a tonsil enucleation, simply because the patient has got it into his head that his tonsils are causing an imaginary trouble; but we can and should control the preparation of men who are attempting the operations in our specialty without knowing the indications for these operations. The need of controlling the preparation for special practice is much greater now than it was a few years ago, when the general practitioner was attempting to treat these cases simply by using sprays and topical applications. No special harm to patients was done by such treatment. But give these practitioners enough knowledge of the technic of an operation or two on the nose or throat, so that they can undertake to do these operations, and the field for harm by doing unnecessary surgery is opened.

This is not a new problem. In 1907 I insisted¹ that the preparation for special practice should be as much in the fundamental sciences as in the clinical study. I emphasized the point that this work should be done in the laboratories of the university, and was the first

1. Shambaugh, G. E.: The Preparation of the Specialist, J. A. M. A. 49: 540-543 (Aug. 17) 1907.

I believe, to express the view that it be put on the basis of genuine graduate work leading to the granting by the university of a higher degree, the degree of Doctor of Philosophy, for example, in Otolaryngology. We now for the first time see this proposition being taken up by some of our universities.

Again in 1909 I pointed out² the inability of the existing postgraduate schools to provide more than a smattering of clinical instruction, which, after all, is of minor importance in the proper training of the real specialist as compared with the benefit derived from adequate instruction in the fundamental sciences, which can be acquired only in the laboratories of a university.

Finally, in 1912, I emphasized³ the fact that the real specialist in medicine, just as in any field, is the man who by perseverance and concentration of effort succeeds in placing himself in touch with the advanced line of work, where he is able to see and to attack the various unsolved problems in his particular field: that the specialties are no place for the dilettant in medicine or for the unsuccessful general practitioner. I pointed out the analogy between the work of the postgraduate schools in training specialists and that of the existing proprietary medical schools in training general practitioners, and insisted that the proper place for both of these fields of instruction was in a properly equipped department of medicine of a university.

Since these articles were written, we have seen the passing of the proprietary medical school and the taking over of undergraduate medical instruction by the university, where it rightfully belonged. I believe that we are now about to see the passing of the postgraduate school as an institution for training men practicing the medical specialties. Already the universities are reaching out into this field, and it should not be long before we shall see the preparation for the medical specialties put on the basis of real graduate instruction in the university department of medicine. When this is accomplished there will be less effort made to ladle out to these students medical facts in courses devised for this purpose. The aim will be rather to lead the student to acquire knowledge of facts by his own observation and by reading. Courses of instruction aiming to drill the student in the established facts in medicine are always superficial. It is not so much the number of facts that the physician is able to acquire in his preparation as a specialist that matters. It is rather the training to investigate these facts that is of greatest value. It is right here that postgraduate instruction in this country and abroad has failed signally in the preparation for special practice. Physicians who have relied on the taking of such courses for their preparation have too often completed this instruction with the belief that they have acquired a knowledge of the important things in otolaryngology, whereas they have missed entirely the most important element in the proper training of the specialist, namely, the training, and the desire inspired by the training, for investigating these facts. Few of all the men who in the past have filled our postgraduate medical schools and have crowded the courses offered for specialists abroad have ever become contributors to the advancement of our specialty.

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A COMPARISON OF METHODS FOR DETERMINING THYROTOXICOSIS*

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The observations which form the basis of this paper were made during the last eight months, beginning July 1, 1919, and were prompted by a desire to compare, particularly, the epinephrin chlorid test, as described by Goetsch, with basal metabolism determinations, as advocated by Benedict, Du Bois and others, in relation to certain clinical and pathologic observations.

The questions which presented themselves were: (1) the clinical condition of the patient, as determined by a standard, carefully planned method of history taking and examination; (2) the response to the epinephrin chlorid test; (3) the basal metabolic rate as determined by oxygen consumption; (4) the pathology of the thyroid after operative removal, and (5) the clinical result of operation.

For purposes of accumulating clinical data, a special thyroid sheet was utilized. The epinephrin chlorid test as described by Goetsch was applied as we have been accustomed to apply it for the last three years. The basal metabolism was determined by utilizing the Benedict portable apparatus, the precautions advocated by Benedict and Carpenter being strictly observed. Only oxygen determinations were made in most instances. Dr. C. W. Webb operated on those patients that required operation. The pathologic examinations were made by Dr. W. S. Thomas.

The probable hyperthyroid cases coming under observation between July 1, 1919, and Jan. 1, 1920, numbered fifty. Among these were twenty-nine patients for whom operative treatment was thought to be indicated. The other twenty-one composed a group made up of patients for whom measures other than operative were employed. There were no very active cases in this group, and they will receive no further consideration at this time. From the clinical point of view the operative group comprised two main types: first, the severely toxic cases; all, on whom it was thought safe to try the test, showing markedly positive epinephrin chlorid reactions, and increased metabolic rate, varying from 20 per cent. to 85 per cent., and clinical evidences too obvious to be by any possibility mistaken; and second, a type showing symptoms milder in degree and without exophthalmos. The second type responded positively to the epinephrin chlorid test in varying degrees, but showed a metabolic rate which was low, or not increased above the limits now accepted as normal.

The last statement will bear reiteration, for on it the reason for the presentation of this report rests. We encountered patients with varying degrees of thyroid enlargement, who were incapacitated for ordinary activities over periods of very considerable duration, whose symptoms suggested thyrotoxicosis, who gave a positive response to the epinephrin chlorid test, but who had normal metabolic rates. The problem was this: Would operation in such cases be justifiable? Basing our decision on a rather large number of past observations on patients who seemed to be similar in type, but who had been examined before we were able to determine the metabolic rate, and who had shown

2. Shambaugh, G. E.: Post-Graduate Instruction in Oto-Laryngology, *Laryngoscope*, June, 1909.

3. Shambaugh, G. E.: The Specialist in Medicine, *J. A. M. A.* 58: 1927-1829 (June 15) 1912.

* Read before the Buffalo Academy of Medicine, Jan. 14, 1920.

very satisfactory postoperative results, we advised operation in certain of these cases.

Considering, on the one hand, the excellent work of Du Bois and others on metabolism in hyperthyroidism, and, on the other hand, the now popular acceptance of an increase in metabolic rate as determinable by the ordinary methods as the *sine qua non* of toxic thyroid states, and especially considering its apparent acceptance by the U. S. Army as a criterion, it seems a matter of importance to attempt to discover whether or not so general a conclusion is in fact fully justified. Leaving aside the question of specificity of functional tests, there is a rather general agreement that toxic thyroid states when marked in degree produce quite definite clinical pictures and give definite and constant responses to estimations of metabolic rate, and, in most instances also to the epinephrin chlorid test. But it is not at all generally conceded that there is a rather large group of patients who are in a definitely impaired physical and nervous condition, who, because of a toxic state, of probable thyroid origin, are in need of positive medical or surgical aid, and yet whose metabolic rate is not increased.

Among the thyroid patients that were observed in the period stated and that came to operation, there were five active exophthalmic cases—one carcinoma of the thyroid; one chronic thyroiditis; and three markedly toxic adenomas; the remaining nineteen patients, not exophthalmic, on whom operation was performed, were thought to be showing varying degrees of toxicity, but did not show increase in metabolic rate. From this point our discussion is limited to these nineteen.

CLASSIFICATION OF CASES

Prior to discussing with Dr. Thomas the pathologic picture in these cases, I arranged them clinically in two subgroups: the first containing the patients who were thought likely to show fairly positive pathologic evidence of overactivity; the second, those that seemed less toxic. After pathologic examination, one case thought clinically to be moderately active, failed to show on section much corroborative evidence, and two of the less active cases showed evidence on section which quite paralleled the evidence in some of the cases that were clinically more active. Possible ground for errors in classifying these three cases may be found in the fact that the patient who was thought to show clinically moderately active thyroid disturbance, associated with tremor and cardiovascular irritability with intermittent palpitation and tachycardia, was a young, rather frail woman, weighing only 80 pounds, and having a moderate sized goiter which showed on section simple, diffuse hypertrophy. In this case overabundance of not especially overactive thyroid tissue may, in so frail a subject, have produced symptoms out of proportion to the apparent pathologic condition. Of the other two patients whose glands appeared on section rather more active than the clinical picture would indicate; one was a farmer's wife, weighing 209 pounds, whose history indicated rather short duration of the thyrotoxicosis; the other was a young woman who had been leading a life of quiet invalidism for three years, a state which, in the absence of thyroid crises, may have tended to a reduction of her symptoms. These three patients showed definite postoperative improvement. Of the other five patients belonging to the second subgroup, that is, the clinically least active cases in which operation was performed, four,

on section, presented the appearance of simple diffuse hypertrophy, and one that of colloid goiter.

The eleven remaining cases of the nineteen under discussion constitute a subgroup of special interest, in that they appeared to be definitely thyrotoxic, gave positive response to the epinephrin chlorid test, showed basal metabolism rates within normal limits, were with one exception very definitely benefited by operation, and showed on section glands that were thought to be compatible with the theory of thyrotoxicosis. The histopathology of the thyroid has not reached a state of much certainty, but the glands represented in these eleven cases probably all belong under one or another of the types of adenomas as described by Goetsch, Simpson and others.

We are not now concerned with the selection of types of therapy, but have chosen to refer only to patients that came to operation because this is the only class of patients available for combined observations of the type under consideration.

FACTORS OF ETIOLOGIC SIGNIFICANCE

To refer in a little more detail to the eleven cases which constitute the subgroup on which our conclusions actually rest, factors which may have had some direct or indirect etiologic significance were: family history, 8; nervous strain, 4; nervous shock, 0; infection, 9; adolescence, 3; pregnancy, 4. Most of these patients were from western New York, Ohio and Pennsylvania.

The symptoms were thus distributed: nervousness, 11 (nervous hypertension, 6; depression with nervous hypertension, 5); tremor, 6; dyspnea, or dyspnea on slight exertion, 5; palpitation, 10; tachycardia, 9; loss of strength, 9; vomiting, 0; diarrhea, 0; insomnia, 5; free perspiration, 6; edema (feet and ankles), 3; headache, 8; vertigo, 5; generally increased pigmentation of the skin, especially of the forearms, 1; weight loss (moderate), 5; exophthalmos, 0; eye grounds negative, 11; vocal cords negative, 11; tonsils infected, 9; peridental infection, 3; goiter, 10; definite nodules felt in 4. The known onset varied from a few months to twenty years. The goiter had recently increased in size in 8; there was no dysphagia; slight pressure symptoms were noted in 3; no organic heart lesion was discovered in any case.

The epinephrin chlorid test was clear, positive and of moderate degree in 6 cases; clear, positive and of more marked degree in 5. Basal metabolism results in the eleven cases were: 11 per cent., high; 6 per cent., low; 5 per cent., high; 8 per cent., high; 8 per cent., high; 20 per cent., low; 41½ per cent., low; 14 per cent., low; 2 per cent., high; 7 per cent., high and one, flat normal. Readings not varying more than 15 per cent. from the normal are regarded as normal.

On section, the eleven thyroids all showed definite abnormalities of a type suggesting functional overactivity.

I realize that I am treading on somewhat treacherous ground in making this statement in view of the present uncertain state of knowledge of thyroid histopathology. The pathologist cannot be expected to draw clinical deductions. It seems fair, however, to assume, in case one finds in a glandular organ, such as the thyroid, increase in the height and size of active cells and in cellular elements, with infolding of the walls of the acini and a decrease in colloid, provided these changes are sufficiently clear to any intelligent observer and sufficiently abundant, that the tissue in question is probably more active than is the case in normal tissue.

A further index, according to Cowdry, Goetsch and others, is furnished by the abundance of mitochondria in the cytoplasm of the functioning cells, mitochondria being small granular and rodlike bodies of characteristic staining reaction which are far more abundant in cells that give evidence of a high degree of activity of growth or function than in cells of low activity.

In the pathologic study of the group of eleven cases under discussion, the histologic picture of the type just mentioned was clearly present in all, though varying somewhat in degree.

As to clinical results following operation, I have reports from all eleven cases, and despite the fact that these patients were recently operated on, the longest interval since operation being eight months, and the shortest about six weeks, the reports, with one exception, are excellent. In this one instance, a recent case, there seems to be no marked improvement. This patient was sent to Dr. Webb for thyroid operation after six months' rest at Saranac. Her symptoms were marked nervous tension, sleeplessness and fatigue, with pronounced palpitation. The epinephrin chlorid test was made by Heise at Saranac and reported moderately positive; the gland, on section, showed definite hyperplasia with cells generally of high columnar type. This patient is of a definite psychasthenic type, and the present conditions of her life do not conduce at all to a good outcome. The other ten report progress of very positive character; the generally enthusiastic tone of the reports is noticeable. The symptoms specifically reported as relieved are: nervousness in 10; tremor in 4; palpitation in 10; strength loss in 4; headache in 5; insomnia in 5; excessive perspiration in 4; vertigo in 1, and weight loss in 4. Our letters of inquiry were general rather than in the form of a questionnaire, which would doubtless have brought more detailed information.

There can be no doubt, since the thorough work of Benedict and Carpenter, that the Benedict portable apparatus, when used with due regard for the various possibilities of error, furnishes an entirely satisfactory means for the measurement of oxygen consumption. Nothing occurred in the observations under discussion to raise a reasonable doubt as to the accuracy of the observations.

THE EPINEPHRIN CHLORID TEST

The epinephrin chlorid test is rather generally conceded to be an indicator of hypersensitiveness of the sympathetic system, rather than to furnish specifically a measure of thyroid activity per se. On the other hand, it appears to be a fact that positive responses to this test are far more common in cases in which there is thyrotoxicosis than in other instances.

The injection of epinephrin chlorid solution in sufficient dose has been definitely shown to speed up metabolism, increase blood sugar, and produce slight evidence of acidosis, as is indicated in slight increase in acetone bodies in the blood and slight decrease of carbon dioxid combining power in the blood. Without quoting the detailed figures and remarks which appear in each test, it is a little difficult to classify the results of the Goetsch test clearly. No test is regarded as even mildly positive in which a rise of at least 10 points in pulse and in systolic pressure does not occur after the injection of 0.5 c.c. of 1 to 1,000 epinephrin chlorid solution, nor is a test regarded as positive unless there are clear cut subjective symptoms and tremor. With those requirements as the minimum, one may interpret approxi-

mately the terms moderately or markedly positive. The test is beyond question very striking in many instances and should be applied in all doubtful cases, not because it furnishes a criterion, but because it tends to stimulate closer study, and to offer aid in formulating a diagnosis.

In excitable persons we are accustomed to check up the test with injections of sterile water. Unfortunately, the personality of the examiner also needs consideration. Furthermore, observation of the rate of basal metabolism alone, as now estimated, should not be regarded as a sufficient criterion in determining the presence or absence of toxic states associated with the thyroid. The evidence thus obtained is of much value in estimating varying degrees of toxicity, but should receive only its proper emphasis, the complete study of the patient furnishing the only safe guide.

The epinephrin chlorid test is more sensitive and requires even greater safeguards than the estimation of oxygen consumption in many instances, and while one must not be misled to believe that no degree of thyrotoxicosis can be present unless there is increased metabolic rate, one must beware of accepting the belief that every patient responding positively to the epinephrin chlorid test requires radical thyroid treatment. No functional test yet described is pathognomonic.

Important as is the function of the thyroid in the regulation of metabolism, other factors must be taken into consideration before the picture can be regarded as complete.

SUMMARY

Observation of a selected group of eleven patients appears to present sufficient evidence to warrant the diagnosis of thyrotoxicosis, as determined by clinical observation, pathologic study of the portions of the thyroids removed at operation, and postoperative progress. These patients before operation but after rest responded positively to the epinephrin chlorid test and negatively to estimations of basal metabolic rate. They were all of the nonexophthalmic (adenomatous) type; more toxic cases of the exophthalmic and adenomatous types observed during the same period showed increased metabolic rates ranging from 20 per cent. to 85 per cent. above the normal base line.

CONCLUSION

Complete methods of examination with special attention to the possibility of errors in case of psychoneurotic patients should furnish the basis for diagnosis, rather than reliance on any functional test, though the functional tests are of great value in the compilation of evidence, especially in relation to the degree of toxicity.

The Needs of the Children of Porto Rico and the Virgin Islands.—In his seventh annual report, the chief of the children's bureau, U. S. Department of Labor, urges that the needs of the children of our island possessions, be made a subject for official investigation. In Porto Rico, there are "about 10,000 homeless children under 12 years of age, who live by whatever means they are able, many of them begging or stealing, and most of them having no permanent lodging place, sleeping at night in boxes or on doorsteps, or wherever they happen to find a lodging place secure from the rain. These children are, for the most part, deserted and abandoned children of illegitimate parentage, or orphan children whose parents have left no provision for their care and education, and they constitute a fertile soil for the implanting of criminal tendencies and are ready material for older people of criminal habits."

POISONING BY ALCOHOL "DENATURED"
WITH NITROBENZENE*

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AND

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CLEVELAND

During the last Christmas holiday season a large number of dark, ghastly looking patients who had been drinking "denatured alcohol" were brought into the City Hospital within a few days. As a rule they were unconscious. The dark, almost black, discoloration was limited mainly to the extremities, face and neck, including a fringe of the upper portion of the chest. In other words, the richly vascular, pigmented and dependent portions of the body were principally involved. The color was not the typical blue of ordinary cyanosis, but rather a livid, brown-black or nearly black, suggesting the presence of methemoglobin in the blood. Except for the deep narcosis and a moderately rapid pulse, the patients were otherwise practically normal. No other circulatory and no respiratory disturbances were detectable. After a deep sleep of about twenty-four hours, the patients left the hospital fully recovered. They did not seem to suffer, and there were no fatalities.

OBSERVATIONS

Blood.—This appeared rather chocolate colored. Spectroscopic examination revealed the presence of two typical bands of oxyhemoglobin, and a single band in the red. On reduction by ammonium sulphid, these were replaced by the broad band of reduced hemoglobin, the band in the red portion of the spectrum disappeared, indicating the presence of methemoglobin.

Analysis of the "Alcohol."—A pint of the beverage ingested by the patients was analyzed. Qualitatively, the presence of ethyl alcohol was established by the dichromate-sulphuric acid test and the refractometer. Methyl alcohol was absent, as indicated by the refractometer. Quantitative estimation of formaldehyd was made by the phloroglucin reagent¹ after oxidation with a copper spiral. Free formaldehyd was present in the alcohol to the extent of about 1:500,000, according to the phloroglucin test. Strong positive tests for nitrobenzene were obtained by means of the zinc dust-acetic acid hypochlorite test, and also the indophenol reaction. The odor of nitrobenzene was distinct, resembling the odor of common shoe dyes. Quantitatively, ethyl alcohol was present to the extent of 61 per cent. (by refractometer). For these refractometer estimations we are indebted to Mr. Percy Tarver of the City Health Laboratory.

COMMENT

The results of our examination indicate that the peculiar dark (black) discoloration in these patients was due to methemoglobinemia arising from the ingestion of nitrobenzene in the "denatured" alcohol. The narcosis was, of course, due to alcohol. The relatively low concentration of formaldehyd found is negligible so far as toxicity is concerned.

The symptoms observed are practically the same as those described by Stifel² in soldiers who were

poisoned by the use of a shoe dye containing nitrobenzene. As reported by Stifel, recovery from nitrobenzene poisoning is prompt and spontaneous. In other words, this "denaturizing" agent is relatively harmless. The beverage so denatured is not rendered altogether unpleasant, either. However, denaturation by nitrobenzene is illegitimate, the law requiring either of the following with certain concentration limits: mercuric chlorid, hydrochloric acid, formaldehyd, phenol and tannic acid, alum, formaldehyd and camphor, and liquor cresolis compositus.

Chronic poisoning from the prolonged use of alcohol containing nitrobenzene might be different from the acute poisoning here reported. Tolerance even to small doses of nitrobenzene is not known to exist, and if it is possible, the cyanosis and methemoglobinemia might still exist, though probably of low grade. Digestive disturbances, visceral degenerations, etc., arising therefrom are conceivable. These might confuse the diagnosis of minor maladies. Physicians, therefore, should bear in mind the rôle of uncommon and relatively harmless, though active poisons, which may be added to or used in alcoholic beverages for deceptive purposes.

SUMMARY AND CONCLUSION

Acute poisoning by alcohol "denatured" with nitrobenzene, and containing a low concentration of formaldehyd, occurred in a number of cases. Although apparently low grade and nonfatal, there is considerable potential harm from such beverages when used over long periods, confusing at the same time the diagnosis of minor maladies.

FITS AND FALLACIES

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In the recent mobilization of the American Army, the number of rejections solely for nervous and mental disease rose early in places to 5 per cent. of the total number. Of the first 13,481 of such rejections, 12.8 per cent. were for epilepsy. A simple calculation based on these figures puts the incidence of epilepsy among the young men examined at one in 150. Such incidence seems an exaggeration of the frequency of epilepsy in our population, but most similar rough indications point to a frequency sufficient to establish a more pressing claim on general medical attention.

Certainly great numbers of epileptics come to the Neurological Institute from far and near. Three hundred and eighty-eight new patients were added to our lists last year. There is a great variety of conceptions among them regarding their ailment, many of which are quite ridiculous. These conceptions correspond in some measure to past treatment, which varies all the way from the merely futile and ineffective, to the positively harmful and dangerous. Epileptics are dieted, purged, disinfected, analyzed, circumcised and sterilized; women are deprived of their pelvic apparatus; bowels are taken away, heads broken into—every conceivable sort of activity is being indulged in and advocated for the cure of epilepsy.

This does not so much impute discredit to the physician in charge, whose attitude toward these patients is practically always one of sympathy and

* From the Medical Clinic, City Hospital and the Pharmacological Laboratory, Western Reserve University School of Medicine.

1. Hanzlik, P. J., and Collins, R. J.: J. Biol. Chem. **25**: 231 (June) 1916.

2. Stifel, R. E.: Methemoglobinemia Due to Poisoning by Shoe Dye, J. A. M. A. **72**: 395 (Feb. 8) 1919.

genuine well meaning, as it does reflect the confusion of ideas on the subject with which the medical press of the day abounds. Every one writes about epilepsy, and each explains it according to his light; and as it is possible for a man to be wrong in his main argument and yet deliver fifty truths in arriving at a false conclusion, unsound reasoning and invalid argumentation accordingly spread apace. So today there is a veritable chaos of conflicting views regarding the cause and treatment of epilepsy, but it can be easily shown that a fallacy forms the basis for most of the unique current cures.

This paper is an attempt, by a brief consideration of some of the more popular misconceptions, to clear up somewhat the confusion concerning the very interesting but much abused problem of convulsions which must surround the general practitioner under whose care most epileptics are, excepting those in the big cities.

HEAD SURGERY

Whether from a real belief in the efficacy of the procedure, or whether merely from a feeling of helplessness combined with a desire to try something, there

GROSS CHANGES AT NECROPSY IN SEVENTY-SIX CASES OF EPILEPSY *

	No.
Hemiatrophy	16
Cerebral softening	10
Hemorrhages (various)	10
Pachymeningitis	9
Hydrops of the subarachnoid space	8
General congestion	8
Cornu ammonis sclerosis	7
Dilated ventricles	7
Cloudy arachnoid	5
Calvarium thick	4
Calvarium thin	3
Tumor	4
Hydrocephalus	4
Flattening of the convolutions	4
Pituitary large	2
Pituitary small	3
Tuberculous meningitis	2
Leptomeningitis	2
Arteriosclerosis	2
Cystic choroids	2
Fractured skull	2
Trephined	1
Osteoma	1

* From the twenty-fifth annual report of Craig Colony for Epileptics, 1919.

has been in the past much ill-advised and indiscriminate surgery performed on the heads of epileptics. Such operations are performed chiefly in an effort to remove a source of irritation. This implies a likelihood of finding in epileptics some gross lesion, and a possibility of eradicating it when found. A consideration of the character and frequency of gross brain lesions found in the brains of epileptics is pertinent. In 845 necropsies at Craig Colony on the brains of epileptics, gross lesions are reported present in 60 per cent. In the 205 necropsies at the Monson State Hospital for epileptics, the percentage is almost the same—61.5 per cent.

To indicate the character of the lesions encountered, and included in these percentages, a list of the 1919 series of necropsies at Craig Colony is shown in the accompanying tabulation. It is a fact worth remarking that forty out of every 100 epileptics show no gross deviation from the normal even when gone over in the comprehensive manner that the table indicates. However, to accept even these figures as an indication of the prevalence of gross brain lesions among the great mass of sane and unconfined epileptics is for several reasons a great error.

In institutions of this kind, the disorder is seen in its severest form and in the worst type of individual. For instance, 128,725 convulsions were reported to have occurred at Craig Colony among the 1,700 epileptics treated there in the year ending June 30, 1917. This indicates for each patient an average of seventy-five. The records of the Monson State Hospital for Epileptics show that 90 per cent. of the necropsies were on the victims of mental disorder. In fact, all but one of the brains in their series of 116 reported abnormal were from patients that were feeble-minded or demented.

Of course, these institutions do not assert that these gross lesions are the cause of the disorder. As to their significance, the statement is made, in a study of this point from the Monson State Hospital, that, "like the manifestations of the disease itself, the lesions are often of a spectacular character, yet it is most difficult to state whether these lesions are the cause or the effect of the convulsions, or whether they are in any way correlatable with epilepsy."

In this connection it might also be added, regarding the significance of gross brain lesions to the cause of epilepsy, that, in the recent review of a large series of brain tumor cases at the Neurological Institute, fifty-two out of fifty-three never exhibited generalized epileptiform convulsions at any time during the course of the disease.

However, without further discussion as to whether the lesions tabulated bear any causative significance so far as the occurrence of convulsions is concerned, let us view the list of lesions included here, merely from the standpoint of a surgeon hoping to cure epilepsy by operating on the head. It is apparent immediately why observers at Craig Colony, despite the great number of gross lesions that they have enumerated, have been impressed by the fact that it is rare to find at necropsy a lesion which might have been benefited by operation during life. Not only this; but necropsies there on patients operated on during life showed almost constantly postoperative adhesions of the meninges to bone or cortex. Surgeons who propose operating on the heads of epileptics might do well to read Munson's ¹ paper on this point.

The fallacy of operating on the heads of epileptics, therefore, in an effort to find and remove some suspected focus of irritation, is demonstrated by these few points concerning gross brain lesions, which may be thus summarized: 1. It is an error to assume that gross brain lesions exist in or about the brain in the average unconfined epileptic in any percentage of cases approximating that given out by institutions for the epileptic, such as Craig Colony and the Monson State Hospital. 2. It is not proved or even intimated that the gross brain lesions enumerated in the statistics of these institutions are primary causes of the disorder. 3. The character of the gross brain lesions described precludes practically always the possibility of successful operative interference. 4. Necropsies on patients operated on showed almost constantly postoperative adhesions. 5. The results of operation, to say the least, are unsatisfactory.

BRAIN TUMOR

Some operations are undertaken, too, on epileptics in the belief that a series of abortive or localized

1. Munson, J. F.: End-Results of Head Surgery in Epilepsy, New York State J. M. 12: 638, 1912.

attacks must surely be caused by a tumor or other gross disease of the motor cortex. Apropos of this point there are two facts concerning epilepsy which, if more generally appreciated, would save many epileptics from a useless operation on the head: 1. The incomplete or abortive seizures which occur irregularly in the intervals between the major attacks of epilepsy are the complete seizures reduced to their initial symptoms. 2. However diversified these attacks may be, they are always or nearly always similar in the same subject.

Repeated incomplete convulsions, therefore, since they always affect the same limb, appear almost compellingly suggestive of circumscribed disease of the motor cortex in the area which represents this limb. This is especially true when paralysis supervenes from temporary exhaustion of the cortical elements by frequent attacks.

A patient presenting these conditions came to the Neurological Institute, Oct. 1, 1919. The localized attacks were so frequent and severe that a motor paralysis of the right hand and forearm occurred, accompanied by a complete loss of joint sensation at the wrist and at all joints below. Although he did not have general signs of brain tumor, he had been in imminent danger of operation on account of the persuasive evidence of the paralysis. Simple sedative treatment was commenced on the day the number of attacks had mounted to fifty-four (his worst day); and it decreased the number of convulsions at once. A week later they were arrested completely. The paralyzed hand then recovered slowly but entirely, so that two weeks after the convulsions had ceased, even the dexterity of the fingers in the formerly paralyzed hand equaled that of the unaffected hand.

This phenomenon occurred in a case of ordinary epilepsy which had got rather out of hand just before coming to the institute. Ten grains of sodium bromid, three times a day, with attention to some other details has completely controlled all attacks to this date.

Localized attacks are not infrequent in the course of ordinary epilepsy. In the absence of the well known signs of brain tumor, a history of having had generalized epileptiform convulsions determines the case to be in all probability one of ordinary epilepsy; for, whereas a generalized epileptiform attack may occur as an early sign of brain tumor, it has been shown recently by the study of a large series of cases at the Neurological Institute that this happens only rarely, once in every fifty-three cases.

It must be remembered that a loss of consciousness may occasionally precede, accompany or follow some one of the strictly one-sided attacks, being caused by a brain tumor in the region of the motor cortex. If the limbs on the other side of the body do not also become convulsed, mere loss of consciousness does not make the attack a *general* convulsion, and it is very important that it be differentiated from one because a localized attack with loss of consciousness has the same significance and localizing value as one in which consciousness is preserved.

HEAD INJURY

There is a more or less prevalent opinion that epilepsy is one of the likely outcomes of injury to the head. Statistics prove that this has no basis in fact. In the Franco-Prussian War, as a result of 8,985 non-fatal head injuries, only forty-six cases of epilepsy

developed, that is, about one in 200, or perhaps a little more frequently than it occurs in the civil population.

This might be considered a suggestion that generalized epileptiform convulsions will be instituted by head injury only in that individual whose unstable nervous system predisposes him to convulsions. Perhaps such a report would read more significantly if put thus: Of 8,985 persons receiving nonfatal head injuries, forty-six proved to be persons possessing a more or less generalized cortical instability, as a tendency to recurrent convulsions became manifest in them.

THE GASTRO-INTESTINAL TRACT

So much emphasis has been placed on abnormalities of the gastro-intestinal tract, and the relation of the superimposed condition of chronic intestinal stasis to convulsive seizures, that as one writer humorously says, it has almost appeared necessary to assume that every constipated person is a potential epileptic. The fact remains, however, that most constipated persons are not, and the absurdity of such an idea should become manifest on its mere statement.

However, not long ago a theory, with gastro-intestinal abnormalities as its basis, was evolved to explain epilepsy. Elaborate and unique details of the mechanism of a convulsion were described in the light of this theory. The cure advocated was a drastic surgical operation—a removal of the large bowel. As might be expected, very ungratifying results, to say the least, followed in the wake of an all too widespread trial of this treatment. The facts on which the cure was advocated were found later to be incorrect, and the whole explanation tumbled and was withdrawn by its exponent.

However, the end of it is not yet. For some reason the operation continues in sporadic popularity. This is not because anybody now believes in the existence of the particular organism described, pictured and purported to be the germ of epilepsy. It can not be because any one still believes that bands, adhesions, etc., in the bowel, cause absorption of bacteria into the blood stream. The persistence of the treatment probably has no better nor other excuse than that all too common fallacy, the belief that any accompanying physiologic irregularity in an epileptic must surely be the cause of the convulsions. And as there were published, with the series of articles advocating this operation for epileptics, numerous and impressive roentgenograms of the intestine in various states of stasis and abnormality, I think that perhaps a lingering memory of these must be exercising an unconscious influence on the therapeutics of the disorder.

Because it is a highly dangerous procedure and its results so futile, it seems worth while to give a moment's further consideration to the basic premise on which the support of such treatment must necessarily depend.

Are gastro-intestinal abnormalities present in epilepsy? In order to study this question, the Monsor State Hospital for Epileptics reviewed the protocols of its 280 necropsies on epileptics. Intestinal adhesions and peritoneal bands were present in 17.8 per cent of the cases. By the same process with 775 necropsies at the Boston City Hospital, 18.3 per cent., a slightly larger percentage, was arrived at for nonepileptics. When each portion of the gastro-intestinal tract was compared separately, this relative sameness was found to apply throughout.

The treatment is a product of fallacious reasoning on erroneous premises, and it becomes obvious that convulsions are no indication for surgical exploits on the bowel. Such cures for epilepsy deserve nothing but the severest condemnation.

THE PSYCHOGENIC THEORY

The psychogenic theory for epilepsy came into being about five years ago when the bubble, as it seems to me, of freudian analysis, on which it was based, was blown to its fullest.

Some diffidence in making a postmortem statement regarding a theory might be expected from one who for a time gave it some credence. But any details concerning it seem unnecessary when it is considered that there must now be few who believe that convulsion is a direct and purposeful attempt of the mind to supplant the pain of an unpleasant reality, with what pleasure might be anticipated, from a temporary and imaginary resumption of prenatal existence. There may be, however, many who believe that in a more general way psychic influences, such as fright, grief and worry, are potent causes of epilepsy. Here we must differentiate between a primary direct cause and a mere inciting factor of the first attack in predisposed persons. Gowers, who wrote years ago that "as a direct excitant of the first attack intense sudden alarm takes the first place," also made it clear that he considered such excitant but the spark that lights up the fit phenomenon in a person in whom there already exists a more or less generalized cortical instability. That apart from the view intimated by his statement, mind or emotion even in a more general way as expressed by fright, grief or worry can ever be considered a primary causative factor of epilepsy is put in question by the overwhelming contrary evidence supplied by the late war, which proved a great laboratory for the testing of such ideas as this, for in the war all disturbing psychic influences were present in tremendous force. Epilepsy, however, did not often occur. In fact, it was actually rare at the front in the American Army from which recruiting officers had previously excluded with fair diligence all men having a history of convulsions.

When the great frequency of the war neuroses is thought of, in comparison to the relative infrequency of war-evoked epilepsy, psychic shock and strain pale into insignificance as a cause for convulsions in a normal person.

Psychotherapeutic treatment, no matter of what kind, proves by itself absolutely ineffectual as a cure for epilepsy. Any such plan of treatment, if it at the same time denies the unstable epileptic cortex the benefit that certain remedies have been proved to bestow, is wrong, and in my opinion negligent.

THE PITUITARY GLAND

The pituitary gland possesses a strange proclivity to evoke suspicion toward itself as being the source of incomprehended ailments. Although already much maligned, this is probably the only reason for its first becoming accused of having to do with epilepsy. Pituitary extract as a remedy for epilepsy seems thus to have originated on a basis of pure empiricism, although a few feeble facts have been marshaled in its support.

Chief of these is that an abnormality in the sella turcica is found by the roentgen ray in an occasional

epileptic. It is hardly necessary to say that misinterpretations and fallacies are responsible for many of the reports of deformed, closed and small sella turcicas.

Then it must be remembered that abnormality in size of the sella turcica by no means implies abnormality in the size of the pituitary gland or abnormality in its functioning.

Could the pituitary gland be proved enlarged or undersized in epileptics there would be more excuse for the effort to link up pituitary dysfunction with the cause of epilepsy. However, statistics show that abnormality in size of the pituitary gland occurs but rarely in an epileptic. In the last two years, 203 brains of epileptics were examined at Craig Colony, and in only five could the pituitary gland be considered either larger or smaller than normal. Then, too, there are certain well marked clinical syndromes which occur in dysfunction and disease of the pituitary gland. Convulsions have never been mentioned as a part of these syndromes. In a recent review of 160 brain tumor cases at the Neurological Institute there were eighteen in which the tumor definitely involved the pituitary gland. In not one of these cases did convulsive phenomena of any kind occur.

Nevertheless, pituitary extract for epilepsy has ardent advocates. Not long ago one of these advocates² presented good evidence of its comparative futility, even in epileptics considered to be showing definite indications of pituitary disorder, although unintentionally, as the paper was written in a laudatory endeavor. The study is based on 200 cases of epilepsy, all but twenty-eight of which are at once excluded as not being suitable for the treatment. Its uselessness is thereby at once exclaimed for 86 per cent. of all epileptics! Pituitary gland was fed to the remainder, and as most of these had been taking bromid previously, "this was allowed to be continued." The cures at the author's own rating are four. For the series this would mean one in fifty; for the selected twenty-eight considered to have pituitary disorder, one in seven. The latter result is about half as good with both bromid and pituitary extract as one would expect to obtain with small doses of bromid alone according to such well known statistical tables as that published by Aldren Turner, whose patients completely cured with small doses of bromid alone were 23.5 per cent., or almost one in four.

And yet such reports as the one considered here, to the mere glance of the hurried reader, often seem impressive, and it is not unlikely that this one alone greatly increased the consumption of pituitary extract.

ALCOHOL

Recently it has been authoritatively stated that alcohol as an etiologic factor in the production of insanity has been overrated. There is no doubt of this being true as regards epilepsy. Of course, pathologic alcoholism in the ancestors of epileptics is common. But, like a history of insanity, it is chiefly important merely as evidence that in these ancestors a neuropathic defect existed. That is, alcoholism is a sign of something, but by no means necessarily a cause for anything. When an estimation of the proper relation of alcohol to epilepsy is involved, this difference must be appreciated.

2. Tucker, B. R.: Role of Pituitary Gland in Epilepsy, *Arch. Neurol. & Psychiat.* 2: 192 (Aug.) 1919.

For instance, Dejerine asserts that in France one half of the cases of epilepsy among children are due to alcoholic parents. Now, whereas the defect in the nervous system of the parents is perhaps unquestionably responsible for the defect in the nervous system of the child, an assumption that to the alcohol imbibed by the parents is due the epilepsy in the child is far from justified. Alcohol cannot be considered to father epilepsy merely because a man addicted to alcohol fathers a child addicted to convulsions. Such is very obviously a fallacious deduction. However, it is possible that excessive alcoholism in a pregnant woman may interfere with the proper development of the nervous system of the embryo, and so in some instances epilepsy may seem quite properly attributable to alcohol. But otherwise, alcoholism as a direct primary cause of epilepsy has not been proved. There are many who consider that as such it has been misapprehended. They believe the so-called rum-fits to be indicative merely of a dormant epilepsy. Indeed, when we compare the frequency of acute alcoholism with the infrequency of rum-fits, this view does seem plausible.

A study of the relation of alcohol to convulsions was undertaken at the Monson State Hospital for Epileptics. As a result of this study, the statement was made that "in a perfectly stable and well adjusted nervous system, alcohol per se is not sufficient to produce convulsions."

It is not my intention to underestimate the importance of alcoholism in the parents as an evidence of neuropathic stock, or to underestimate the importance of alcoholic intoxication as an irritant to sensitively balanced nervous systems, or to disregard the effect of alcoholic poisoning on the nervous system of the developing embryo. It is my object merely to call attention to the fallacy of assuming that because an epileptic drinks, or his parents drank, such facts make sufficient evidence for generalizations concerning the cause of epilepsy.

EYESTRAIN

Eyestrain may hardly seem worth mentioning, but it is believed by some to be the cause of epilepsy. Indeed, the epileptic eye has been spoken of.

At the Monson State Hospital for Epileptics, "Eyes are marked by no distinguishing feature." Hodskins and Moore³ obtain no positive findings. In fact, evidence was produced to prove that eyestrain was not of any importance as a primary etiologic factor in epilepsy.

CONCLUSION

Perhaps the best and most practical view for the general practitioner to adopt is that epilepsy means a tendency to recurrent convulsions, that such a tendency implies a more or less generalized cortical instability, and that epilepsy is therefore not properly due to any cause outside the brain.

Then, too, it is not an incurable disorder. In fact, treatment in accord with the view just mentioned has for years proved more or less effectual when well carried out. For instance, William Aldren Turner of the National Hospital for the Paralyzed and Epileptic in London, an indisputably eminent authority on this subject, gave some figures in 1910 which might be considered accurate proof of this. He published statistics

of a large series of cases, many observed for as long as twenty-two years, in which small doses of bromid alone had cured entirely 23.5 per cent., or about one epileptic in every four, and greatly benefited another 50 per cent.

At the Neurological Institute we find that practically all epileptics of the class who live at home and are able to visit the hospital derive great benefit from treatment. A cerebral sedative is used almost always, and this is combined with what other remedies or treatment a study of their physiologic processes and particular difficulties suggests.

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EPIDEMIC INFLUENZA AT THE COOK COUNTY HOSPITAL *

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AND

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True to the history of pandemics of influenza of the nineteenth century prepared by Leichtenstern,¹ the great outbreak of last year has been followed by epidemic outbreaks chiefly in the larger cities. So far as conditions at Cook County Hospital obtain, Chicago was invaded early in January, 1920, and during the five weeks ending February 15, 1,128 patients were admitted to this institution. There were 264 deaths among this number, a mortality of 23.4 per cent., as compared to the rate of 31 per cent. at this hospital in the recent pandemic.

The crest of the epidemic (Chart 1) as indicated by admission to this hospital was reached on January 20, after a duration of about ten days. The secondary rise both in admissions and deaths occurred about January 30. This corresponds to the marked increase in the number of patients admitted with pneumonia.

Because of the rather limited hospital facilities, instructions were issued to the examining physicians to accept for hospital care only those patients that were really ill. With such a rule in effect, the distribution of the first 839 patients as shown by the diagnosis on admission to the ward was: influenza, 503, or 60.7 per cent., of which forty-six, or 9.1 per cent., developed pneumonia during their stay in the hospital; influenzal pneumonia on admission to the hospital, 326, or 39.3 per cent. Of the 326 patients admitted with pneumonia, 205 died, a mortality rate of 62.9 per cent. The patients who developed pneumonia in the hospital include, among others, children, patients in obstetric wards, and patients suffering from chronic diseases. In this group of forty-six cases there were twenty-six deaths, a mortality rate of 47.8 per cent.

The unfavorable effect of pregnancy on the prognosis as noted by observers in previous epidemics is again brought out. Of the forty-eight women admitted to the obstetric ward with influenza, twenty-four died, a mortality rate of 50 per cent.

There were two age periods of greatest number of admissions (Chart 2): one from birth to 10 years, and one between the twentieth and fortieth years.

Of the adult admissions, 59.8 per cent. were males and 40.2 per cent. were females, a relationship prac-

3. Hodskins and Moore: The Relation of Eyestrain to Epilepsy, J. Ophth. & Oto-Laryngol. 2: 169-175, 1908.

* From the Laboratory of the Cook County Hospital.
1. Leichtenstern, Otto: Influenza, Ed. 2, by George Sticker.

ically identical to the percentages of last year, 59.2 of males and 40.8 of females,² respectively.

CLINICAL PICTURE

The clinical picture was in all essentials like that described during the previous outbreaks of the disease. The onset was abrupt, with the features of acute

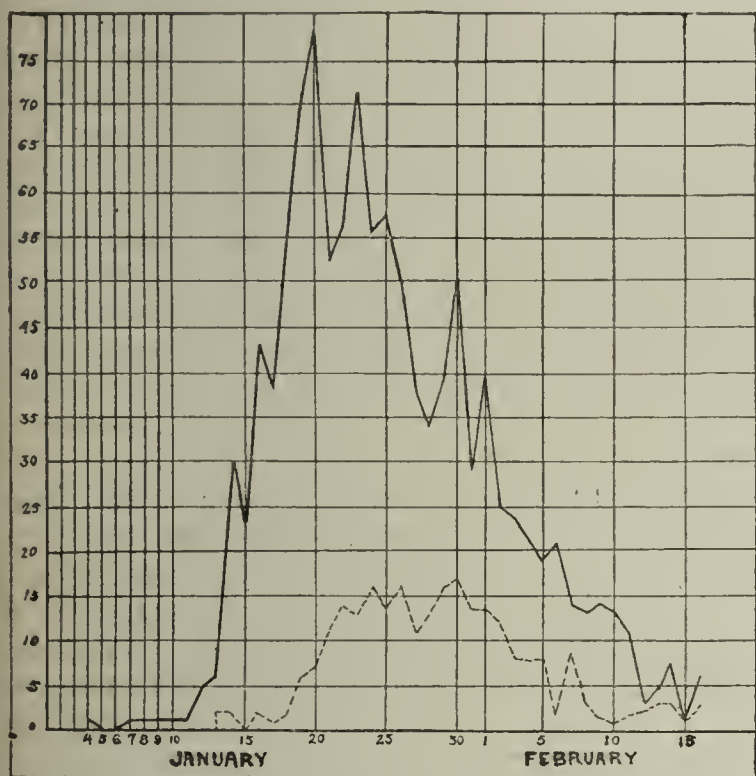


Chart 1.—Duration of the epidemic as shown by daily admissions (solid line) and deaths (broken line).

catarrhal fever. The prostration and debility were all out of proportion to the demonstrable pathologic changes. Among the common complaints were coryza, headache, retrobulbar pain, backache, chilly sensations, muscle pains and later cough which characteristically was productive of thick, greenish-yellow sputum. Gastro-intestinal symptoms were not infrequent and included nausea, vomiting, diarrhea and sometimes abdominal pain. Of the nervous symptoms noted, there were delirium, meningismus and rarely melancholia or dementia.

Physical examination revealed flushed face, injected conjunctivae, and erythematous rash of the face, neck and shoulders. The mucous membrane of the soft palate and pharynx was injected and sometimes presented petechial hemorrhages. The pulse rate was increased; the respirations ranged between 20 and 30 per minute, and the temperature from 101 to 104 F. Leukopenia was the rule, and the average leukocyte count of twenty-five influenza patients was 6,500. In uncomplicated cases the average stay in the hospital was seven days.

Pneumonia was the most serious complication. It is to be suspected in patients whose temperature remains high after the sixth or seventh day. The early chest findings were obscure. Later, patchy consolidation usually could be demonstrated. In the grave cases marked cyanosis of the patient was common. A moderate leukocytosis of from 12,000 to 16,000 was usually observed. Other common complications were empyema, otitis media, sinusitis, meningismus and auricular.

MORBID ANATOMY

The external appearance of the bodies of those who had died from influenzal pneumonia was characteristic.

The postmortem lividity was extensive, involving the head, trunk and extremities. Not infrequently a bloody, frothy fluid exuded from the nostrils and mouth.

The tracheobronchial mucosa was generally reddened, and the small blood vessels were engorged. In their lumens, mucous, mucopurulent or hemorrhagic secretion was present. The tracheobronchial lymph glands were usually engorged with blood and were edematous.

Early in the disease, the lung involvement was chiefly lobular, with hemorrhagic, catarrhal or purulent exudate containing scarcely no fibrin. The surfaces made by cutting were mottled, firm and granular, with dark red congested areas of aerated lung tissue intervening. Large quantities of bloody fluid bathed the cut surfaces. Thick purulent material commonly oozed from the small bronchi. Serous or serosanguineous fluid was frequently found in the pleural cavities. Later in the course of the disease, the amount of fibrin increased and the exudate became gray and often purulent. Plastic pleuritis was not infrequent. It was noteworthy that at two necropsies, empyema was present with the pus between the mediastinal pleura and the hilum of the lung, while the lateral surface of the lung was adherent to the chest wall by fibrinous adhesions, causing obliteration of the pleural cavity. This finding accounted for the inability to aspirate pus on thoracentesis after empyema had been diagnosed in the ward.

The liver and kidneys were usually heavier than normal and were the seat of parenchymatous and fatty changes.

TECHNIC OF BACTERIOLOGIC STUDIES

Beef infusion agar and broth were the two basic mediums used. The reaction was adjusted to neutrality to phenolphthalein before autoclaving. For cultivating *B. influenzae*,

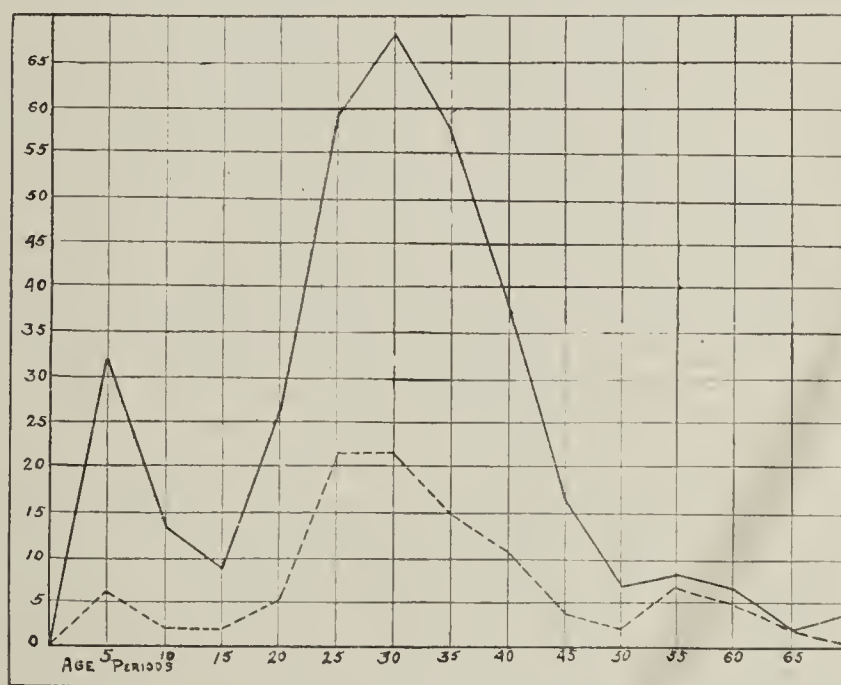


Chart 2.—The relationship of age to the number of admissions (solid line) and deaths (broken line) during the epidemic period.

the agar at 90 C. was enriched by the addition of 5 per cent. defibrinated horse blood. Plates were poured after this added blood had become a chocolate brown. These agar surfaces were inoculated from throat swabs and with the sputum of the patients studied. In the early studies, sputum was injected intraperitoneally into white mice, and plate cultures were made from the peritoneal exudate and from the heart blood of the mouse at necropsy. This was later discontinued when it became apparent that in practically all cases *B. influenzae* was demonstrable in direct cultures of the throat or sputum.

2. Keeton, R. W., and Cushman, A. B.: The Influenza Epidemic in Chicago, J. A. M. A. 71: 1962-1967 (Dec. 14) 1918.

Well separated giant colonies of *B. influenzae* were usually to be found on these plates, and pure cultures could easily be recovered. The identification of *B. influenzae* rested on its cultural characteristics on the brown blood agar, and its failure to grow on hemoglobin-free agar, as well as its morphologic and staining characteristics.

For pneumococcus identification and typing, the mouse method was used, freshly collected sputum being employed. Red blood plate cultures were made from the peritoneal exudate and from the heart blood of the mouse at necropsy; and single colonies of pneumococcus, picked from these plates, were grown on red blood agar slants. After about eighteen hours' incubation, a tube (5 c.c.) of infusion broth was poured over the slant and incubation continued for a period sufficient to yield adequate growth in the broth for agglutination and bile solubility tests.

In the ward surveys for hemolytic streptococci, this technic was employed:

Beef infusion agar (0.3 per cent. acid to phenolphthalein) was prepared and stored in from 300 to 500 c.c. amounts. On melting and cooling the agar below 45 C., sterile defibrinated horse blood was added in amounts sufficient to make up 5 per cent. of the volume of the agar. Thorough mixing and pouring into petri dishes (10 cm. in diameter) followed.

Throat cultures of all patients in the ward were made on the day of study. In taking the culture, a small cotton swab was touched first to the posterior pharyngeal wall in order to produce gagging. This caused the tonsils to protrude toward the midline and placed a slight tension on the capsule, which tended to press material from the crypts. The surfaces of both tonsils thus protruding were quickly brushed and the swab withdrawn without touching other parts. These swabs were carried to the laboratory in sterile test tubes and were used at once to inoculate the blood agar plate surfaces.

The swab was touched lightly to the agar surface at two points, one near each extremity of a given diameter of the plate. The swab stick was turned between the fingers through one revolution so as to bring all points of the swab in contact with the agar. The inoculum was spread by means of an inoculating wire slightly curved at the end. After passing the wire several times over the points of inoculation, multiple streaks and cross streaks were made, avoiding further contact with the points of primary inoculation. With a little experience this method furnished well seeded plates, presenting colonies widely enough separated to render plate reading easy.

Careful preparation of mediums, and a rigid technic for throat swabbing and for seeding the plates are prime requisites which cannot be emphasized too strongly in any method of direct throat culture. Lack of care in any one of these particulars does much to vitiate the results obtained. In properly prepared cultures, the recognition of hemolytic streptococci is very simple.

In these ward surveys, plate readings, supplemented by a Gram stain of typical hemolytic colonies, were employed as the means of identification of hemolytic streptococcus carriers. Colonies producing typical hemolytic zones of the Beta type of streptococcus (Smith and Brown) were picked from all cultures in which they appeared after twenty-four hours' incubation, and were stained. Cultures presenting hemolytic colonies, which on staining showed gram-positive cocci in chains, were regarded as positive for hemolytic streptococci. Further confirmatory studies were not made.

These surveys at ten day intervals were instituted to determine the prevalence of hemolytic streptococci in the wards rather than to follow the bacteriology of any particular patient. They were employed as a clinical aid in a system of ward management aimed at minimizing dangerous contact dissemination of hemo-

lytic streptococci. The methods used enabled the prompt reporting of hemolytic streptococcus carriers and their early isolation, both of which are matters of extreme importance in the management of wards caring for influenza and pneumonia patients.

STUDIES OF ACUTE INFLUENZA

A group of twenty-two patients was studied by means of throat and sputum cultures on brown blood agar, together with the inoculation of sputum into the peritoneal cavities of white mice, and subsequent cultures of the peritoneal exudate and the heart blood were made both on red and brown blood agar plates. This triple means of study enabled a determination of the occurrence of *B. influenzae*, pneumococcus and hemolytic streptococcus, which was: *B. influenzae*, twenty-two times, or 100 per cent.; pneumococcus, Type I, none; Type II, one; Type II, atypical, five; Type III, one, and Type IV, nine; total, sixteen, or 72.7 per cent.; hemolytic streptococcus, twice, or 9.1 per cent.

A second group comprises forty-five cases of acute influenza, which were studied only by throat and sputum cultures. These cultures were made on the brown blood agar, and no attempt was made to identify organisms other than *B. influenzae*. *B. influenzae* was isolated and identified in forty-three of these cases, or in 95.5 per cent. Of this group, cultures were made of eighteen patients in the receiving ward of the hospital, of which number, only throat cultures were made in six cases. The two patients that were negative for *B. influenzae* were in this group of six.

In the first series in which a study was made by all three methods, *B. influenzae* was found in 100 per cent. of the cases. These results are in accord with those obtained last year at Camp Pike by Opie³ and his co-workers.

The second group demonstrates that *B. influenzae* can be found in practically every case by the less elaborate methods, when cultures are made on brown blood medium. It should be emphasized that this medium appears to be more or less selective for growing the Pfeiffer bacillus.

BACILLUS INFLUENZAE IN NONINFLUENZAL PATIENTS

Cultures for *B. influenzae* were made of a group of patients, with conditions other than influenza or other respiratory diseases, examined in the receiving wards of the hospital during the height of the epidemic. Of the thirty patients of whose throats and sputums cultures were made, *B. influenzae* was isolated in twenty-one, or 70 per cent.

In a second series, twenty-six patients hospitalized before the epidemic in the tuberculosis ward, *B. influenzae* was identified in sputum and throat cultures in nine instances, or 34.6 per cent.

These studies furnish two control series. The first represents patients arriving at the hospital during the height of the epidemic, and can be regarded as a group showing the prevalence of the Pfeiffer bacillus in persons outside the hospital during the period of the epidemic. The relatively high incidence of this organism in the foregoing series is comparable to the reported findings⁴ in normal persons during the pan-

3. Opie, E. L.; Freeman, A. W.; Blake, F. G.; Small, J. C., and Rivers, T. M.: Pneumonia Following Influenza, J. A. M. A. 72: 556-565 (Feb. 22) 1919.

4. Stillman, E. G., and Pritchett, I. W.: J. Exper. Med. 29: 295 (March) 1919.

ic of 1918, and may be regarded as illustrating the dissemination of the bacillus during epidemic periods.

The second group represents patients hospitalized before the epidemic, and may be regarded as illustrating the prevalence of Pfeiffer's bacillus during the epidemic periods.

PNEUMONIA STUDIES

A group of thirty-two cases studied bacteriologically presents the bacteriology of the pneumonia of influenza as it occurred in cases chosen at intervals in the hospital wards throughout the course of the epidemic. The occurrence of the various organisms was: pneumococcus, Type I, two times; Type II, one; Type II, atypical, six; Type III, five; Type IV, thirteen; total, twenty-seven, or 84.4 per cent.; hemolytic streptococci, one; pneumococci, one; with no pneumococci, five; total, six, or 18.7 per cent.; *B. influenzae*, twenty-four, 75 per cent.

The types of pneumococci occurring in the mouths of normal persons were found in practically 90 per cent. of the pneumococcus pneumonia cases of this group. The parasitic types, I and II, occurred infrequently, Type I only twice, and Type II once. These findings are in accord with those reported for the pneumonia of the 1918 pandemic of influenza by various observers.

Hemolytic streptococci occurred in approximately one-fifth of the cases. In those studied early, hemolytic streptococci were not found. All instances in this group in which hemolytic streptococci appeared were among patients studied within the latter half of the epidemic. *B. influenzae* was present in three-fourths of these cases.

WARD SURVEYS FOR IDENTIFICATION OF HEMOLYTIC STREPTOCOCCI

The dissemination of hemolytic streptococci through the wards in which acute respiratory diseases were treated, and the dangers attending such dissemination, have been emphasized recently.⁵ In two of the wards, repeat cultures of all patients under treatment were made at intervals of about ten days. The cultural methods have been described. Since many cases of

TABLE 1.—RESULTS OF CULTURES TAKEN FOR HEMOLYTIC STREPTOCOCCI IN WARD A

Date	Cultures		Cultures Positive for Hemolytic Streptococci	
		Number	No.	Per Cent.
Jan. 24		24	4	16.7
Feb. 3		33	1	3.3
Feb. 12		4	2	50.0

pneumonia terminated fatally in less than ten days. In many patients with influenza were discharged within a shorter period than this, the study furnishes repeated cultures on individual patients during the course of their illness. The repeated ward surveys indicate the incidence of hemolytic streptococci in the wards during the period of their use for the care of influenza and pneumonia patients. The results of this study have been:

In Ward A, from January 18 to February 13, the total number of patients treated was 125; the total num-

ber of pneumonia patients treated in the ward was fifty-seven, and the total number of deaths in the ward was forty-one.

Of the four patients positive for hemolytic streptococci on the first survey, three developed no complications of influenza and left the hospital before recultures were made of the patients in the ward. They had been in the hospital four, six and seven days, respectively, before cultures were taken. The fourth patient was admitted with influenzal pneumonia nine days before the culture was made, and died of pneumonia, January 28. Cultures had been taken previously of each of the three patients identified as hemolytic strep-

TABLE 2.—RESULTS OF CULTURES TAKEN FOR HEMOLYTIC STREPTOCOCCI IN WARD B

Date	Cultures		Cultures Positive for Hemolytic Streptococci	
		Number	No.	Per Cent.
Jan. 24		64	15	23.4
Feb. 3		70	14	20.0
Feb. 12		22	12	54.2

tococcus carriers on the second and third ward surveys and had been found to be negative. They were patients that had acquired hemolytic streptococci in the hospital. Two of these patients had pneumonia on admission. Both died: the first, three days after the identification; the second, eight days after the identification. In neither patient was a diagnosis of empyema made.

The results show that the incidence of hemolytic streptococci in this ward was never high. The complications (other than pneumonia) developing among the fifty-two patients studied are in accord with this finding. They are two cases of empyema, one due to pneumococcus Type II, atypical, and the other showed *Streptococcus viridans* and staphylococci on culture. One case of otitis media occurred, the bacteriology of which was not determined.

2. In Ward B, from January 19 to February 13, the total number of patients treated was 184; the total number of pneumonia patients treated in the ward was 101, and the total number of deaths in the ward was fifty-six.

The figures in Table 2 indicate that there was a wider dissemination of hemolytic streptococci in Ward B than in Ward A. Four cases of empyema occurred in Ward B, all due to hemolytic streptococci.

Of the fifteen patients whose throats gave cultures positive for hemolytic streptococci, January 24, five had pneumonia. Three recovered without further complication. The fourth died of pneumonia, and the fifth developed a hemolytic streptococcus empyema, diagnosed, January 4, and is at present under treatment in a surgical ward. The remaining ten were patients with influenza, of which number, all recovered without complication.

Of the fourteen patients whose throats gave cultures positive for hemolytic streptococci, February 3, twelve had pneumonia, of which number, two had been positive and one negative for hemolytic streptococci on previous culture. Of the remaining nine, two developed hemolytic streptococcus empyema. One of these died, February 7; the other is convalescent. Of the remaining seven patients, one died of pneumonia. Two patients with influenza recovered without complication.

Previous cultures had been made in the twelve cases, positive, February 12. One patient had had two posi-

Opie, et al. (Footnote 3). Cole, Rufus, and MacCallum, W. G.: Pneumonia at a Base Hospital, J. A. M. A. 70: 1146 (April 20) 1918. R. L., and Alexander, H. L.: The Predisposition of Streptococcus to the Complications of Measles, J. A. M. A. 70: 1827 (June 1918).

tive and another one positive culture. Both recovered from the pneumonia without complication. Of the remaining ten patients negative on previous cultures, one recovered from uncomplicated influenza, and nine had pneumonia. One died of uncomplicated pneumonia, February 15. Two were discharged as recovered. Six are under treatment for pneumonia, and two of these have developed otitis media.

In addition to the complications mentioned, a few cases of otitis media developed among patients whose throat cultures were negative for hemolytic streptococci. The bacteriology of the cases of otitis media was not determined.

The red blood agar plates used in the ward surveys for hemolytic streptococci were also studied for *B. influenzae*. These results are of interest in showing the relative incidence of *B. influenzae* among the ward patients studied at various intervals throughout the course of the epidemic. They are not presented to give actual incidence of *B. influenzae* because the methods employed are less reliable for the isolation of this bacillus than those employed for determining actual incidence.

A summary of the studies of the cases in the two wards is given in Table 3.

It has been mentioned that early in the course of the epidemic the wards had under treatment more patients with influenza than with pneumonia, but that later the number of patients with pneumonia predominated. In the summary given in Table 3, all ward patients were

TABLE 3.—RESULTS OF STUDY OF CULTURES
TAKEN FOR *B. INFLUENZAE*

Date	Cultures Number	Cultures Positive for <i>B. Influenzae</i>	
		No.	Per Cent.
Jan. 24	76	67	88.2
Feb. 3	102	60	58.4
Feb. 12	26	3	12.0

included, i. e., both influenza and pneumonia patients. The results indicate a decrease in the relative incidence of *B. influenzae* in the later periods of the epidemic when the larger part of the patients in the wards had pneumonia.

SUMMARY

About one third as many patients suffering from influenza or its complicating pneumonia were treated in this hospital during the present epidemic as were treated during the pandemic of 1918.

Of the 829 patients whose cases were analyzed, 503, or 60.7 per cent., were admitted with a diagnosis of influenza, and 326, or 39.3 per cent., with a diagnosis of pneumonia. Many of the latter were moribund on admission to the hospital. Of these 326 pneumonia patients, 205 died, a mortality rate of 62.9 per cent.

Forty-six, or 9.1 per cent., of the patients admitted with influenza developed pneumonia, and twenty-six, or 47.8 per cent., of these died.

B. influenzae was isolated by the multiple culture methods from 100 per cent. of the patients studied, and by the direct sputum and throat culture method from 95.5 per cent.

Pneumococci were found in 84.4 per cent. of the cases of pneumonia studied, and for the most part are represented by the types of pneumococci found in the mouths of normal persons. Hemolytic streptococci were found in 18.7 per cent., and *B. influenzae* in 75 per cent. of these cases of pneumonia.

One of the wards showing active dissemination of hemolytic streptococci furnished four cases of empyema, all due to hemolytic streptococci. Two cases of empyema, both due to organisms other than hemolytic streptococci, occurred in a second ward where these organisms were less prevalent.

CONCLUSION

B. influenzae has been isolated and identified in 100 per cent. of the cases of acute influenza.

In the cases of pneumonia complicating influenza pneumococci predominate. They are chiefly of the types found in the mouths of normal persons.

Hemolytic streptococci occupy a prominent place in the complications of influenza and pneumonia.

ADDENDUM

We believe that a brief statement as to the hospital management during the epidemic will be valuable to illustrate the conditions under which these studies were conducted.

By condensing medical and surgical services, five wards were rendered available for the treatment of influenza and pneumonia patients admitted to the hospital during the period of the epidemic. These wards were opened one after another as needed. The wards were filled to capacity in the order in which they were opened. After the fifth ward had been filled, sufficient beds were becoming available in other wards to care for patients admitted subsequently.

Influenza and influenzal pneumonia patients were not treated in separate wards. Early in the epidemic period there were fewer pneumonia and more influenza patients than later when the pneumonia patient predominated among the admissions. In the latter part of the period the treatment wards became literally pneumonia treatment wards, the segregated uncomplicated influenza patients occupying much the smaller sections of the wards. The wards were supplied with sheet cubicles and otherwise equipped before receiving any patients.

These rules for the management within the wards were issued on the opening of the wards and served as a basis of the plan of ward management throughout the epidemic:

The cubicle system is to be used in all wards.

Paper bags will be provided and must be used for soil, napkins and gauze.

Hand disinfectant solutions will be provided for use by the physicians, nurses and attendants in passing from one patient to another.

Ward floors should not be dry swept, but must be scrubbed at intervals with compound solution of cresol in the water.

All physicians, nurses and attendants are required to wear gowns, caps and masks while in the ward.

Bed patients are not required to wear masks, but the mask will be strictly enforced on all patients leaving the cubicle.

Paper napkins are to be provided for bed patients, who will be instructed to cover the mouth and nose on coughing, sneezing, etc. These must be changed when soiled.

Attempt will be made to keep acute cases of influenza in the same section of the ward.

Attempt will be made to prevent the congregating of convalescents in toilets, bath rooms, etc.

The borrowing and lending of materials between patients is to be strictly prohibited.

Pneumonia developing in the influenza wards will be treated in separate sections of the wards, and medical asepsis strictly enforced in such section.

Cases of streptococcus pneumonia must be treated apart from those of pneumococcus pneumonia.

THE DELIRIOUS AND THE MENINGORADICULAR TYPES OF EPIDEMIC ENCEPHALITIS

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Since my last report¹ of a number of cases of epidemic encephalitis, I have become convinced that the same unknown virus produces clinical forms in which lethargy and other common symptoms of the characteristic "lethargic" form may be lacking. That we are dealing with the same disease is shown by the similarity in pathologic anatomy, the existence of transitional forms, and the occurrence of all these forms in the same community at the same time. Among the cases observed during the past winter, several have presented severe symptoms of a general infection suggestive of typhoid fever, acute miliary tuberculosis or other acute infectious disease. In other cases, verified by necropsy, the resemblance to severe, acute chorea was marked. Among new symptoms I, too, have observed the twitching of the abdominal muscles to which Thomas F. Reilly² has recently called attention.

One patient, now improving, had complete right hemiplegia with aphasia, and another patient, who died, had at different periods right and left hemi-

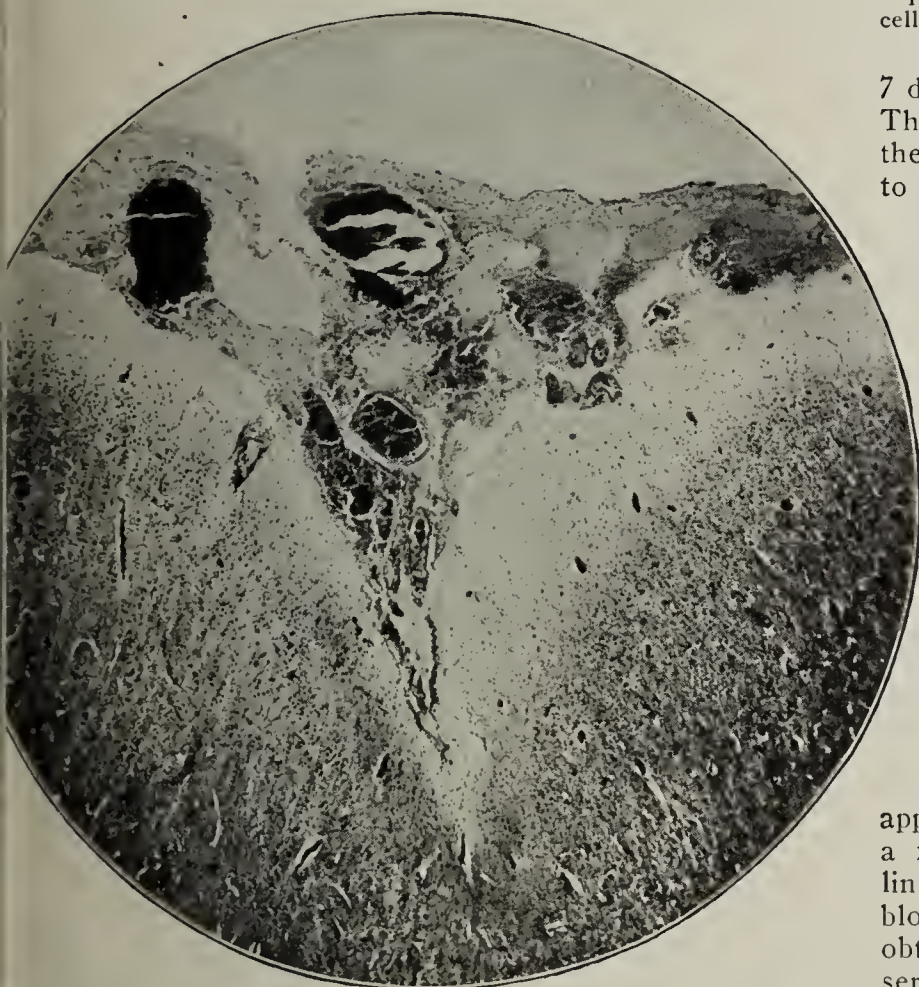


Fig. 1 (Case 3).—Motor cortex: congestion, hemorrhages, and edema of the pia; hematoxylin and eosin, $\times 25$.

legia. Pain in the extremities was a marked feature in a few otherwise typical cases, and serves to connect them with the type which I propose to designate meningoradicular." This bears some resemblance to

the so-called "infective neuronitis,"³ and will be discussed at the end of this paper.

REPORT OF CASES

CASE 1.—History.—A man, aged 36, seen at the Evanston Hospital with Drs. W. G. Alexander and W. G. Stearns, Nov. 12, 1919, two weeks previously when in an exhausted state from overwork and worry, had commenced to complain of headache, and pain in the right side of the neck and left arm. He became irrational, November 6, and on November

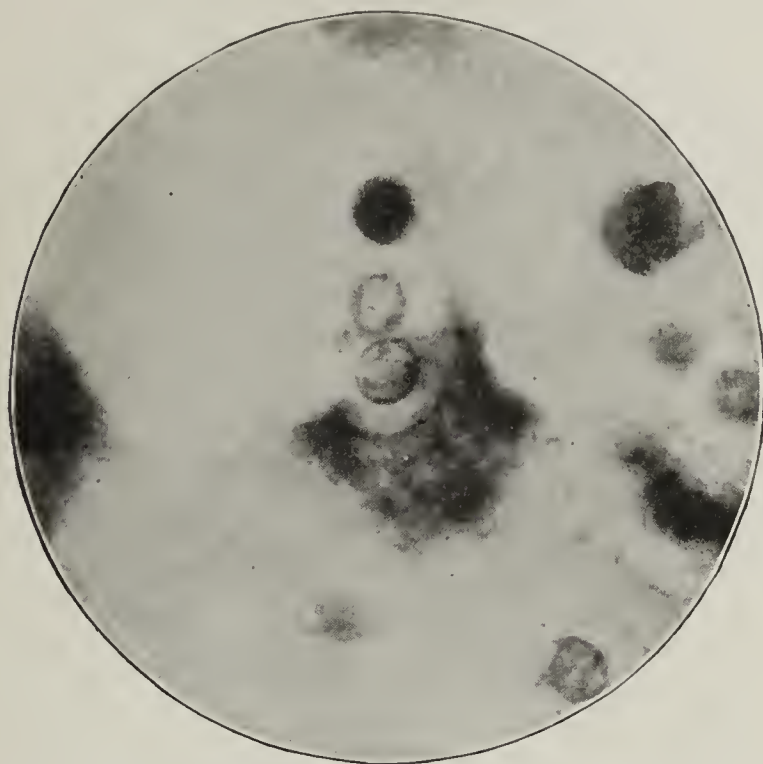


Fig. 2 (Case 3).—Motor cortex, deep layer: degenerated ganglion cell and satellites; $\times 1,200$.

7 developed diaphragmatic spasms which lasted for five days. The highest temperature observed prior to his admittance to the hospital, November 9, was 100.2 F. From November 9 to 16 it ranged from 100 to 102, pulse, 90 to 110, respirations, 20 to 25; November 18, the temperature was 102.2, then from 100 to 101 until November 26, after which time it was usually between 99 and 100. November 11, Dr. Stearns recorded "involuntary, irregular contractions of the diaphragm, extending over the upper trunk muscles, and accompanied by more or less coarse tremor."

Examination and Course.—The leukocyte count, November 11, was 17,600; November 12, 26,200; November 13, 19,000; November 19, 12,800; November 28, 9,200; December 8, 12,800; December 19, 12,600. November 12, Dr. C. J. Swan noted "spontaneous nystagmus which does not seem to be labyrinthine but is synchronous with contractions of the body muscles. Fundi normal." On that day I failed to find any paralysis or any abnormality in the reflexes. The patient was very restless and delirious, and the diaphragmatic spasm was continuous. On the following day, partial left ptosis appeared and remained a few days, and on November 29 transient right ptosis appeared. Lumbar punctures, November 14 and 25, yielded a fluid admixed with blood, so that cell count and globulin tests were of little value; but cultures with both blood and spinal fluid were negative. A clear fluid, obtained November 22, gave negative globulin and Wassermann tests and a cell count of 18. The Wassermann test with the blood was negative. While comparatively clear mentally part of the time, he was described, December 21, as stuporous and at times delirious, and at that time had to be catheterized for two days. During January he steadily improved, and by the middle of the month began to sit up. The mental condition became normal. In March he was said to be well.

CASE 2.—History.—A man, aged 38, seen at the Highland Park Hospital with Dr. L. M. Bergen, Nov. 13, 1919, had

1. Basoe, Peter: Epidemic Encephalitis (Nona), J. A. M. A. 72:971 (April 5), 1919.
2. Reilly, T. F.: Hitherto Undescribed Sign in Diagnosis of Lethargic Encephalitis, J. A. M. A. 74:735 (March 13) 1920.

3. Kennedy, Foster: Infective Neuronitis, Arch. Neurol. & Psychiat. 2:621 (Dec.) 1919.

complained of pain in the face and body, November 6, and took to his bed. The pain lasted only one day. After three days he became delirious and was admitted to the hospital in a state of restless delirium, November 11, with a temperature of 99.8, pulse, 116; respirations, 20. Insomnia was a marked feature.

Examination and Course.—November 12, the leukocyte count was 9,000; urine, normal. When seen in the evening of

mally. The tendon reflexes and the abdominal reflexes were not obtained, while the plantar reflexes were normal. The heart and lungs were negative. The urine contained albumin, and one granular cast was seen. Lumbar puncture yielded a clear fluid under normal pressure with a cell count of 150 lymphocytes, negative Nonne-Apelt globulin test, and a practically negative Lange test (0011100000). The temperature, January 31, ranged from 102 to 103.6; the pulse rate from 110 to 132. January 1, the delirium and continuous movements persisted and the temperature rose from 102.4 to 106.4. She died at noon on that day.

Necropsy.—Dr. Beers informed me that the viscera were normal except for cloudy swelling of the liver. The brain, when received by me in 10 per cent. liquor formaldehydi, presented no gross changes externally or on section except considerable congestion. No hemorrhages were visible to the naked eye.

Histologic Examination: Lower medulla: very slight mononuclear infiltration of pia; well marked perivascular infiltration throughout; cells mononuclear. Upper medulla: similar changes but less marked; very little change in the ganglion cells. Cerebellum: very slight cell infiltration of meninges; no distinct perivascular infiltrations; some of the Purkinje cells showed degenerative changes with their nuclei obscured and presence of satellites. Pons: meningeal cell infiltration slightly more marked than in medulla; one small subpial hemorrhage was seen, also a very few and small recent hemorrhages in the interior; several fairly dense perivascular infiltrations were present. Crus and midbrain: perivascular infiltrations similar to those in lower medulla; a few small hemorrhages were seen; ganglion cells were, on the whole, well preserved, and satellitosis was slight; there was no distinct perivascular infiltration. Right motor cortex: pia congested with extensive hemorrhage in one of the sulci, but only slight cellular infiltration; cortical vessels engorged with a slight increase in lymphocytes in the adventitia, but no distinct perivascular collars; the ganglion cells took the stain well and had distinct nuclei; satellitosis was rather pronounced, especially about the smaller cells; a few ganglion cells were decidedly degenerated, with loss of nucleus and pulverization of the Nissl bodies; other cells appeared narrow, with total loss of cell structure (cell sclerosis); some

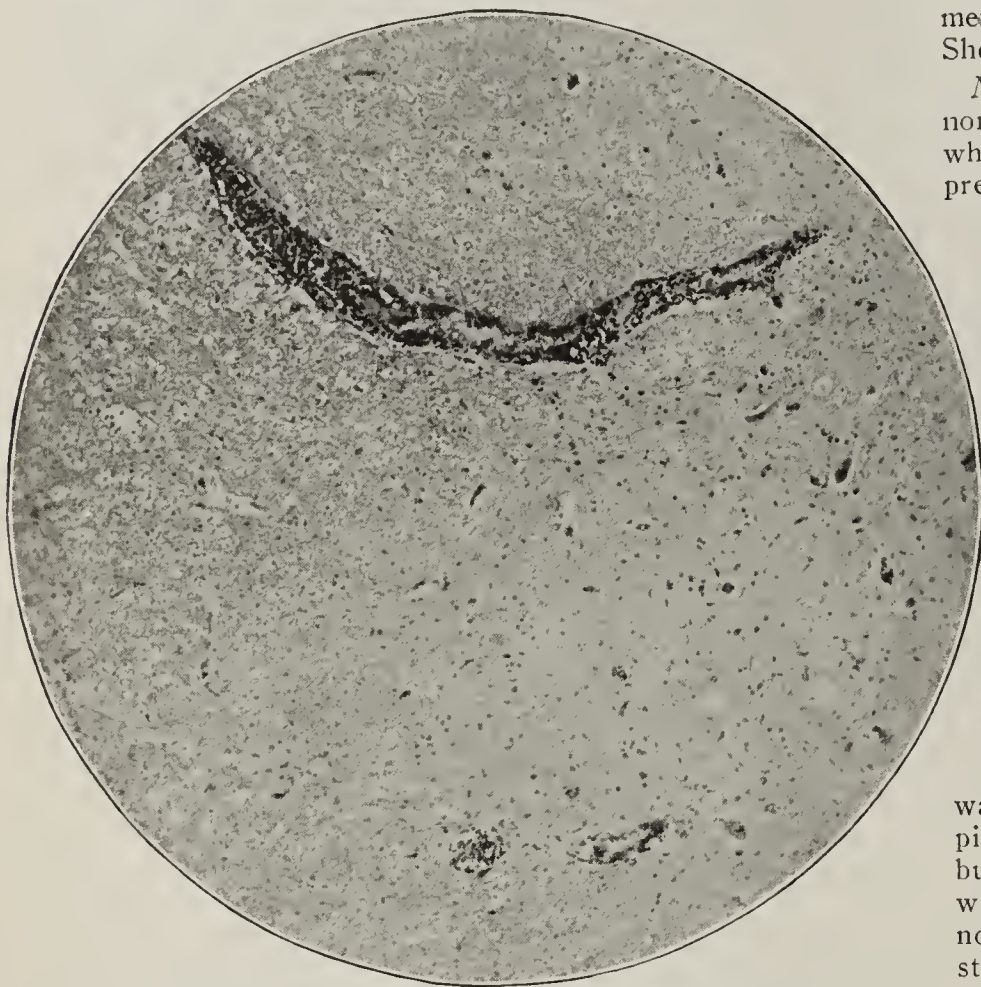


Fig. 3 (Case 3).—Lower bulb: perivascular infiltration; $\times 85$.

November 12, he was extremely restless and constantly fumbled with the bedclothes, but he was oriented and answered questions. The temperature on that day reached 102; pulse, 126; respiration, 28. General examination of the abdominal and thoracic viscera was negative. There was no paralysis, nor were there other positive neurologic findings. The Widal and Wassermann tests were negative. The patient became cyanotic and died the same evening. No necropsy was held.

CASE 3.—History.—A girl, aged 16, with negative previous history, seen at the Grant Hospital with Dr. Bertram R. Beers, Dec. 31, 1919, began, a week before, to complain of slight pain in the left leg and the left side of the body, and general malaise. Later, jerky movements set in; but little attention was paid to her trouble until December 29, when she had an attack in which she became rigid, frothed at the mouth and screamed. Afterward she was unable to talk for a time. Late in the evening of that day she was admitted to the hospital with a temperature of 100.8; pulse, 84; respirations, 20. During her stay in the hospital she was actively delirious and constantly threw herself about. She used the right side of the face and the right arm more than the left. She frequently struck at the physicians with her right arm. There were involuntary discharges of urine and feces. The temperature, December 30, ranged from 101 to 102; pulse, from 80 to 112.

Examination.—Blood examination revealed: hemoglobin, 85 per cent.; red cells, 4,680,000; white cells, 27,600 (polymorphonuclears, 82 per cent.; small mononuclears, 16 per cent.; large mononuclears, 2 per cent.). When examined, December 31, the patient could only whisper unintelligibly and was in a state of active delirium. She had a heavily coated tongue, sordes on the teeth, cracked lips, and acetone odor of the breath. The right pupil was larger than the left and reacted poorly to light, while the left one reacted nor-

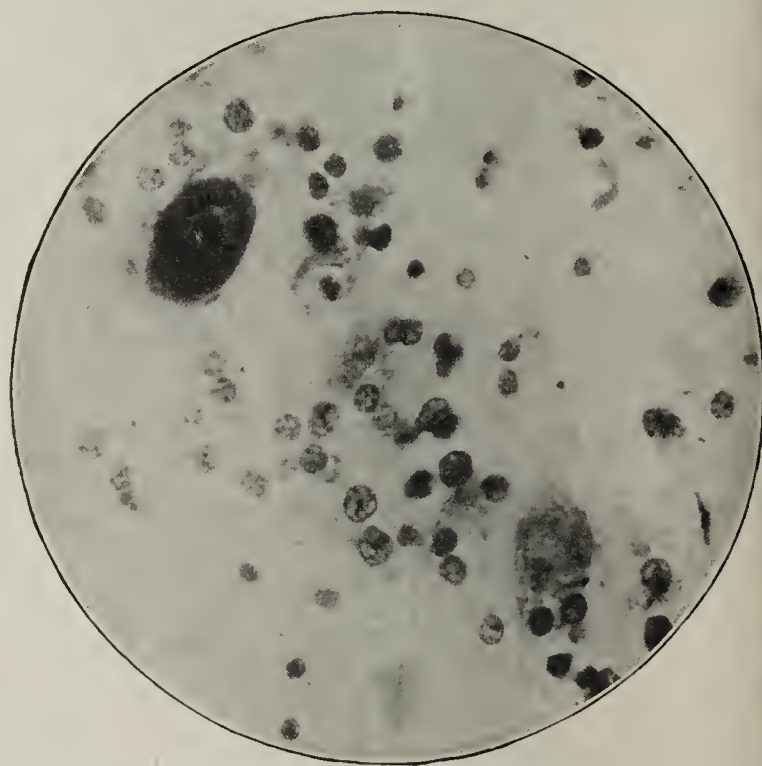


Fig. 4 (Case 4).—Cerebellum: below, degenerated Purkinje's cell surrounded by phagocytic cells; above, well preserved Purkinje's cell toluidin blue, $\times 540$.

of the smaller ganglion cells were invaded by two or three neuronophages. Right occipital lobe: no pial hemorrhage and congestion less marked; cell changes less marked than in motor cortex. Right frontal: pial congestion quite marked with slight hemorrhage; few small extravasations seen in the cortex; many small ganglion cells much degenerated

same was true of a few of the larger ones; satellitosis is quite common; neuronophagia was extremely rare.

CASE 4.—History.—A high-school girl, aged 17, seen on Jan. 15, 1920, with Dr. Kate Graves, had been quite tired from working in a store during her Christmas vacation. On January 2, a very cold day, she had been skating, and felt ill in the evening. The next morning she had occipital headache, and chills in the afternoon, followed by severe tooth-

mann test was negative. The Nonne-Apelt globulin test was positive; cell count, 72; Lange gold test, negative.

On the evening of the 15th she slept for three hours without a hypnotic. In the morning she was quite rational and quiet, but had much difficulty in clearing her throat. She became unable to swallow, and mucus rapidly accumulated in the throat. She grew cyanotic and died at 1 p. m., January 16. The maximum temperature on that day was 100.6; pulse, 100; respirations, 34.

Necropsy.—A limited necropsy was made six hours after death. There was no fluid in the pleural or peritoneal cavities. The lungs contained no consolidated areas, and the abdominal viscera were normal externally. Small pieces were removed for histologic examination; otherwise the organs were not incised. The cerebral meninges were normal and there was no evidence of inflammation in the sphenoid or ethmoid sinuses. The brain showed no changes externally or on the cut surfaces when sectioned after formaldehyd hardening. The brain weighed 1,200 gm. Blood-agar cultures of the cerebrospinal fluid obtained at the base of the brain remained sterile.

Histologic Examination: Cerebellum: considerable pial infiltration with mononuclear cells; marked congestion and occasional slight extravasation in pial septums; many Purkinje cells were degenerated and surrounded by satellites. Cervical cord: considerable cell infiltration and marked distention of vessels at the ventral median fissure; large perivascular infiltrations in gray and in white matter, and in all parts of the transverse section; gray and white matter about equally involved. Lower medulla: very large and numerous perivascular infiltrations throughout the cut surface; also, much diffuse round cell infiltration. Upper medulla: pial infiltration marked, especially laterally; much less marked in ventral fissure than in same fissure of cord; vascular infiltrations especially marked near floor of fourth ventricle, but present throughout; ganglion cells preserved, but surrounded and invaded by inflammatory cells. Midbrain with aqueduct: numerous perivascular infiltrations and considerable hemorrhage. Optic thalamus: very little inflammation; no large infiltrations. Cerebral cortex: slight pial infiltration; considerable satellitosis about the small ganglion cells in the deeper layers of the cortex.

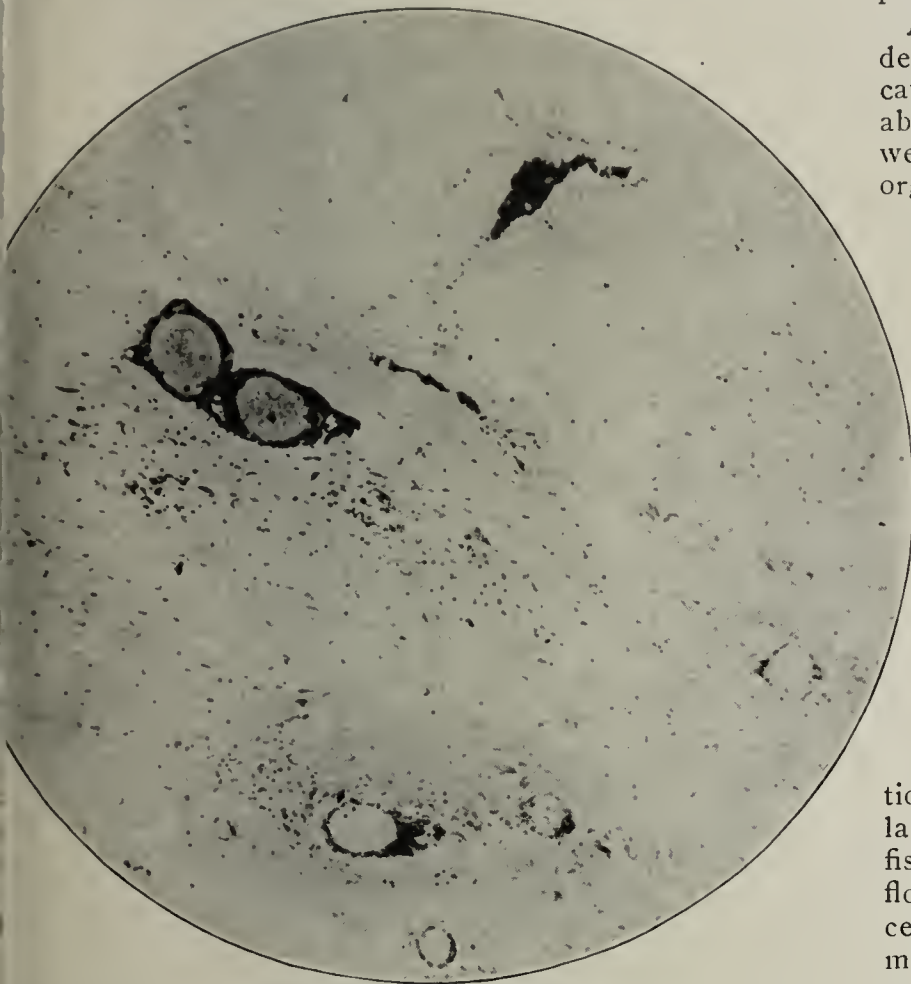


Fig. 5 (Case 4).—Upper cervical cord, posterior horn and surrounding white matter: perivascular and diffuse inflammation; toluidin blue, 90.

ache for which a dentist could find no cause. January 4, she had pain about the left eye and in front of the left ear, but no fever.

The patient went to bed that day, felt better on the 5th, and on the 6th she had pain in the left shoulder. From the 7th to the 11th she had very rapid breathing without any chest findings, with no acceleration of pulse, and the temperature did not exceed 99.4. On the 10th she was troubled with mucus in the nose, was nauseated and quite hysterical and delirious, seemed to have hallucinations of sight and hearing, and wanted water every few minutes; she said she could not breathe without it. From the 12th a nurse was in attendance, so that a temperature record was kept. On that day the highest temperature (axilla) was 100; pulse, 120; respirations, 40. She was restless and perspired freely. She had some disturbed sleep after taking paraldehyd. On the 13th the temperature ranged from 100.6 to 101.2; pulse, 113 to 108; respirations, 26 to 42. On the 14th, temperature, 100.5 to 100.6; pulse, 96 to 102. She was restless and was quieted by paraldehyd and luminal. On the 15th the temperature and pulse were about the same. Since the 10th she had been having jerky and twitching movements of the face and extremities; double vision was complained of on the 11th, 12th and 13th.

Examination and Course.—January 15, the patient was very drowsy; she did not cooperate in the examination. No corneic or other movements were observed. The pupils were small and equal, and reacted to light. The plantar reflexes were normal; the abdominal and ankle reflexes were not obtained. The right knee reflex was present, the left, absent. There was a weak systolic murmur at the apex. Herpes appeared on the right lip and erythematous patches on the right cheek and right side of the chest. Lumbar puncture yielded a clear fluid under normal pressure. The Wasser-

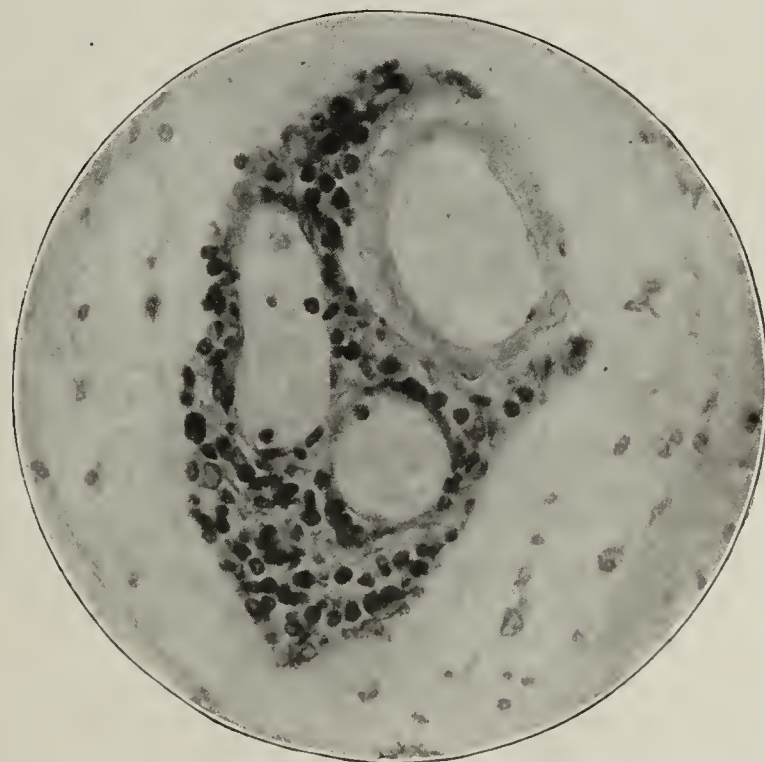


Fig. 6 (Case 4).—Lower bulb, near central canal: perivascular infiltration of mononuclear cells, denser about veins (to left), than about artery.

Comment on Histologic Findings.—It will be noted that essentially the changes are the same as in the ordinary lethargic form. The mononuclear cell infiltrations are most marked in the bulb, pons and cord, while the basal ganglions show surprisingly little involvement. On the other hand, the pial infiltration over the cerebral cortex is relatively marked.

"MENINGORADICULAR" TYPE

With some hesitation I suggest that this virus also may produce a syndrome characterized by meningeal irritation, and by irritation or paralysis referable to the spinal or cranial nerve roots.

CASE 5.—History.—A man, aged 34, seen, April 8, 1919, with Dr. H. F. Langhorst of Elmhurst, Ill., had been taken with vomiting and diarrhea four days before. The next day his temperature was 100, and he had severe pain in the left side of the neck and the left shoulder. The following day he felt better and walked about, but on April 7 he became unable to extend the right hand and to hold the head up. There was pain at the back of the neck.

Examination and Course.—April 8, the neck muscles were weak and active movements painful. There was paralysis of the extensors of the fingers of both hands. The abdominal muscles and flexors of the hips were weak. There was no other paralysis. Sensation was normal. All tendon reflexes were present, but those in the arms were weak. There was no mental disturbance at any time. The pulse was slow (56). Lumbar puncture yielded a clear fluid under increased pressure with a cell count of 20, and weakly positive globulin test and Lange gold test (0122111000). The patient rapidly improved. April 12, he was able to walk about, and complained only of slight numbness in the fingers and toes. He recovered completely.

CASE 6.—History.—A business man, aged 39, with negative previous history aside from right-sided facial paralysis of a few days' duration three years before, admitted to the Presbyterian Hospital, Jan. 27, 1920, six weeks previously had been taken with pain and stiffness of the neck, and later, with pain in both shoulders and arms. January 2, he had fever and delirium which lasted two days. January 4, he became unable to close his right eye or close the mouth tightly on

tally clear. Lumbar puncture, January 27, yielded a clear fluid under greatly increased pressure; cell count, 16; Nonne-Apelt globulin test, positive; Lange gold test, positive (0123221000); Wassermann test negative with blood and spinal fluid. Blood count: hemoglobin, 100 per cent.; erythrocytes, 4,150,000; leukocytes, 9,800. The patient slept poorly on account of pain in the arms. A second lumbar

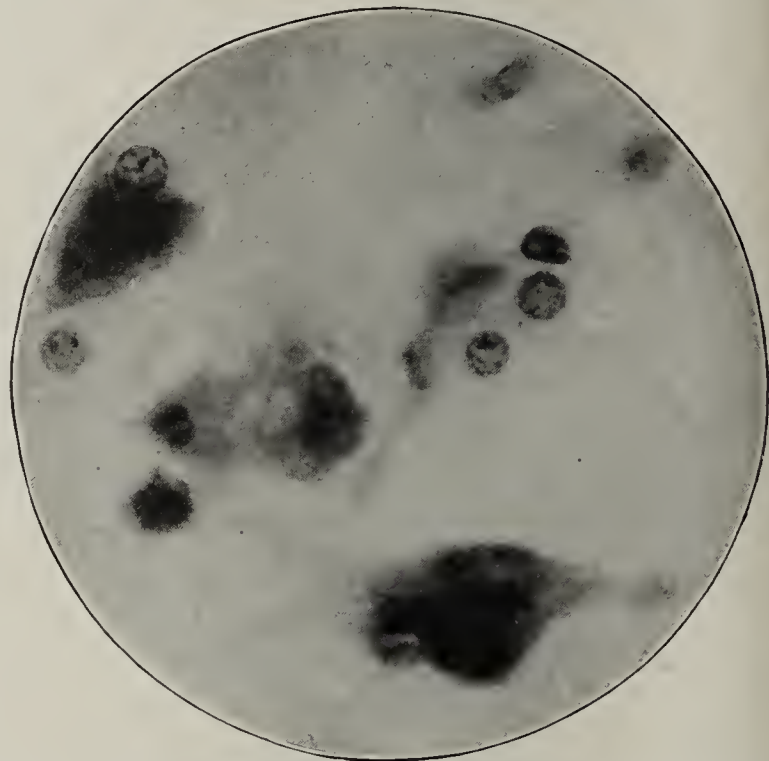


Fig. 8 (Case 4).—Motor cortex, deep layer: degenerated ganglion cells with satellites; toluidin blue, $\times 900$.

puncture, January 31, yielded clear fluid under normal pressure, 9 cells; globulin test, positive; Lange gold test weaker (0001221100). The maximum temperature at the hospital was 99.2. The patient still complained of pain in the arms when he went home, February 2, but was reported as having recovered by the end of the month.

Comment.—The right-sided facial paralysis and the condition of the reflexes on the left side of the body suggest a mild pons lesion. The facial nerve may have been involved at its exit from the pons or in its nucleus. The high pressure of the spinal fluid indicates serous meningitis, while the pain in the arms and neck was probably caused by root irritation, as there was no paralysis or sensory disturbance, nor atrophy or change in the reflexes in the arms. The involvement in this case was sufficiently extensive to merit the term "meningo-encephalomyeloneuritis," used by Barker, Cross and Irwin.⁴

30 North Michigan Avenue.

4. Barker, Cross and Irwin: Am. J. M. Sc. **159**:157 (Feb., 1920).

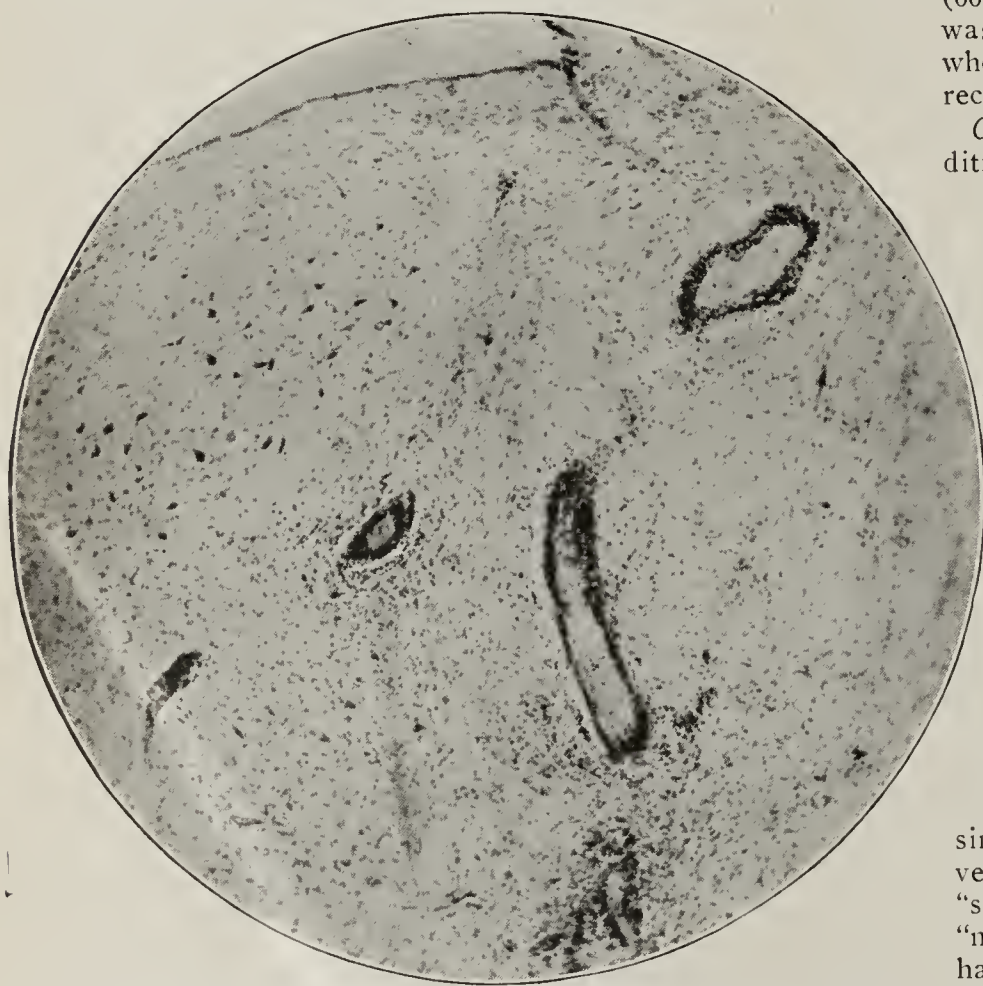


Fig. 7 (Case 4).—Upper bulb, dorsal surface: perivascular infiltration; toluidin blue, $\times 70$.

the right side. When admitted to the hospital his chief complaint was pain in both forearms and hands.

Examination and Course.—The chief findings were: slight right-sided facial paralysis of peripheral type, increased knee reflexes, more so on the left side; left Babinski sign, left lower abdominal reflex absent; other abdominal reflexes normal. Muscular tenderness of forearms and hands. Men-

Influenza an Ancient Disease.—In his special report on influenza to the London county council, Dr. H. W. Hamer gives an account of the prevalence of the disease in London with reference to contemporary outbreaks in other parts of the world and reviews the occurrence of similar epidemics in bygone years. Dr. Hamer draws some very instructive parallels between this last epidemic and the "sweats," "hot agues," "spotted fevers," and certain so-called "new diseases," all more or less of an influenzal type, which have been described by writers in the fifteenth, sixteenth and early part of the seventeenth centuries. These also were apparently associated with other diseases of an allied type in which cerebral symptoms predominated, and he points out that the history of the "new fever" of 1685 bears a close resemblance to the 1915 outbreak of influenza in London, plus cerebrospinal fever. Dr. Hamer extracts from the old writers a mass of strikingly suggestive evidence, in which the quaint terse terms used by them to describe the outstanding features of the epidemics are almost as conclusive as the more elaborate nomenclature of modern physicians.

TUBING AS A CAUSE OF REACTION TO
INTRAVENOUS INJECTION, ESPE-
CIALLY OF ARSPHENAMIN

PRELIMINARY REPORT *

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ROCHESTER, MINN.

During the last two years we have been investigating the cause of an arsphenamin reaction observed on the service of the Section on Dermatology and Syphilology. This reaction, characterized by a chill with a sharp rise in temperature coming on from thirty minutes to an hour after intravenous injection, accompanied by nausea, vomiting, diarrhea, pain in the head and back and varying degrees of prostration, would appear in crops, so to speak, and then disappear for a considerable period, only to recur in the very midst of what seemed a period of flawless clinical accuracy. Repeated efforts to identify a cause in the water or the chemicals employed in the preparation of arsphenamin for injection yielded nothing definite. The first clue to the actual cause was afforded by the appearance of a series of reactions, on Dec. 6, 1919, following the transfer of the hospital and operating room service of the section from the Colonial Hospital to the Worrell Hospital. On this day every element in the technic except one remained the same as on the last day at the Colonial, when no reactions had occurred. The old piece of supposedly pure gum rubber tubing used on the glass container on the reactionless day at the Colonial was replaced by a new piece of pure gum rubber tubing used on the opening day of many reactions at the Worrell. One of us (Busman), who was administering the arsphenamin at this time, suggested that the new tube was responsible for the reactions, though its cleaning and sterilization had been carried out with the same care used in the case of the old tube. Starting with this suggestion, we have carried the investigation of the "tubing reaction" to the point at which a preliminary report of the work seems desirable in order that physicians generally may be placed on their guard. One of us (Stokes), viewing the matter in retrospect, can recall two "epidemics" of similar reactions in his own experience on another service, which were attributed at the time to contamination of the distilled water. Study of the literature of crops of reactions, notably in army camps, also offers some

points of suggestive comparison with our own experience. The possibility that a reaction of this type forms a complication of intravenous injections of alkaline solutions given through a brand of tubing known to produce this reaction, and the possible relation of the tubing to certain reactions occurring in blood transfusion by the citrate method as employed in the Mayo Clinic, are also under investigation.

At the time of the operating room transfer, all fourteen patients who received arsphenamin through the new tube reacted. On the following day, fifteen of eighteen patients reacted to another new tube. Four and one-half months later, when another change of tubing became necessary, an old and a new tube were checked against each other, identical lots of arsphenamin prepared in identically the same manner being employed. On the first day, in twelve of thirteen

cases reaction followed the giving of the arsphenamin through the new tube, and no reaction occurred in nine cases in which arsphenamin was given through the old one. On the second day, arsphenamin given through the new tube of the previous day produced chills in three cases, nausea in four, and headaches in six, of ten cases. Absolutely no reaction had followed fourteen injections of the same arsphenamin solution through the old tube. On the third day there were no reactions from either tube.

Dec. 8, 1919, seven months after this experience, it again became necessary to replace worn out tubing, and on this occasion also all the patients who received arsphenamin through new tubing the first day reacted markedly. On the second day, the reactions to the arsphenamin through the new tubing were slight. None of the patients who received the solution through old tubing had the slightest reaction. On the third day, all tendency to reaction disappeared.

These seemingly convincing demonstrations incriminating the tubing led us to make efforts to ascertain the cause of the toxicity and to devise methods for its removal or the abatement of its effects. A variety of hypothetic possibilities presented themselves:

1. Imperfect sterilization of a new tube might lead to bacterial contamination of the solution in passage through it. This was rendered unlikely by the continuance of the reactions into the second day, after two half-hour sterilizations by boiling. Careful washing, rinsing and irrigation of the tube, filling with water before sterilization, and the fact that all glassware and other equipment in the experimental material and controls was subjected to the same treatment, made the possibility of bacterial accident even more remote.

2. Talc dust or some insoluble powder introduced into the circulation by the current passing through the

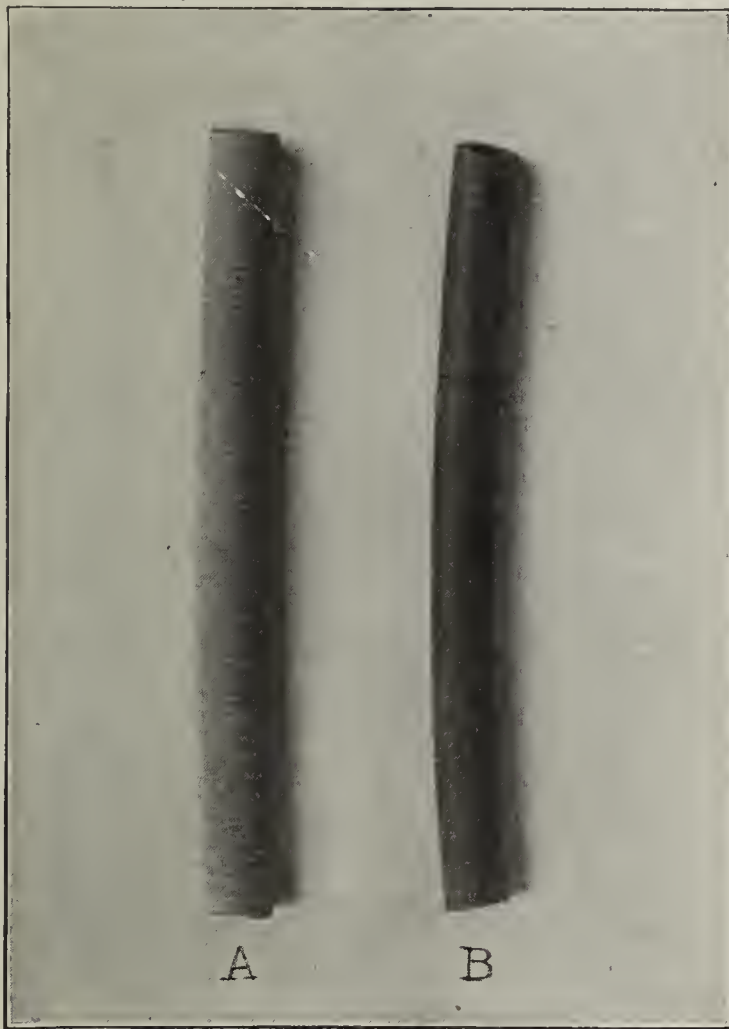


Fig. 1.—Two samples of "pure gum rubber" tubing: The lighter colored tubing (A) will give rise to reactions when new, if used for intravenous injection of arsphenamin and certain alkaline solutions; the darker tubing (B), even when new, apparently does not give rise to reaction.

* From the Section on Dermatology and Syphilology, Mayo Clinic.

tube might be the cause of the reaction. This was rendered unlikely because of the careful washing and rinsing to which tubes are always subjected, and further by the fact that a new tube produced reactions in every instance (six cases) even after a powerful stream of tap water had been forced through it for twelve hours.

3. A reduction in the alkalinity of the arsphenamin solution passing through the new tube, giving the effect of an injection of slightly acid arsphenamin, might be responsible for the reaction. To oppose this possibility it was found that normal sodium hydroxid solution titrated 98 per cent. normal after tubing had been soaked in it over night. The reduction in alkalinity in a rapid passage through the tube must therefore be within negligible limits, and would not be manifest after the first or second injection.

4. The toxic substance, a constituent of the rubber, might decompose arsphenamin, rendering the drug itself toxic.

5. The toxic substance might induce colloidal changes in the arsphenamin solution.

6. The toxic substance per se might be dissolved from the rubber and introduced into the circulation by the solution passing through the tube.

In interpreting our investigations, the fact should be emphasized that the same brand of arsphenamin was used from the beginning of our observations in 1918, and that we were thoroughly familiar with its behavior from experience in approximately 20,000 injections. Quantitative neutralizations, not visual end-point reactions, have been employed during the last eight months in the preparation of the solution. The sodium hydroxid was prepared for us by Kendall, and is standardized by titration and not by weight. The glass used was Pyrex or Jena, the water redistilled from glass, and the dilutions, rates, and conditions of administration closely approximated Public Health Service standards. Whenever comparisons between tubes were made, the conditions for both old and new tubes were kept identical. The tubing used by this service is sold as pure gum rubber tubing, and is manufactured by one of the largest and oldest rubber concerns in this country, so that the product probably is widely distributed over the United States. That a pure gum rubber tubing can be made which does not produce reactions, even when new, we ascertained in the course of our experiments (Fig. 1). About 80 cm. of tubing of an internal diameter of 4 mm. was employed in our work.

On further study of the reaction, these facts appeared:

1. Neo-arsphenamin, diluted 20 c.c. per decigram, as is our practice with arsphenamin, produced reactions

when given through a new tube exactly as in the case of arsphenamin and of the same intensity, in spite of the lower intrinsic toxicity of the drug (six cases).

2. Soaking washed and sterilized new tubing fifteen minutes in neutralized or slightly alkaline arsphenamin solution just before administration caused the arsphenamin solution to produce reaction even when given through an old, nonreacting tube (six cases).

3. Using sodium hydroxid in which new sterile tubing had been soaked twelve hours, to make up the fresh arsphenamin solution for administration, did not make the arsphenamin solution, thus prepared, toxic.

4. Soaking new sterile tubing in acid arsphenamin solution and then neutralizing with fresh normal sodium hydroxid did not give rise to reactions.

5. The scrapings and dust mechanically removable from the inside of new sterilized tubing, even when present in sufficient amounts to produce visible turbidity in the arsphenamin injected through an old tube, did not induce reaction.

6. New tubing can be rendered harmless and incapable of producing reaction by soaking for six hours in normal sodium hydroxid solution.

From these observations it is suggested that:

1. The toxic substance is present in new tubes in sufficient amount to produce reactions in the patients receiving the first ten to twenty-five injections of arsphenamin given through a new tube 80 cm. in length within a period of two days. The reactions become less severe the longer the tube is used.

2. The toxic principle is not destroyed by boiling for one hour, is not soluble in water, and is not contained in the washings and mechanically removable debris from the inside of new tubes.

3. The toxic substance dissolves in or acts on neo-arsphenamin and arsphenamin when these drugs are employed in a dilution of 1 dg. to 20 c.c. of redistilled water.

4. The solution of the toxic substance or its chemical action is so rapid that merely passing 50 c.c. of the injection fluid through a new tube in four minutes will produce enough effect to give rise to marked reaction.

5. The toxic principle is removable from new tubing by soaking it in normal sodium hydroxid solution for six hours.

In order to ascertain whether the toxic agent is soluble in sodium hydroxid solution in the concentration

in which it enters into the neutralization of arsphenamin (45 c.c. of normal sodium hydroxid per 5 gm. of arsphenamin per liter of water), we prepared a solution of 45 c.c. of normal sodium hydroxid per liter of water and ourselves received each 50 c.c. intravenously through a new sterile tube, with ensuing violent



Fig. 2.—Series of photographs illustrating "tubing reaction" in the dog: Top, both animals alert and in good condition before injection. Center, both animals one hour after intravenous injection of 50 c.c. of approximately 0.18 per cent. solution of sodium hydroxid; the black dog received his injection through a used piece of rubber tubing, the white dog through a new one; the white dog has had a chill and vomited, the black dog is unaffected. Bottom, tubing reaction at its height; high fever, severe diarrhea and cramps, vomiting and depression; the black dog (old tubing) had no reaction whatever; in ten hours the white dog had completely recovered.

nt reaction. The toxic principle is, therefore, present in the dilute sodium hydroxid solution passed through the tube, and can presumably be obtained thus for chemical study, although its stability in such solutions has not yet ascertained.

Striking success in our efforts to transfer the problem to animals has thus far been obtained in the case of dogs (Figs. 2 and 3). In them it has been shown that if the same dilute sodium hydroxid solution is given intravenously through an old tube to one dog, and through a new tube to another, the dog which receives it through the new tube reacts characteristically; the other shows no effect. If, a week later, the procedure is reversed, the reaction occurs in the dog

decreases. In from thirty minutes to an hour after injection, an increasing weakness, with aching of the legs and back, is noticed, followed by a chill, often of great severity (Fig. 4). The chill may be the first symptom. Nausea and vomiting occur with violent cramplike pains in the lumbar region, and diarrhea with tenesmus. Headache is intense, and with repetition of the rigor there is a sharp rise in temperature, the fever reaching from 102 to 103.5 F., accompanied by varying degrees of emotional disturbance, and prostration. The temperature (Fig. 5) then usually declines to normal within eight hours, but the fever may persist for two or three days, and the headache, backache, gastro-intestinal disturbance and prostration may per-

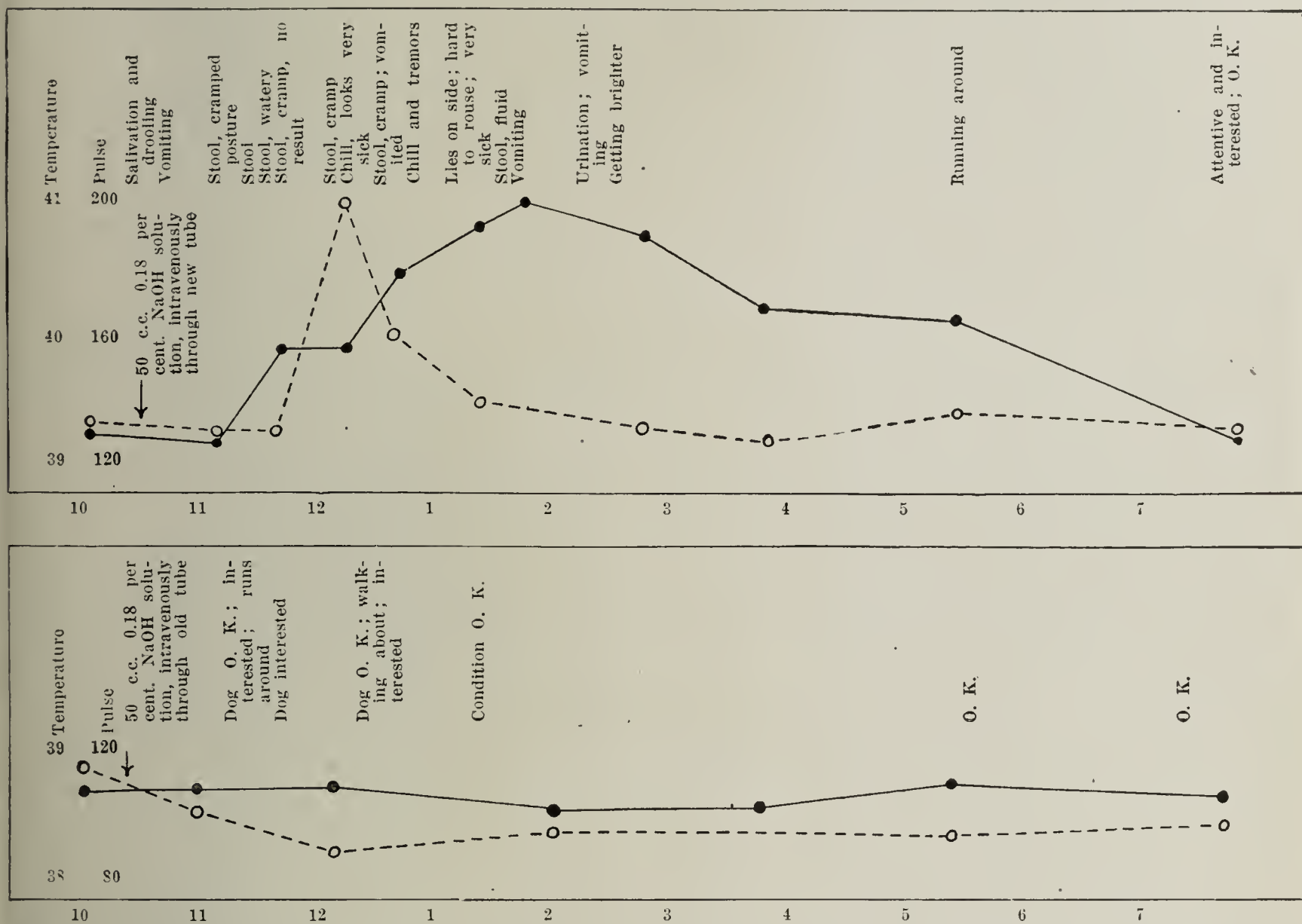


Fig. 3.—A, chart of tubing reaction in the dog following an intravenous injection of 50 c.c. of 0.18 per cent. sodium hydroxid solution given through a sterilized new "pure gum rubber" tube; note the chills, fever, vomiting, diarrhea, cramps and prostration characteristic of the reaction in man. B, chart of control dog, which received an equal dose of the same sodium hydroxid solution, but through a "pure gum rubber" tube that had been in use for some time; absolutely no reaction; solid line, temperature; broken line, pulse.

who receives the solution through the new tube, although by the use of an old tube this dog escaped reaction the week before. There is, therefore, no mere idiosyncrasy at the bottom of the reaction, and it is not due to the alkali alone. Efforts are now being made to transfer the problem to rabbits for greater facility in physiologic testing. The dog will apparently respond with somewhat less intensity than man to a dose of toxic solution about seven times as great per kilogram.

DESCRIPTION OF THE REACTION

The "tubing reaction," as we shall temporarily designate it for lack of a better name, presents a highly characteristic clinical picture when of maximum intensity, but graduations into atypical and mild forms appear as the toxicity of a given piece of tubing

sist for several days to a week. Both of us developed a profuse crop of herpes following the reaction. We have seen one case of jaundice, but no renal complications. Considering the extremely pronounced and unpleasant character of the symptoms, the recovery in robust persons is rapid and complete. It is conceivable that the reaction in the debilitated, or when coupled with a Jarisch-Herxheimer reaction or an intolerance of arspenamin, might have serious consequences. One of us (Busman) developed a leukocytosis of 14,600, with 94 per cent. polymorphonuclears at the height of the fever. The other (Stokes) had a white count of 5,600, with 92 per cent. polymorphonuclears. Both urines were normal. The pulse is likely to remain rapid for several days. Important symptoms may fail to appear or may assume unusual severity. The gen-

eral features of the reaction, however, run so true to form both in man and in the dog that they suggest the toxicologic action of a definite poison.

COMMENT

While the use of pure gum rubber in all tubing employed in arspenamin apparatus has been tradi-

suggests that this factor has been silently at work,¹ although to attribute the reactions described in any special reports to it, in the absence of data as to the tubing used, is only to indulge in speculation. Publication of our results may, however, stimulate further observation and serve, too, as a caution to those of us who are disposed to put the blame for every accident

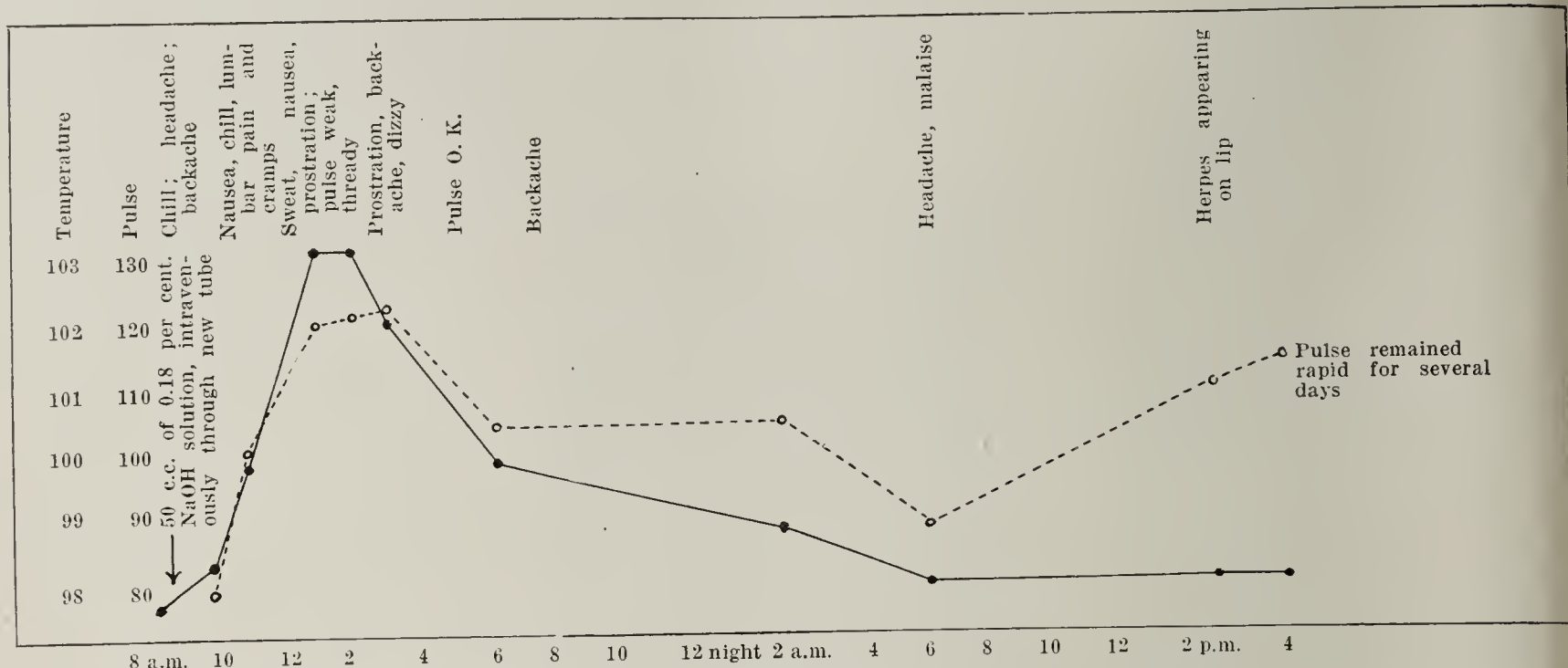


Fig. 4.—Chart of the reaction of one of the authors to an intravenous injection of 50 c.c. of 0.18 per cent. of sodium hydroxid solution given through a sterilized new "pure gum rubber" tube; the other author likewise received the toxic solution and had an even more severe and typical reaction, with vomiting, diarrhea and tenesmus; solid line, temperature; broken line, pulse.

tional in our technic, a careful search of the literature from 1910 to the present time has thus far failed to disclose specific reference to or authority for our practice. While the familiar references to "Wasser Fehler," "Salz Fieber," and to the possibility of minute quantities of lead and silicates being responsible for the erratic behavior of arspenamin are common enough, we have been unable to find any evidence that the ingredients of rubber have been considered a potential cause of reaction in intravenous injection. From our study it is apparent, we believe, that even tubing marketed as of pure gum rubber may in the process of manufacture have acquired dangerously toxic properties, especially when used in the injection of alkaline solutions. That it is possible to make a gum tubing that has apparently no such toxic properties, and that soaking even toxic tubing in normal sodium hydroxid solution for six hours, followed by rinsing, removes the poisonous principle, points the way to a remedy. A review of the literature of arspenamin reaction certainly

on either the operator's technic or the drug. The identity and toxicologic action of the cause of the reactions described will be made the subject of further communications, including a consideration of possible relations to transfusion reactions when tubing is employed for the conduction of blood and other reagents.

CONCLUSIONS

1. A certain widely distributed brand of so-called pure gum rubber tubing seems to contain, when new, a toxic agent responsible for a definite type of reaction following the intravenous administration of arspenamin, and possibly also of alkaline solutions and transfusion mediums.

2. The toxic substance gradually disappears from the tubing on use.

3. The toxic substance is apparently removable in the first instance by soaking the tubing for six hours in normal sodium hydroxid solution and rinsing.

1. See, for example, the group of reactions reported by Guy at Camp Travis, J. A. M. A. 73: 901-904 [Sept. 20] 1919) in which the description of the reactions experienced by thirty-five patients in a single forenoon tallies in almost minute detail with the tubing reaction as we have observed it.

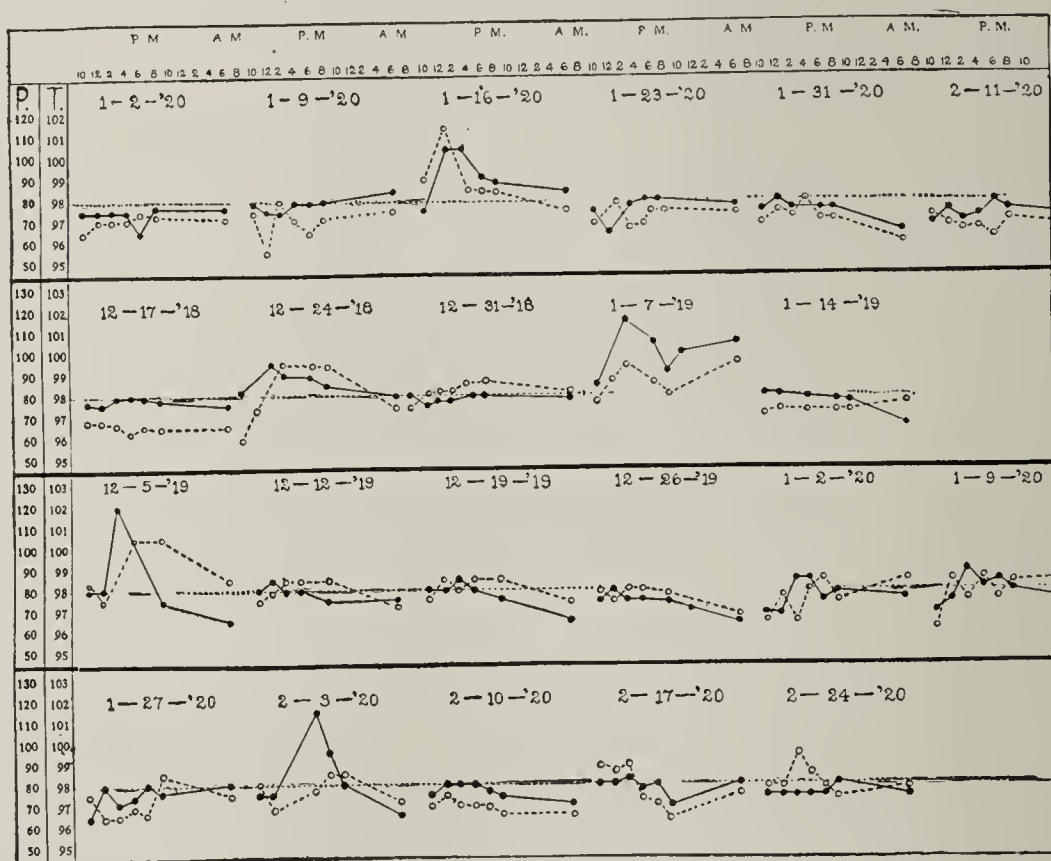


Fig. 5.—Charts of four patients who developed tubing reaction during their courses of treatment: Solid line, temperature; broken line, pulse.

4. The toxic property is not destroyed in the ordinary process of sterilization by boiling (from one-half to one hour), is not soluble in water or removable by irrigation, appears in toxic amounts in arsphenamin, neo-arsphenamin and dilute sodium hydroxid solution merely on passing them through a new tube en route from container to vein, and is not apparently associated with the mechanically removable debris from the inner surface of the tube.

5. The reaction induced by this agent, as obtained by the use of new tubing for intravenous injection of the substances mentioned, consists of chills coming on from thirty to sixty minutes after injection, with nausea, vomiting, diarrhea, a sharp rise of temperature, sweating, severe headache and lumbar cramps, emotional disturbance amounting at times almost to hysteria, and subsequent profound prostration.

6. The reaction can be induced in typical form in dogs.

7. The identity and toxicology of the poisonous principle are under investigation.

NONOPERATIVE DETERMINATION OF PATENCY OF FALLOPIAN TUBES IN STERILITY

INTRA-UTERINE INFLATION WITH OXYGEN, AND PRODUCTION OF AN ARTIFICIAL PNEUMOPERITONEUM

PRELIMINARY REPORT *

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NEW YORK

The value of oxygen in conjunction with the roentgen ray as an aid in the diagnosis of obscure abdominal conditions has been demonstrated in a number of recent publications. No ill effects have accompanied the pneumoperitoneum produced by inflation of the abdominal cavity with oxygen gas. The tolerance of the peritoneum for oxygen even in large volume, and the fact that its presence can be detected by fluoroscopy and roentgenography have led to its use as a diagnostic procedure in determining the patency of the fallopian tubes. If the gas injected into the uterus under certain measurable pressure would pass into the fallopian tubes, it ought to reach the general peritoneal cavity. In patients with patent fallopian tubes the gas would establish an artificial pneumoperitoneum identical with that produced when injected by direct abdominal puncture. In patients with occluded tubes no such result could be obtained. Accordingly, experiments were carried out on extirpated uteri with the adnexa intact. In the first experiment it was readily seen that oxygen passed into the uterine opening of the tubes and then escaped through the fimbriated end. When the tubes were ligated or were occluded by pathologic processes, this did not follow. After determining the amount of gas required for our purposes, the first clinical application of the intra-uterine oxygen inflation was made, Nov. 3, 1919, at Mount Sinai Hospital. It was successful in proving the patency of the fallopian tubes in this first patient. The abdomen became visibly distended and the pneumoperitoneum was confirmed by the roentgeno-

graphic examination. The symptoms associating the gas inflation by way of the uterus were the same as those described for the method by direct abdominal puncture.

Encouraged by the result of the first trial, I tested it out in a series of thirty-five cases of sterility in which there were different clinical histories and physical findings. In this first series it was our endeavor to find out the limits of application, the quantity of gas to be employed, the time and rate of flow, and the reliability of the oxygen injected as a diagnostic procedure. In the second series of twenty cases, estimations were made on pressure. This has proved a valuable adjunct. Altogether, fifty-five patients were examined by means of oxygen inflation of the uterus. There were absolutely no untoward symptoms or sequelae. The patients with two exceptions were ambulatory, and were allowed to go home from within a few minutes to a half hour after examination. Two cases were from the hospital wards. The patients were all followed up and carefully examined for complications, none of which have to the present writing appeared.

In some cases the result confirmed our clinical diagnosis of probably closed or patent tubes. In a number of cases the tubes were proved to be open when we had reason to suspect they were closed by disease, while in others the tubes were demonstrated to be occluded when we had believed them to be normal. The method had practically the value of an exploratory laparotomy for purposes of determining the continuity of the lumen of the fallopian tubes. The two possible dangers, namely, embolism and infection, are more theoretical than actual.

Embolism from oxygen introduced into the uterus in a stream of discrete bubbles never occurs, and infection need never occur if the cases are not acute and are properly selected. In fifty-five cases which form the basis of this preliminary report, there were no symptoms even suggestive of a possible peritoneal irritation, although some of them had presented gross pathologic conditions before the examination was made. These questions, with the case histories, will be more fully discussed in a future communication.

261 Central Park West.

Children's Year: Looking Backward and Forward.—In thirty-eight states the Children's Year child welfare committees have planned to "carry on" with the cooperation of the Children's Bureau; in thirty states child hygiene divisions have been established, and in sixteen states child welfare commissions have been appointed. The end of Children's Year was marked by an international child welfare conference in Washington, at which minimum standards were drawn up, discussed in eight regional conferences throughout the country, and put into final form by an advisory committee formed for that purpose. These standards cover the fundamental needs of maternity and infant care; of the preschool and school child; of the child in need of special care; of the child at work; and of the economic and social bases for these standards. The standards for the protection of maternity and infancy are already crystallized in the Sheppard-Towner maternity bill now in Congress. This bill would make available to all mothers public health nurses, accessible hospital care and medical attention; consultation centers; teaching and practical demonstration in hygiene of maternity and infancy, and the household arts essential to the well-being of mother and child. One hundred and thirty-four children's health centers were established in fifteen states; in nine other states they were reported but the actual number not given.

* From the Second Gynecological Service and X-Ray Department of Mount Sinai Hospital.

GENERALIZED NEUROFIBROMATOSIS

WITH REPORT OF A CASE

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Generalized neurofibromatosis, as a special class of multiple neuromas, was first described by von Recklinghausen in 1882. It has since been called "von

as small, flattened, sessile tumors; long flattened pendulous taperings, or knobby, warty, gnarled formations. "Neuroma racemosum plexiforme," or "elephantiasis congenita" (Barker) are among the names applied to the condition. Often "rolling palpation" will detect numbers of the smaller swellings, too small to be seen on ordinary inspection, just below the skin surface. According to von Recklinghausen,¹ the tumors originate in the endoneurium of the nerve trunks in the subcutaneous tissue.

Etiologically, nothing is definitely known except the presence of a congenital predisposition. According to Osler, the tumors are believed to originate in the neurilemma (sheath of Schwann), because of the fact that the "olfactory and optic nerves, which are devoid of this sheath, have never been found affected with neurofibromatosis."² This is somewhat at variance with a statement by Barker³ to the effect that "it is this tumor that affects the nervus acusticus at the cerebellopontile angle; the nervus trigeminus is also frequently involved." Osler mentions the report of a case by Prudden, with nearly 1,200 tumors distributed on the nerves of the body, and says that "fibroma molluscum multiplex" is a term that has been applied to the peripheral cutaneous form of the disorder.

Ganglioneuromas, the true type of nerve cell tumor, contain and are largely made up of ganglion cells. They are largely confined to the sympathetic system and the chromaffin system, often in the region of the suprarenals. The tumors presented in this report, however, are largely those of connective tissue framework origin.

They have certain interesting and fairly characteristic findings. Persons affected have a peculiar tendency toward pigmentation of the skin, irregularly distributed, and much accentuated over those areas normally containing pigment cells. Nevus formations, both of the capillary and of the cavernous type, are common, and Harbitz considers them a feature of the disease. Neither pigment nor nevi seem to elect the mucosa of the oral cavity. Typical tumor groups are soft, velvety, semifluid masses pinhead to pigeon egg in size, and feel to the palpating finger much like a soft, overripe, small grape. Below the skin surface they are more often smooth, elongated swellings along the nerve trunks, easily detected by soft, uniform, gliding palpation with the palm. When evenly distributed, in considerable numbers, they give the affected

part a swollen, edematous appearance, wherefore probably, the name "elephantiasis neuromatosa." A portion of the nerve, from the ganglion cells of origin to the periphery, may be involved. The symptoms produced, therefore, depend more or less on the anatomic locations. These patients are prone to mental

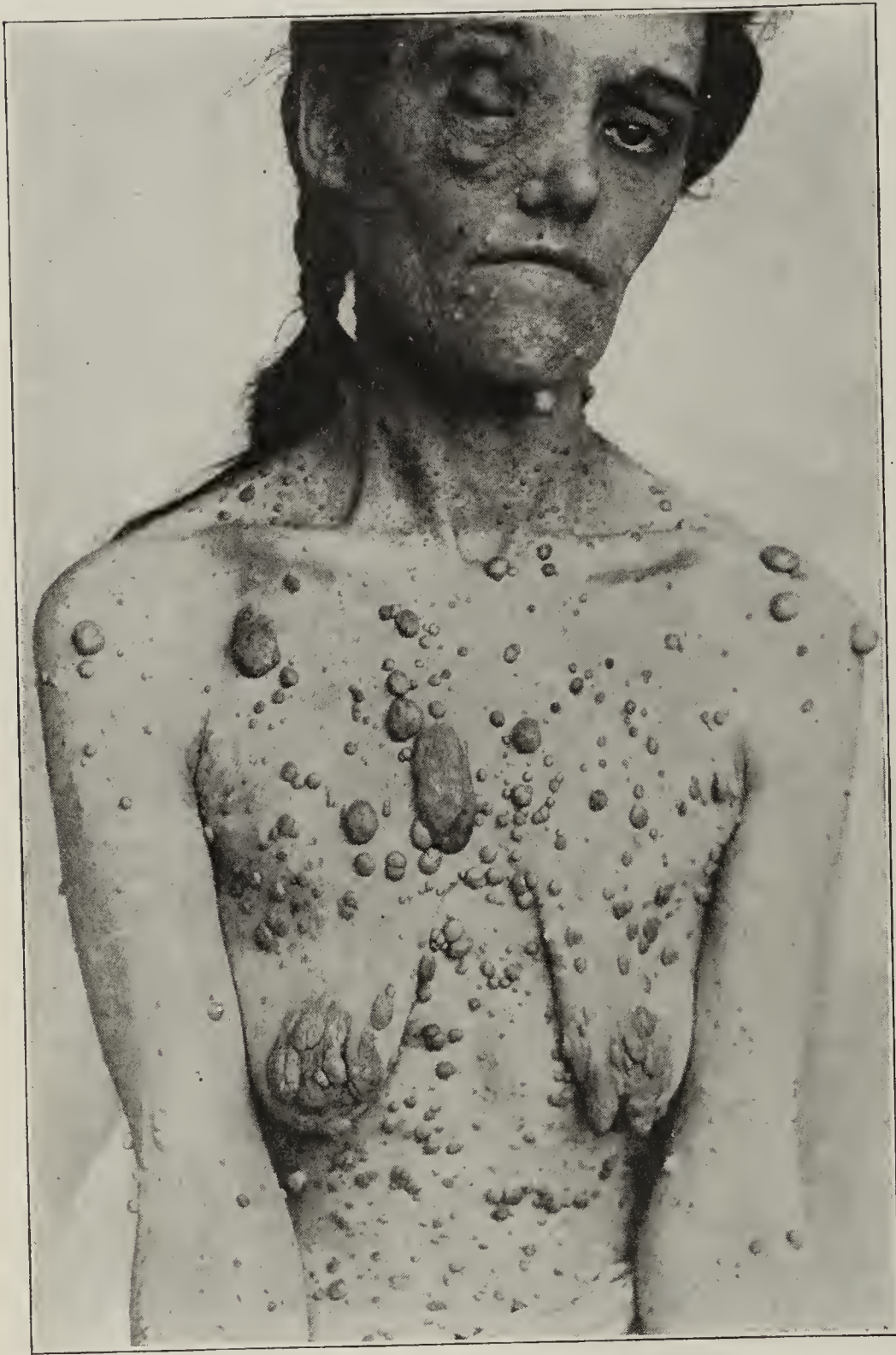


Fig. 1.—Involvement of the right eye, with drawing of the mouth to the left, lagophthalmos, and collapse of the ala nasae.

Recklinghausen's disease." Pathologically, it is a type of fibroma, apparently taking origin from the connective tissue of the nerve strands. Nerve trunks, roots or individual peripheral nerve fibers may be involved; and different fibers of the same nerve, as well as derivatives of many different trunks in a given area, may exhibit lesions. The swellings may be near the skin surface, in the case of the peripheral nerves, or deeply buried in the tissues, and at any distance from the point of origin of the trunks. In shape they are often short and bulbous, or long, tapering and pyriform. Projecting above the plane of the skin surface, they appear

1. Von Recklinghausen: Ueber die multiplen Fibrome der Haut, und ihre Beziehung zu den multiplen Neuromen, Berlin, A. Hirschwald, 1882.

2. Osler, Sir William: Principles and Practice of Medicine, Ed. 1914, p. 1027.

3. Barker, L. F.: Monographic Medicine 4: 564, 1916.

4. Harbitz, Francis: Multiple neurofibromatosis (von Recklinghausen Disease), Arch. Int. Med. 3: 32 (Feb.) 1909.

range, with loss of or weakened memory, both for recent and past events. Sometimes there is pronounced speech difficulty, caused, in all probability, by interference with innervation.

REPORT OF CASE

The patient whose pictures accompany this report is a woman about 38 years of age. She is mentally alert, but has an exceedingly poor recollection of events one or two days past. She is exceedingly irritable and hypersensitive, refusing any sort of examination except in a closed room. Trifles serve to throw her emotional nature into wild play, and at times she is much like a child of 4 or 5 years. She has some speech difficulty, though there is no demonstrable involvement of the current laryngeal or superior laryngeal nerves.

According to her statement she was a normal child until about 6 years of age. At that time a small nodule appeared in the skin under the left mandible, grew rapidly for a time, and then stopped. It has now been far outdistanced by those appearing subsequently, but still remains the same size. There are now more than 3,000 various sized tumors on and below the skin surface, though the photographic details are insufficient to show the smallest ones, or those that are just below the corium. The patient is one of three children, one brother having the same condition in much less degree. One paternal uncle is said to have had a similar affection. Otherwise the history is negative.

A number of representative tumors were subjected to microscopy, but no tissue that could be construed as of nervous or ganglion-cell origin was found. No frank evidence of malignancy or excessive proliferation was found, though some cell elements were suggestive of sarcomatous (as opposed to carcinomatous) change, being large and spindle shaped, with hyperkinetic and double nuclear changes. The tumor cells were rather large, puffy, succulent protoplasts, unstratified, but thin and elongated in the region of the pedicle. Unna's⁵ large mast cells were not found. Blood vessels were very few in number. The larger and presumably younger fibroblasts were grouped and bunched by numerous fibrous connective tissue septums, the whole surrounded by a sort of capsule quite separate and distinct from the overlying basement membrane of the epithelial surface. The intervening space was comfortably filled with an accumulation of fat cells, increasing at the base until only a very dense, thin fibrous connective tissue stalk penetrated the plane of the normal skin surface. These fibrous cords, in many instances, were followed below in the attempt to find their origin, but no definite conclusions could be reached, since they immediately spread out umbrella-wise, mingling with the fibers of the superficial white connective tissue fascia. The entire body surface was studded with these tumor masses: scalp, back, chest, abdomen, extremities and genitalia. Pictures of the latter were not obtainable though involvement was largely confined to the labia minora, which were excessively large and pigmented. The attempt to reproduce the chief involvement of the extremities, that of the right foot, was, for a time, futile. Strangely, she did not object to being photographed, front and back, thus illustrating what is meant by "mental eccentricity."

As is shown in the illustrations, there is a decided tendency toward grouping about the pigmented areolar areas of the breasts, where the protecting skin is disproportionately thickened, and a uniform trend toward pedunculation exists. A glance at the shoulder girdle, front and back, shows a number

of the small warty excrescences which are quite often found in persons, above the age of 40, of the dark skin, fatty, pigmented type. In those persons there are seldom more than three or four tumors; but the question may be raised as to whether or not many more of these than are diagnosed are really mild fibromatoses. The diagnosis is readily made in the presence of many tumor nodules, but is this a prerequisite to the diagnosis? It must be admitted that the "feel" of the occasional and scattered nodules is quite different from that of the well developed cases, but it is probable that the incidence of early fibromatoses is higher than commonly it is supposed to be, since there is a factor of self limitation in their growth.

Along the margin of the right scapula is a mass the size of a hickory-nut, heavily pigmented and consisting almost entirely



Fig. 2.—Involvement of the skin of the back.

of a cavernous angioma. The profusions of vessels here, contrasted with their scarcity in most of the other masses, raises the question as to whether they are of the same type in different stages, or entirely different and coincidentally developing types.

Usually this patient is not inconvenienced in any way except by the mental anxiety. Sudden temperature changes, however, produce tingling, and a feeling of tenseness and swelling in the nodules. Sudden mental stress, anxiety or anger produces the same result.

There is no evidence of intracranial pressure. The right olfactory, optic, oculomotor, trigeminus, facial, and the cochlear branch of the eighth cranial nerves, however, appear to be involved.

A wide variety of distinctive odors was readily recognized without hesitation, but thorough cocaineization of the mucosa

5. Unna: Histopathology, p. 847, quoted by Ormsby, O. S.: Diseases of the Skin, Philadelphia, Lea and Febiger, 1915, p. 601.

of the left nostril high up produced much confusion, on several occasions, leading to complete errors in identifying substances formerly very familiar.

Perception of light remains only on the right side, dating from the age of 6, or thereabouts, and coincident with the development of the first tumor masses remembered. At that time the right visual field began to diminish steadily, until in a short time only the present amount of vision remained. The left fundus and visual field are normal. The right fundus shows merely a small, pale, atrophic disk. There is no edema or change in the retinal vessels. No change in the intensity of a point of artificial illumination is perceived by either the right or the left half of the right retina, suggesting a lesion anterior to the optic decussation. Coordination of the ocular bulbs is markedly disturbed, and while the right external rectus and superior oblique retain practically their full power (the fourth and sixth nerves), the remaining extrinsic eye muscles (the third nerve) are quite unbalanced; the eye rolls aimlessly, and on attempt at forcible closure of the lid, deviates out and upward (Bell's phenomenon). The bulb is considerably proptosed. The upper lid hangs loose and flaccid over it, and cannot voluntarily be raised. The lower lid is in mild ectropion. The drooping of the upper lid was first noted a year after the initial disturbance of vision on the same side, and has gradually increased. The right pupil is widely dilated, very slow both to light and accommodation, and does not exhibit the consensual reaction. Therefore a paresis of the third nerve is suggested.

The patient is unable to elevate the frontalis muscle, which speaks for a peripheral lesion of the seventh nerve (Bell's paralysis), since in central lesions of this nerve the power of the frontalis muscle is largely retained. The nostril of the same side is patently collapsed. Taste, however, is undisturbed over the entire tongue, and the right submaxillary and sublingual glands secrete normally, and respond to atropin, suggesting that the chorda tympani is undisturbed by the lesion affecting the seventh nerve.

About two years after the initial disturbance of vision, the right side of the face became softened and "looser"; the buccal wall was occasionally bitten, and food collected in the cheek pouch, suggesting involvement of the buccinator nerve (a branch of the third division of the trigeminus) as well as the facial nerve. The mouth is drawn somewhat more to the left than appears in the illustrations, and the right eye could not be forcibly closed, thus indicating a seventh nerve lesion. The area served by the sensory portions of the maxillary and mandibular divisions of the trigeminus is now relatively insensible, except to extreme degrees of stimulation. The area of the ophthalmic division of the trigeminus appears normal, since the lacrimal glands of the right side secrete normally and respond to atropin, and the areas of distribution of the frontal and supra-orbital nerves (branches of the ophthalmic nerve) are sensitive to ordinary stimuli.

More than a year after the trouble with the face came the first intimation that the patient was becoming deaf in the right

ear. According to her statement, no increase of deafness has been noted since that time, although such belief is not based on any accurate tests. The type of the present deafness is that

SOUND CONDUCTING AND PERCEIVING

Test	Right	Left
Rinné.....	+ (Bone < normal)	+ (Bone = normal)
Weber.....	.....	.....
Dench.....	+ (—5 seconds)	+ (—3 seconds)
C ₁	+ (—18 seconds)	+ (—3 seconds)
Voice (moderate low).....	32 feet	44 feet
Acoumeter.....	2 feet	41 feet, 4 inches

for high tones. Sounds in the moderate wave lengths are detected with little difficulty, provided attention is concentrated on them. There is reason to believe that even in the moderate amplitudes, tone "islands" are present; but extended detailed examination was refused. The accompanying table gives the results of the sound-conducting and sound-perceiving apparatus. The minus quantities, in parentheses, signify that time below the normal ear. All timing and distance measurement is accurate. A combined deafness of the right side is of course suggested, but the great preponderance is on the side of the nerve.

So far as can be determined, the vestibular portions of the eighth nerve and its connecting tracts are normal. Normal falling, vertigo and past-pointing result from both the stimulation of turning, and douching. The right nystagmus is very confusing because of lack of control of the extrinsic muscles, the rolling of the bulb making decisions regarding nystagmus unsatisfactory and contradictory.

Figures 3 and 4 are views of the right foot, which is the most extensively involved of any of the extremities. The fourth toe is lost in the maze of redundant tissues although the phalanges are readily palpable, and appear normal on the

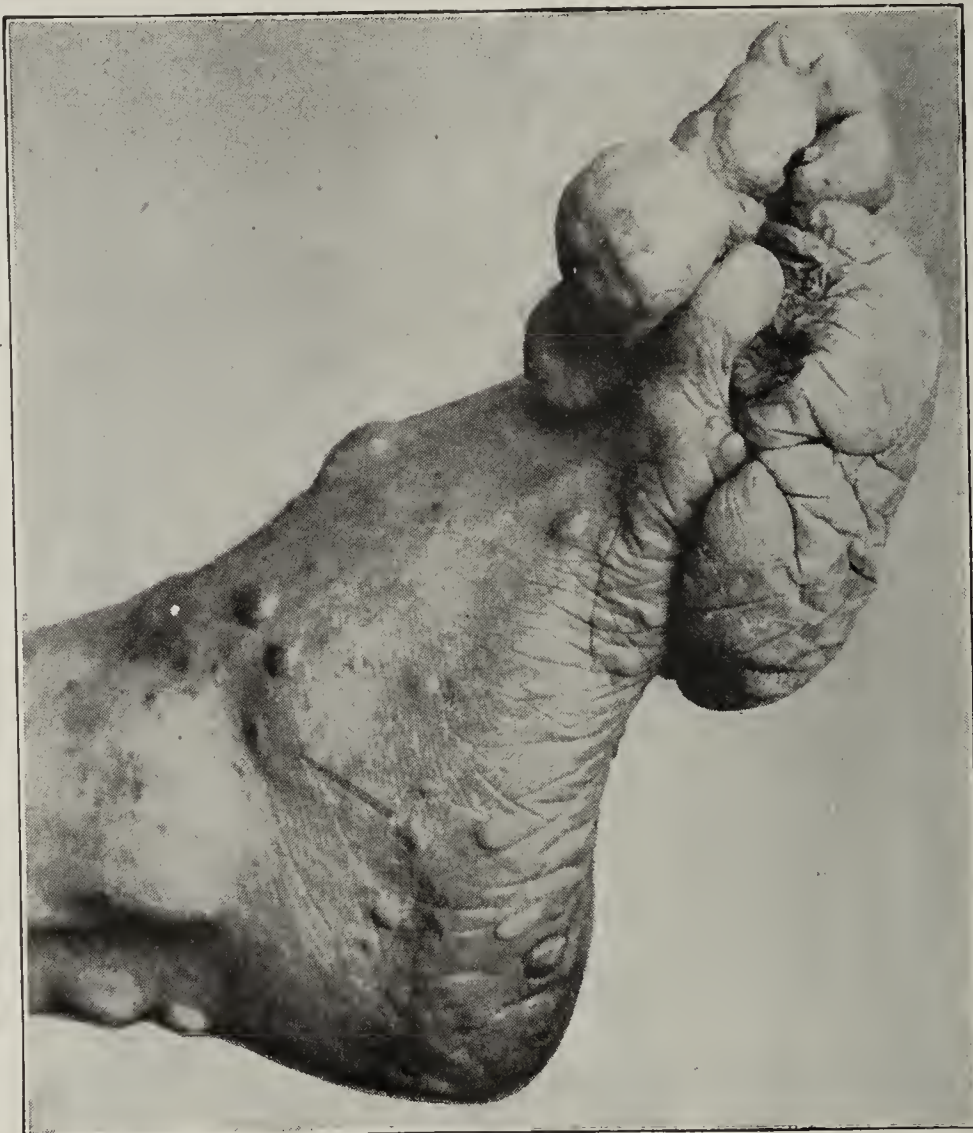


Fig. 3.—Enormous tumor mass on the right foot.

roentgenogram. The thick pad on the sole is devoid of the sensation of pain, except that deep pressure produces a dull ache. Other sensations are normal. The skin is soft, thin and but little calloused, while the mass feels much like a large varicocele. The patient states that the malformed portion of the foot seldom sweats. Except for the mechanical inconvenience in walking, no discomfort is experienced. All reflexes and sensory tests on both feet are normal.

There is nothing in the general physical examination to suggest involvement of the cord tracts or the peripheral spinal nerves. Proctoscopic examination in search of the rectal tumors described by Cooke⁶ reveals nothing of importance. The blood and spinal fluid Wassermann tests, after provocative treatment, are negative. The gold chlorid curve shows nothing suggestive at either end of the scale. The general deep and superficial reflexes are neither sluggish nor exaggerated. No atrophy, fibrillary twitching, paresis, trophic changes or reaction of degeneration could be demonstrated.

6. Cooke: Am. Med., Nov. 21, 1903, p. 818.

COMMENT

Allowing proper latitude for a history, in its bearing on a relatively remote period, it would seem that the involvement of the cranial nerves began early, and started with those lying anteriorly. The fourth, motor (portio minor), sixth, vestibular eighth, tenth, eleventh and twelfth cranial nerves appear untouched. According to Bassoe and Nuzum,⁷ "the fifth and eighth cranial nerves are those most frequently involved within the skull, but when we include all the peripheral nerves the order of frequency seems to be: vagus, abdominal sympathetic, sciatic." In this case none of this triad could be proved abnormal. The involvement on the right side has been apparently regular, successive, and to a degree, at least, self limited. Repeated efforts to implicate the hypophysis in connection with the eye disturbance, by means of functional tests and gland feeding, proved unsuccessful. There is, moreover, no skeletal or soft tissue stigmas or other signs of any endocrine dyscrasia.

In the absence of necropsy, many deductions are justified. However, "it may be called that, unlike all the other cranial and spinal nerves, the optic and olfactory are devoid of the sheaths of Schwann, and of the cells giving origin the same."⁸ If the involvement of the first and second cranial nerves in this patient is due to the same type of tissue change seen on the external surface, it would seem that the death of Schwann plays a part of immensely minor importance in the etiology of the disease. This brings up the question of fibrous sclerosis, which is beyond the scope of the report.

201 North Main Street.

⁷ Bassoe, Peter, and Nuzum, Frank: *Nerv. & Ment. Dis.* 42: 785 (Dec.) 1915.
⁸ Adami, J. G.: *Principles of Pathology—General Pathology*, 1910, p. 715.

Mothers' Pensions—According to a bulletin entitled "Laws Relating to Mothers' Pensions," just issued by the Children's Bureau of the U. S. Department of Labor, thirty-nine states, Alaska and Hawaii now have some public provision for mothers left with young children to support, and in at least one of the remaining states, mothers' pension laws have been under consideration. Canada, Denmark and New Zealand also have passed legislation providing aid for mothers. Generally speaking, all mothers' pension laws provide for the payment of a stated weekly or monthly sum for each child under a certain age to mothers who are dependent on their own efforts to support their children, and are morally and physically fit persons to bring up their children. There is considerable variation in the laws in force in the different states. Some states provide pensions only for widowed mothers; others include women who are divorced or who have been deserted by their husbands, or those whose husbands are in prison, in state asylums, or who are otherwise incapacitated.

OXYGEN INFLATION OF THE PERITONEAL CAVITY

A PERSONAL EXPERIENCE

ARMITAGE WHITMAN, M.D.

NEW YORK

In an article by Stein and Stewart¹ on the roentgen examination of the abdominal organs following oxygen inflation of the peritoneal cavity, the roentgenograms were sufficiently beautiful to justify the moderate claims for the method as an aid to diagnosis in obscure abdominal conditions. The article referred to its employment in some eighty cases, and the bibliography embraced a number more. The authors' series of cases furnishes apparently the only instances of the deliberate employment of the method for diagnosis only, the other articles referring to its more or less casual use after laparotomies, paracenteses, and as a therapeutic agent in tuberculous peritonitis. However, the results of its use were in all cases at least innocuous.

It at once occurred to me that the method described offered a brilliant opportunity for a demonstration of the effect of posture on the internal organs. It is known in some circles, and halfheartedly admitted in others, that posture has a definite effect on the position of the liver, kidneys, colon, etc. Almost any one will grant that a person standing in a slouchy attitude, with the chest flat, back hollow, and abdomen prominent, is more likely to suffer from floating kidney or intestinal stasis, for example, than one who stands erect, aerates his lungs, and gives his viscera at least a modicum of outside support. In reality, however, such a patient stands small chance of this theory being put into practice until the appendix has been removed, the

floating kidney anchored, and possibly the mesentery plicated. If the patient is a woman, the operative possibilities are still more fascinating.

Abdominal palpation is unsatisfactory and almost impossible in the erect position, besides being a means far too susceptible to individual prejudice and variation. If we might show, however, a roentgenogram of the liver forced well up against the diaphragm, and the spleen and the kidneys back in their respective beds, all brought about by a change in the erect attitude, the demonstration would be as nearly final as one could ask. I therefore determined to make the first experiment of a series on myself, as I was confident of my ability to assume the desired attitude. I inquired from Dr. Stewart as to the possible disagreeable effects



Fig. 4.—Enormous tumor mass on the right foot.

¹ Stein, Arthur, and Stewart, W. H.: *Ann. Surg.* 70: 95 (July) 1919.

of the injection on the patient, and was told that it naturally produced a sensation of distention and occasionally some pain between the shoulders, but that these symptoms never lasted more than twelve hours, or over night, and indeed were usually confined to the aged and very nervous. It was his routine to give one eighth grain of morphin about an hour previous to the injection. The quantity of oxygen was no longer measured by the rubber bag, but was injected directly from the tank. The pictures might be taken within a few minutes, allowing time only for the sufficient dispersion of the gas about the abdomen. The bowels were evacuated in the morning, the usual breakfast and practically no lunch being taken.

Dr. W. F. Cunningham kindly consented to make the injection for me. The point selected was at the outer margin of the left rectus muscle, about one inch below the level of the umbilicus. No preliminary morphin was given. The skin and fascia were infiltrated with 1 per cent. cocain hydrochlorid. A No. 16 trocar and cannula was then introduced through a minute skin incision. No pain whatever was felt from the passage of the trocar. The trocar was withdrawn and the cannula connected with a rubber tube leading from a bottle of hot sterile water, which was in turn connected with the oxygen tank. The tank was then turned on and the oxygen allowed to flow slowly through the warm water into the peritoneal cavity. There was no sensation at first. After two or three minutes, bubbles could be felt gurgling about. After ten minutes, liver and splenic dullness was obliterated, and a fairly marked sense of distention became apparent. Turning slightly from side to side seemed to facilitate the dispersion of the gas. In about fifteen minutes a dull, aching pain began between the shoulders, and the injection was discontinued. At this time the abdomen, from having been almost scaphoid, was no more than flat. There was no appearance of distention. It was tympanitic all over, the lumbar gutters being the last regions to become so. Splashing and gurglings were apparent on auscultation. There was no alteration in respiration or pulse rate, which remained at 72. The blood pressure was not recorded. The first roentgenogram was taken in the supine position on the operating table, and seemed to show a fairly uniform dispersion of the gas, not however, as clearly as had been expected.

I then stood up. Rising was performed slowly and with assistance and was no more than uncomfortable. Anteroposterior roentgenograms were taken in the slouchy and the erect attitudes, and immediately afterward photographs were taken in the same attitudes, to accompany the roentgenograms and to contrast with the same poses taken before the injection. Taking the pictures did not require more than ten minutes, during which time I was conscious of increasing epigastric distention and discomfort, which made me anxious to lie down while the roentgenograms were developed. They were not as satisfactory as had been hoped, so that I stood up again to have a second series taken. The act of rising this time was much more uncomfortable, and I was conscious that the discomfort was increasing. While getting my clothes on and walking to the door, I found myself walking and holding myself with extreme care to avoid any jar.

As home was near by, it seemed as well to go there and lie down as to stay indefinitely in the hospital. When I came outdoors, the discomfort at once became much greater. The chest was held in midexpansion, and the breath was held as long as possible and expelled with a grunt. Inspiration was shallow, and the thoracic walls were held as rigid as could be, apparently in the effort to restrict the movements of the diaphragm. After I had walked one block very slowly the discomfort had become a pain, and the apprehension of being jarred or bumped had become extreme. It was literally fear lest a collision or decided jar would cause something to burst. The pain between the shoulders was increasingly severe. When home was reached, lying down at once gave great relief. The respiratory embarrassment disappeared. The sense of abdominal distention and oppression in the epigastrium remained. Four hours after the time of injection it was possible to sit up and eat a light supper. Any movement, however, was made with extreme care, and a resumption of the erect attitude for any time caused a recurrence of the pressure on the diaphragm. Except for discomfort on turning, sleep was not interfered with.

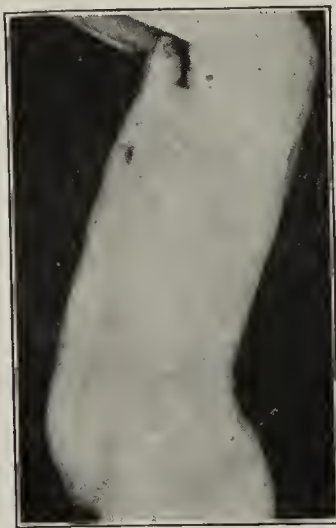


Fig. 1.—The slouchy attitude.

The following morning I woke comfortable; but when I moved, the abdominal cramp at once returned. Dressing was attended with much discomfort, bending over to lace the shoes in particular being almost impossible. In going out to walk three blocks to the office, I at once felt very acute discomfort. It was impossible to walk at even a reasonable rate. The apprehension of a jar returned, and a new symptom appeared, extreme pain referred as nearly as I can describe it, to the head of both humeri, worse as a rule on the right side. I was never able to decide whether or not that particular pain was caused by the cold air or the added exertion of walking on the street. It was not caused by the usual degree of activity about the house. Standing and sitting in

the ordinary position were excessively uncomfortable. Reclining in a Morris chair gave considerable relief, and while I remained quiet in that position, there was simply a constant sense of epigastric oppression. I could not appreciate any diminution in the volume of gas.

For ninety-six hours after the injection, these symptoms remained practically constant. Becoming more familiar with the gas, and therefore more contemptuous of accidents, I finally discovered what could give relief. The most effective remedy for the continuous epigastric oppression was standing on the head. After a few seconds in that position the gas could be felt escaping from the subdiaphragmatic space and gurgling up into the true pelvis. Respiration then became at once easy, and the cramped sensation and abdominal distress disappeared. If I could then be lowered to the horizontal, and pillows placed under the sacrum to hold the lower quadrants higher than the upper, the relief might persist for some fifteen minutes. Any change of position, however, released the gas, and the pressure on the diaphragm recurred. Urination was not affected. Defecation became more frequent, three movements a day being the average, loose in character, accompanied by considerable gas. Movements were followed by slight and temporary relief. It may be of interest to note

it was impossible to distinguish by sensation between gas within and gas without the intestine. Appetite was increased, but probably because its satisfaction produced so much discomfort as to make a meal inadvisable. There were, however, two or three sudden attacks of hunger, very much like the sharper pain of chronic dyspepsia, which were relieved by a few crackers and a glass of milk. The pulse rate never appreciably altered. Respiration was increased by exposure to cold and exertion. There was no evident change in color from oxygen absorption. The gas was absorbed—or at least the symptoms of pressure disappeared—quite suddenly on the fourth day after the injection. Gas bubbles could still be felt on the fifth and sixth days, but their presence was not sufficient to cause noticeable symptoms. During the last four days I should have been grateful for the opportunity to spend my entire time in bed. Short of being totally incapacitated, I have never undergone such an uncomfortable, painful and thoroughly disagreeable experience.

I am putting this experience on record not because I wish to discourage the employment of the method, the importance of which has been already demonstrated, but because I can find nothing in the literature that might lead one to take into account the sensations of the patient. I ascribe the wide variance between my own and the average experience to the fact that I was not, either before or after, a bed patient. I assume that the average subject is in a hospital for diagnosis, and that the oxygen injection is only one of a number of procedures, between and during which the patients are in bed or at least on their backs. As to a number of the previous experiments I had been of a different nature—the oxygen having been injected after operation, after removal of a tumor or of fluid from the abdomen—when it was employed purposely to avoid too sudden a change in intra-abdominal pressure. Manifestly this would modify the severity of the subsequent symptoms. I cannot see that immediately getting up and walking about could have been responsible for their increased severity and prolongation, as they were relieved at once by lying flat or standing on one's head. The effect was evidently, then, purely mechanical, and one would suppose that activity and constant shifting of position would promote rather than delay the absorption of the gas. The accompanying illustrations will show that the amount of gas employed was not excessive, and certainly produced no undue amount of distention.

CONCLUSIONS

The experiment was a failure in regard to the purpose for which it was undertaken. In the erect position, the gas once having risen to the subdiaphragmatic spaces, it was impossible to exert sufficient pressure from below to force the liver up and squeeze the gas out. Contraction of the abdominal muscles from coughing upward also primarily reduced the space into which the gas could escape. The actual injection of the gas was practically painless, and its presence in the peritoneal cavity was noticed by none but mechanical disturbances incident to its physical volume.

These mechanical disturbances were of such an unpleasant and disabling nature that the method

should not be employed without their due consideration. The patients should be warned of what they might reasonably have to expect, and be prepared to spend from three to four days in bed following the injection. In nervous individuals the consequences might be considerably more disturbing.

283 Lexington Avenue.

"ANTIPLASMA" *

C. C. BASS, M.D.

NEW ORLEANS

A so-called specific cure for malaria called "Antiplasma," made by the Malarial Specific Company of New York, was recently investigated by the Propaganda for Reform department of THE JOURNAL.¹ The ridiculousness of the claims were noted and the composition of the nostrum as determined by the A. M. A. Chemical Laboratory was exposed.

Under ordinary circumstances such a "remedy" would not warrant further notice: perhaps not even that already given. Since the stuff is being extensively sampled and in some instances, at least, sold under the most extravagant claims to physicians, druggists and others in some of the Southern states, further information about it may be useful.

Feb. 19, 1920, the "southern representative" of the Malarial Specific Company brought a boy to see me who had just finished taking the third course of treatment with this "specific cure." His blood had been examined before and during the treatment and found to contain malaria plasmodia by Dr. F. M. Johns. I took a specimen of his blood, examined it, and found many malaria plasmodia, some of which were shown to the representative of the company. The explanation then offered for this failure to cure was that in the first two courses of treatment a preparation made by the wrong

formula was used, and the last time he took the medicine only six days instead of seven, as the directions on the bottle advise.

Feb. 13, 1920, Dr. R. D. Dedwylder, Ruleville, Miss., put two men, in whose blood malaria plasmodia were found, on the "Antiplasma" treatment. The treatment was completed according to the "direction on the bottle," and on February 21, blood specimens were again collected. In the meantime, one of the patients had a clinical attack of chills and fever on the fifth day of treatment. I have examined the blood of both of these patients, taken February 21, after completing the treatment. Each contains many malaria plasmodia.

It so happens that the patient seen in New Orleans had estivo-autumnal plasmodia; one of those in Ruleville had tertian and the other quartan. We have in these three cases a fair trial of the "cure" in one case each of estivo-autumnal, tertian and quartan malaria, with 100 per cent. of failures. The use of this product to the neglect of the absolute specific for malaria, quinin, will contribute to the continuation of the disease in those who have it, and to spread of the disease to others.



Fig. 2.—The erect attitude.

* From the Department of Experimental Medicine, Tulane University of Louisiana School of Medicine.

1. Antiplasma, J. A. M. A. 74: 618 (Feb. 28) 1920.

Clinical Notes, Suggestions, and New Instruments

REPAIR OF CRANIAL DEFECT BY NEW METHOD

REPORT OF APPARENTLY SUCCESSFUL CASE *

GEORGE NOBLE KREIDER, A.M., M.D., SPRINGFIELD, ILL.

History.—J. W. W., boy, aged 4 years and 5 months, residing near Bates, Ill., accompanied his grandfather, about 2 p. m., Nov. 18, 1919, to the barn lot where there were several horses. When the grandfather opened a gate, one of the horses ran out, and in passing kicked the child forcibly over the left eye. He was immediately taken to the house, where the head was washed off.

Dr. J. C. McMillan of New Berlin, Ill., was called. Recognizing the serious character of the injury, he applied a sterile gauze dressing and took the child at once to the Springfield Hospital, where he arrived about 4:30 p. m. There was immediate consultation.

Examination.—There was a lozenge shaped compound fracture; the fissure in the bone was about 3 inches long, and 1 inch broad, running down at each end to a point. It began near the outer border of the superciliary ridge and passed upward and backward over the frontal prominence nearly to the median line. Two large pieces of bone were indriven, causing loss of considerable brain substance.

Treatment and Results.—Under ether anesthesia, about six pieces of bone were removed. The two large fragments were inserted in a pocket, which was prepared in the left hypochondriac region, and was made by a slightly curved incision, nearly 3 inches long. The tissues were separated by artery forceps and scissors. The two pieces of skull bone were completely buried, and the incision was closed.

The wound in the frontal region was thoroughly cleansed, a pledget of iodoform gauze was inserted in the cavity, and the edges of the wound were brought together, except at the ends.

Because of the circumstances under which the wound was received, a good sized dose of tetanus antitoxin was administered subcutaneously.

There was considerable oozing from the head wound, and slight fever; also, for a few days, edema of the left eye; otherwise the progress of the case was satisfactory.

November 29, under ether, the iodoform gauze was removed, and the edges of the wound were trimmed and brought closely together. The head was again thoroughly cleansed and permanent dressing was applied.

December 31, pulsation was visible and palpable where the bone was lacking. The scalp wound was solid except at one end where the mother had bumped it in putting the child on a chair at the dinner table. Final operation was deferred one week until this had healed.

Jan. 7, 1920, at 2 p. m., assisted by Drs. C. W. East and J. C. McMillan, I made a horseshoe shaped incision beginning one-half inch from the outer edge and to the left of the

original wound, and extending to one-half inch beyond the inner edge of the wound, or about the median line. The scalp was laid back toward the eyebrow, beyond the defect in the cranium. The dura was found firm and solid, closing off the brain. The edges of the dura were lightly dissected. The two fragments of bone were taken from the pocket and placed exactly in their former positions. A considerable layer of fat had become fastened to the outer side of these bones during their sojourn in the abdominal wall, and this was utilized in sewing them in place with fine catgut. The large scalp flap was then brought over, completely closed with silkworm gut, and a firm dressing applied.

January 14, the dressing was removed from the head for the first time. The new incision, which had been closed by silkworm sutures, was found to be perfectly dry. The line of first injury showed a pin hole opening at two points. There was a slight serous exudate, no pus was apparent, no pulsation was apparent and the bones seemed to be in good position and adherent. The abdominal wound was perfectly healed.

January 26, the wound was dressed and the bone appeared firmly fixed.

COMMENT

Three points should be particularly emphasized:

Fig. 2. — Implanted fragments of skull, approximate size.

1. The implants should be placed in the hypochondrium with the outer surface of the bones in contact with the fatty tissues in this region. When they are removed, as much of this fatty tissue as possibly should be brought out with the bones. When they are replaced, this tissue should be sewed with fine catgut to the epicranial aponeurosis and the implants secured in place.

2. Some writers seem to think it quite necessary to dissect the dura away from the edges of the defect so as to bring its exposed outer surface on a level with the inner table of the skull. This was not done in my case. Unless there is good reason for this extensive, and possibly useless, dissection it should not be attempted. Even though a slight protuberance may exist, it is better than a defect. The cranial cavity is firmly and hermetically sealed, which is the important point.

3. A new flap was made to expose the defect. When the implants were put in place and enclosed, as I have indicated this new flap exerted a certain amount of pressure, and finally will depress the dura to its normal position.

CONCLUSION

Usually, by implantation, it is possible to preserve the fragments of cranial bones for reimplantation when the original wound is in proper condition. The result in this case has been perfect recovery.

522 Capitol Avenue.

A SIMPLE METHOD OF DISTINGUISHING WHITE FROM RED CELLS IN SPINAL FLUID CELL COUNTS

S. R. GIFFORD, M.D., OMAHA

While laboratory men who are looking at spinal fluid every day have no difficulty in quickly distinguishing between these cells without staining, clinicians of less experience will often find a differentiation troublesome, even with the high power. The use of acetic acid or Turk's solution has the obvious disadvantage of further diluting what may be a fluid of low cell count.

I have found no convenient method in the textbooks of clinical diagnosis, and the following procedure which, for its simplicity, is probably being used independently by many men, I have not seen described:

The fluid is taken in two test tubes. To one of these, containing about 2 c.c., is at once added one drop of Loeffler's methylene blue, and the tube shaken gently. The second tube is saved for other tests. Examination after two minutes

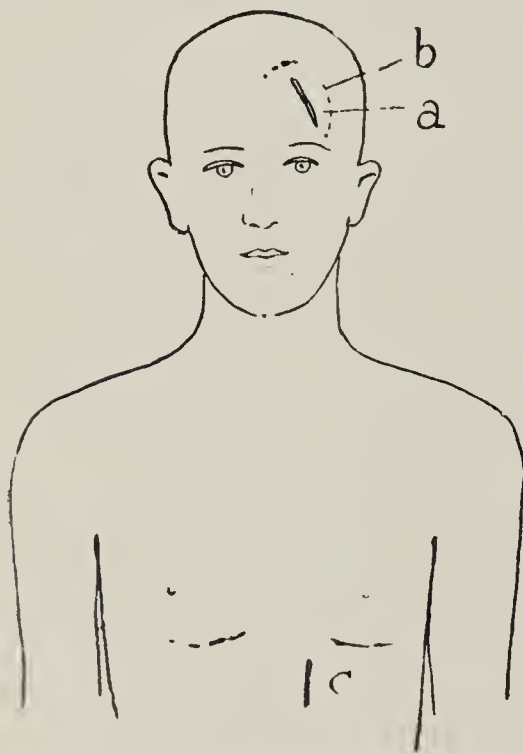


Fig. 1.—Repair of cranial defect: a, site of injury; b, line of incision for repair of defect; c, site of implantation.

* Patient presented to the Sangamon County Medical Society, Feb. 9, 1920.

reals the nuclei of the white cells staining distinctly, so that they may be easily distinguished from red cells by low power, and lymphocytes from polymorphonuclears by high power. If stain is not acting quickly, two or three more minutes may be required, but never long enough for coagulation to affect results appreciably, except in a very heavy, turbid fluid.
67 Brandeis Building.

COMBINED SCLEROSIS DUE TO ANEMIA OF THE
PERNICIOUS TYPE: REPORT OF CASE.
FRANK H. REDWOOD, M.D., NORFOLK, VA.

History.—Miss M. A., aged 48, a suit saleswoman, whose family history was unimportant except that a maternal aunt died of tuberculosis, and whose habits were good, died in April, 1919, that her feet burned constantly during the day and that she felt tired. Two weeks later she had a sense of numbness in both feet, and in the legs as far as the knees, and had some difficulty in walking. When I first saw the patient, September 12, she was confined to bed because she said she could not walk alone. She complained of numbness in the lower limbs, slight nausea for the preceding two weeks, constipation, and a severe pain in the lumbar region of the legs whenever she moved. She said she had a sensation of something's turning over in the abdomen.

Physical Examination.—The patient was a well nourished, somewhat obese woman. She lay quietly in bed; when I attempted to examine her she cried out with pain; but when attention was attracted she could be examined without difficulty. The muscles were flabby. The heart was normal, pulse was 75 in the recumbent posture and 80 when the patient sat up. The systolic blood pressure was 120 and the diastolic 70. The teeth were in poor dental repair, and the gums were suspected of being abscessed. The thyroid was enlarged, the skin was rather dry, the tongue was slightly red, and the throat was normal. The chest and abdomen were negative.

Neurologic Examination.—The gait was paraplegic and unsteady, the station was unsteady but there was not a true Romberg sign. All deep reflexes were quite lively, but equal on the two sides. The superficial reflexes were not elicited, but this was thought at the time to be due to a loose abdominal wall. There were no ankle or patellar reflexes, no Babinski, Oppenheim, Chaddock, Gordon or Hoffmann sign, and no Kernig sign. There was no astereognosis or adiadochokinesia. There was slight ataxia in the finger-nose test. All four extremities showed marked weakness. The pupils were normal in every way, as were the fundi. The cranial nerves were normal. The lower limbs showed all areas of analgesia or, rather, a delayed pain sense. Sphincter control was normal. Roentgenograms of the pelvis disclosed four that were badly abscessed. The urine was normal, the blood Wassermann was negative, the spinal fluid was clear; there were 100 cells, but the globulin and Wassermann tests were negative. With the exception of 78 per cent. hemoglobin, the blood count was normal. Examination of the stools and the stomach contents was not made.

Clinical Course.—During October and November, the patient improved somewhat, and on repeated examinations physical signs remained the same. During a period of twelve days in the latter part of November, I did not see the patient. On December 2, I was called to the house and was amazed to find the patient in a serious condition. She was acutely ill, the skin was sallow or lemon colored, the mouth dry and cracked and the tongue, sore. All deep and superficial reflexes were absent, and there was a Babinski reflex on the right side. Deep muscle sense was lost. There was an easily exhaustible ankle clonus. The patient had absolutely no control over the rectal or vesical sphincter. The blood count revealed hemoglobin, 72 per cent.; red cells, 3,280,000; white cells, 7,600. The differential blood count revealed polymorphonuclears, 71.5; small lymphocytes, 18; large lymphocytes, 4.5; transitionals, 5, and eosinophils, 1. The red cells showed a few nuclear bodies, anisocytosis and poikilocytosis. Ten days later, red cells were 2,300,000, white cells 14,000,

and hemoglobin 68 per cent. The patient grew rapidly worse and died, December 5. Necropsy was refused.

COMMENT

Degenerative changes of the cord in pernicious anemia are quite common, but cases in which symptoms are referable to the cord are comparatively rare. This case is reported chiefly on account of the difficulty of a diagnosis before the rather sudden change in the physical findings. At the first examination, the blood picture was practically normal, the deep reflexes were increased, and there were no pathologic reflexes and no sphincter disturbances. Eight days before death, the blood picture was that of atypical pernicious anemia, the deep and superficial reflexes were absent, there was a Babinski reflex on the right side, and the patient had no control of the sphincters.

310 Taylor Building.

A CASE OF HUMAN ANTHRAX*

GERALD R. ALLABEN, S.B., M.D., BUHL, MINN.

Anthrax in man is still uncommon enough to warrant the report of a case.

History.—W. I. L., man, aged 18, Finn, clerk in a mining office, noticed a small nodule on the left side of the neck just below the ear. Swelling of the neck began immediately. The following day, he consulted the physician at the mine, and hot compresses were applied. Twenty-four hours later, when next seen by the physician, the symptoms had progressed rapidly, and the patient was brought to the hospital. He had a temperature of 104 F.; pulse, 130, and respiration, 28. There was extreme swelling of the neck and face extending around to the right side and down to the left breast, and marked edema of the throat involving the uvula. Breathing was embarrassed and noisy, and there was great difficulty in swallowing. The patient complained of no pain except the discomfort from the edema. Blood count revealed 26,000 leukocytes. The urine was negative. The lesion was about the size of a nickel, and distinctly firm and indurated; the edges were raised and dotted with small vesicles containing a clear yellow serum. The center of the nodule was depressed, dark and necrotic. Smears showed anthrax bacilli, some specimens showing the characteristic spore formation.

Operation and Results.—Under local anesthesia the nodule was thoroughly excised, the base was cauterized with 95 per cent. phenol (carbolic acid), and the surrounding subcutaneous tissues were injected with 5 per cent. phenol. A dressing of 95 per cent. alcohol was then applied. Cauterization was repeated twenty-four hours later, and alcohol dressings were continued. The patient's condition did not improve, however. The edema remained unchanged. The patient became restless and noisy; the temperature remained high, reaching 105 at the last; the pulse grew weak and more rapid; leukocytes increased to 42,000; and death took place just forty-eight hours after admission to the hospital, and four days from the onset of the infection.

Comment.—A specimen of blood, sent to the laboratories of the state board of health at St. Paul for culture was reported free from anthrax organisms. It would rather be expected that a positive culture would be obtained in such a malignant case, and with the degree of leukocytosis that was present. The treatment in this case, aside from the management of the local condition, was largely supportive. An attempt was made to secure antianthrax serum for administration, but it did not arrive in time. It is more than probable, however, that the serum would have had no effect on the course of the disease. It seems likely that a new shaving brush was the cause of the infection, as has been demonstrated in many of the cases occurring in the army cantonments. This patient had bought a new brush one week before, and had used it only twice, the last time being the night before the appearance of the nodule on his neck. The brush was secured, and sent away for culture, but was apparently destroyed without examination.

* From the Shaw Hospital.

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SATURDAY, APRIL 10, 1920

ACETYLSALICYLIC ACID (ASPIRIN) AND HEAT REGULATION

How largely the use of drugs is still based on empiric experience is now and then emphasized anew when scientific investigation directs its attention to the real mechanism of their action. This paucity of accurate information regarding the precise mode of action of many commonly used therapeutic agents is illustrated in the case of acetylsalicylic acid (aspirin). The drug is employed daily in medical practice, and has already attained the undesirable popularity of becoming a "household remedy" exploited daily in the public press and on the billboards. If a conscientious student of medicine were to have inquired only a few months ago regarding the details of the antipyretic manifestations of acetylsalicylic acid, his commendable inquisitiveness could not readily have been rewarded with accurate information. This is not due to the novelty in the use of acetylsalicylic acid, for the compound was introduced into therapeutics more than twenty years ago.¹

Thanks to investigations conducted by Barbour² in the Department of Pharmacology of the Yale School of Medicine, its action on heat regulation has been somewhat elucidated. Unexpected is the unlike behavior exhibited by normal, in contrast with febrile persons toward the drug. In the former, a dose of 1 gm. or more of acetylsalicylic acid produced no significant difference whatever in the output of heat. This absence of augmented heat dissipation was observed despite the fact that the drug was evidently pharmacologically active, as shown by an obvious mild stimulation of the total metabolism by therapeutic doses in the majority of normal persons. Barbour believes that there is probably no change in the nature of the materials burned, for the results as a whole indicate that the drug, in this dosage, does not alter the respiratory quotient. Any tendency for the body temperature to fall is probably compensated for by the

slight increase in heat production in the normal organism.

The observations on febrile persons, on the other hand, tell a different story. Acetylsalicylic acid, in 1 gm. doses, which have no such action in normal persons, exhibits a marked antipyretic effect in febrile temporarily afebrile and convalescent subjects. Like other antipyretic drugs, it exerts its temperature reducing action essentially by increasing the process of heat elimination. Barbour notes that although stimulation of the metabolism is not seen, as in health there is at least no depression at all comparable in extent to the increase in heat dissipation.

Along with the altered heat regulation there is a tendency toward a decrease in the pulse rate. Temporary cardiac disturbances have incidentally been noted—a fact in itself warning against indiscriminate medication by the untrained. It is a striking fact that the sensitivity to the drug noted in fever may continue in the temporarily afebrile and convalescent persons, with resulting subnormal temperatures. "It is not allowable, therefore," Barbour writes, "to state that antipyretics reduce an elevated but not a normal temperature; a more correct formulation of the facts is that antipyretics reduce the body temperature in fever cases (including temporarily afebrile and convalescent phases) but not in normal persons."

Why a drug should provoke increased heat elimination in fever, but not in health, is not easy to understand. That the phenomenon is not due to a lack of combustible material in the sick, for instance, to a decrease in the glycogen store of the body, has been determined; for Barbour³ has already demonstrated that feeding a carbohydrate, such as glucose, may actually enhance the fall in temperature when acetylsalicylic acid is given, rather than counteract it by increased metabolism. The precise nature of the peculiar sensitivity to such antipyretics therefore remains to be further elucidated.

THE INFLUENCE OF NUTRITIONAL CONDITIONS ON TUMOR GROWTH

One of the striking differences between cancer and infectious processes is exhibited in their opposite modification by conditions of nutrition, either local or general. Ligation of the lingual artery is a classical procedure for reducing the rate of growth of an inoperable carcinoma of the tongue, but no one would recommend such a procedure in the treatment of any sort of infectious process in this location. Old and deficient nutrition, loss of blood, chronic diseases, and intercurrent infections are all recognized as common factors in reducing the rate of growth of tumors, and it is axiomatic that carcinoma in the young and well nourished is commonly characterized by rapid development to a fatal termination. Equally certain it is that

1. Dreser, H.: Arch. f. d. ges. Physiol. **76**: 306, 1899.

2. Barbour, H. G., and Devenis, M. M.: Antipyretics, II, Acetylsalicylic Acid and Heat Regulation in Normal Individuals, Arch. Int. Med. **24**: 617 (Dec.) 1919. Barbour, H. G.: Antipyretics, III, Acetylsalicylic Acid and Heat Regulation in Fever Cases, *ibid.*, p. 624.

3. Barbour, H. G.: Proc. Soc. Exper. Biol. & Med. **16**: 136, 1919.

fects of these conditions on most if not all known infections is exactly the opposite of what it is in cancer. While with human cancer occasional exceptions to the foregoing general rules are observed, it is probable that, could all conditions be controlled or evaluated accurately, the exceptions would be rare indeed. Cancer in experimental animals can be controlled and studied under more satisfactory conditions, and such observations as have been thus made support the generalizations that are commonly accepted concerning the influence of nutrition on growth.

Experiments in which the diet of animals has been restricted have commonly shown that deficient food intake reduces the rate of tumor growth. A dietary deficient in an essential amino-acid may reduce the growth rate of inoculated tumors, just as it decreases the rate of growth in young animals.¹ Diets deficient in vitamins reduce the rate of growth of tumors,² while vitamin-rich diets have been said to favor tumor growth.³ As most of these experiments have been performed with inoculated tumors, which undoubtedly behave differently from spontaneous tumors, particular significance attaches to the observations of Maud Slye⁴ on the influence of pregnancy and lactation on the behavior of spontaneous tumors in the mammary gland of mice. Thirty each of nonreproducing and of reproducing females with spontaneous tumors of the same type, alveolar tubular carcinoma of the mammary gland, were carefully studied and compared. Without exception the amount of tumor grown by a female while reproductive was strikingly less than during her nonreproductive period, despite the fact that the tumors were in tissues that are stimulated to great activity during reproduction. These exact observations corroborated what had been observed as a general principle in handling great numbers of other mice not accurately measured and watched as in this special study. The difference in growth was remarkable. While the nonreproducing females lived rarely more than six weeks after the tumor was first observed, the average duration of life having been thirty-six days, the reproducing females frequently lived nearly a year, the average being 178 days, and many bore from six to eight litters. Especially remarkable are the figures for the rate of growth of the tumor as determined by frequent measurements, for in the nonreproducing mice the average daily growth was 999.4 c.mm., whereas in the reproducing females during the period of active reproduction, growth almost ceases, averaging in this series only 7.75 c.mm. After a reproducing mouse ceases reproduction, the rate of growth augments rapidly, so that the tumor may increase in size more in a few days than in as many months during reproduc-

tion. In the same mice that averaged only 7.75 c.mm. daily growth during reproduction, the rate after reproduction had ceased was 686 c.mm.

From these and other observations it would seem that while a tumor can withdraw for its own growth nourishment needed for its host, and evidently takes precedence over the somatic tissues in its affinity for nutritive supplies, the fetus in its turn takes precedence over the tumor, even as it does over the somatic tissues of its mother which it draws on for its nourishment, whatever the cost to the maternal organism. As Miss Slye says, the prolonged hiatus between pregnancies greatly complicates the study of the relation between pregnancy and tumor growth in the human species. During this prolonged hiatus the tumor may draw off the energy which would have continued to be used in reproduction if the pregnancies were not widely separated, just as is the case in mice kept constantly impregnated. This would account for any apparently conflicting testimony in human experience as compared with these studies. Finally, it is to be noted that in mice, as in women, infections in the pregnant are usually exceptionally virulent and usually quickly fatal, wherein we have another example of opposite biologic behavior of tumors and infections.

RECENT OBSERVATIONS ON THE CEREBROSPINAL FLUID

The cerebrospinal fluid has come to occupy an important place in modern clinical procedure. It is now frequently removed for diagnostic examination or therapeutic purposes; furthermore, the subarachnoid spaces which it occupies are sometimes utilized for the introduction of drugs intended to act on the nervous system. The determination of the mode of origin of the cerebrospinal fluid and its precise functions and physiologic relations to the various contiguous structures is obviously important. Unfortunately, the difficulties of experimentation in connection with this, as with many other parts of the central nervous system, have retarded progress. It need not be surprising, therefore, if some of the current views must be subjected to revision in the light of newer information or a more critical examination of beliefs already adopted.

One of the conclusions reached in recent years by a number of investigators, and already widely quoted, asserts that the cerebrospinal fluid is actively secreted by the choroid plexuses. Some writers believe that it is generated only within the ventricles, particularly the lateral ones, by a truly secretory process. It is pointed out that when the pathways by which the ventricles communicate with other parts of the brain are obstructed, the fluid collects so as to produce an internal hydrocephalus. Becht,¹ to whom we owe an unusually elaborate investigation of the subject coupled with a

1. Sweet, Corson-White and Saxon: *J. Biol. Chem.* **15**: 181, 1913; **21**: 311, 1915. Rous: *J. Exper. Med.* **20**: 433, 1914.

2. Benedict, S. R., and Rahe, A. H.: *J. Cancer Res.* **2**: 159 (April) 1917.

3. Corson-White, E. P.: *Pennsylvania M. J.* **22**: 348 (March) 1919.

4. Slye, Maud: *J. Cancer Res.* **5**: 25 (Jan.) 1920.

1. Becht, F. C.: *Studies on the Cerebrospinal Fluid*, *Am. J. Physiol.* **51**: 1 (Feb.) 1920.

trenchant critique of existing views and evidence, has pointed out that the well-known facts of internal hydrocephalus do not prove the specific point of formation; for in the region under discussion, increased production of cerebrospinal fluid might result from activity of the choroid plexus, from stimulation of the ependyma cells lining the ventricles, from increased transudation from the capillaries, or from the formation of intracranial lymph: any one or all of these factors may be involved. Further, the rate of formation may be perfectly normal, the departure from the normal consisting merely in decreased absorption.

Another sort of evidence in support of the specific secretory origin of the cerebrospinal fluid has been sought in the observations that drugs and tissue extracts known to promote the activity of well recognized secretory structures, like the pancreatic glands, seem likewise to facilitate the output of cerebrospinal fluid. Why should not it, too, be placed in the category of the typical secretions? In answer to this, Becht has pointed out the close dependence of the pressure and flow of the fluid on the arterial and venous pressures that exist at any corresponding period in the skull; and according to him, all the changes in the fluid pressure and fluid outflow that have been offered as proof of the secretory mechanism of formation of the cerebrospinal fluid can be traced to alterations in these circulatory factors. If this is true, then the proof that the fluid is undoubtedly formed by secretion must be abandoned until more cogent evidence is produced for the participation of active cellular processes. While admitting that the choroid plexuses may represent one source of the cerebrospinal fluid, Dercum² ventures to believe that it has a further source in the general serous surfaces of its containing cavities.

Another upset of current traditions concerns the possibility of absorption from the subarachnoid spaces. If substances can be rapidly transferred to the nervous system by absorption from the cerebrospinal fluid, the possible importance of intradural injections in medication of the brain and cord is at once suggested. Meltzer³ has come to the conclusion that such injections do not produce the typical effects of an intravenous injection; and Becht has been unable to demonstrate the absorption of potent drugs from the dural canal when they have been introduced with suitable care to avoid undue pressure or direct traumatic entrance into blood vessels. Coincidentally, Dercum has asserted that "attempts at medication of the brain and cord through the subarachnoid space, as in the Swift-Ellis method, are unscientific, as substances introduced into the cerebrospinal fluid rapidly disappear by passing out through the arachnoidal villi and the lymph spaces without in the slightest degree penetrating the nervous parenchyma; the beneficial effects hitherto ascribed to the Swift-Ellis and kindred methods are due entirely

to the incidental spinal drainage." He adds that medication of the nervous parenchyma must be attempted through the alimentary tract, through the skin, through the areolar tissue, or directly through the blood.

If we are to abandon some of the current belief regarding the production and escape of the cerebrospinal fluid, what shall be said about its rôle? Dercum regards it as "preeminently a fluid for the hydraulic suspension of the brain and cord; its function is essentially hydrostatic." Having a chemical composition essentially like that of an isotonic saline solution, it has no action on the tissues with which it comes into contact, and, if we may follow Dercum, it has no special function in the nutrition of the brain and cord which takes place as does that of other tissues.

Current Comment

PHYSICAL AGENTS AS PROVOCATIVES OF IMMUNITY REACTIONS

The well marked resistance of certain species to infection with germs usually harmful or fatal to others is commonly designated as natural immunity, because it seems to be "a natural biologic attribute of the species, as much a characteristic property as are its anatomic or physiologic properties." Immunity can also be acquired, notably after an attack of certain diseases. This "acquired immunity" is assumed to be a manifestation of some biologic stimulus or factor which at once differentiates it in some unexplained way from the usual responses of the organism to chemical and physical agencies. The hope of successfully inducing those reactions which are the basis of immunity of any type whatever rests on the possibility of analyzing the factors concerned and of imitating their function. Several years ago, Murphy showed that there is likely to be an actual increase in the circulating lymphocytes, accompanied by hyperplasia of the lymphoid elements following cancer inoculation into immune animals. If this crisis was prevented by the destruction of the lymphocytes, the immunity of the animal was destroyed. By repeated small doses of roentgen rays an animal could be practically depleted of lymphoid tissue without apparent injury to other important structures, and without detectable influence on the animal's general health. In such an individual, immunity was replaced by susceptibility to cancer inoculation. The beneficial response of the lymphoid tissue can be induced in animals by means of injection of living tissue. Murphy¹ has lately ascertained, however, that purely physical methods of heightening the activity of the lymphoid centers in the spleen and lymph nodes also are available. If single small exposures to roentgen rays of suitable quality are employed, a good response is secured. Furthermore, dry heat ranging from 55 to 65 C. applied to the whole animal for five minutes was found to produce a stimulation of the lymphocytes and of lymphoid tissue.

2. Dercum, F. X.: The Functions of the Cerebrospinal Fluid, *Arch. Neurol. & Psychiat.* **3**: 230 (March) 1920.
3. Meltzer, S. J.: *Am. J. Physiol.* **47**: 286 (Dec.) 1918.

1. Murphy J. B.: The Effect of Physical Agents on the Resistance of Mice to Cancer, *Proc. Nat. Acad. Sc.* **6**: 35 (Jan.) 1920.

marked intensity, the increase in the number of lymphocytes persisting for a number of days. Murphy states, as the results of recent experiments at the Rockefeller Institute for Medical Research, that the lymphocytosis and lymphoid hyperplasia induced by these two physical agents are associated with an immunity to transplanted cancer equally as great as that arising from tissue injections. There is something more readily measurable and better definable in that or in roentgen rays than in such vague somethings as are tissue extracts at present. To secure a wholesome reaction of possible far reaching importance in the body by means of such physical agents is a step in the direction of progress, however far it may still be from even speculation as to any application to human conditions. Murphy cannot state at present whether the tissue injection, the small dose of roentgen rays, or the dry heat induce changes in the organism other than those associated with increase of the lymphoid tissue which would account for the immunity; but the evidence now at hand points at least to the lymphoid tissue as an important agent in the immunity reaction to transplanted cancer of mice.

BONDS NOT NECESSARY FOR PHYSICIANS

Apparently some of the by-products of prohibition are going to be as interesting as the main issue. Without intending to cast any slurs on our great and noble medical profession, it is indeed an ill wind that some lawyer cannot manipulate to his advantage. Judging from the letters received, physicians are being circumscribed by a member of the legal fraternity who has devised a method of helping them to comply with the prohibition law with the greatest amount of ease and convenience to themselves and with profit to him. The circulars have this interesting legend printed in large type on the face of the envelop: "What the U. S. Government Allows You to Do. I Know the Law. I Will Do Everything but Sign Your Name." The circular offers to assist physicians in securing government permits to purchase or prescribe liquor. While it does not expressly say so, the impression conveyed to the uninformed physician is that every practicing physician must file a bond in order to purchase or prescribe any amount of liquor. This is not the case. As stated in the abstract¹ of Internal Revenue Regulation No. 60, physicians desiring to purchase and prescribe liquors in their practice are required to procure a permit to prescribe. This may be obtained by filling out an application on Form 104 in triplicate and filing it with the federal prohibition director of the state in which the physician is licensed to practice. This permit, when issued, allows him to prescribe liquor for medicinal purposes only, and when such liquor is necessary to afford relief from a known ailment. It also allows him to purchase more than six quarts of liquor during any calendar year for professional use only. Bonds need not be filed by physicians, dentists or veterinarians, or by hospitals or sanatoriums unless required by the com-

missioner. It is not necessary for physicians to pay five dollars or any other amount to any lawyer or bonding company. No fee is required for registering and securing a permit under the prohibition law, and the government officers can and will do all that is necessary to assist a physician to procure a permit without any cost to him. THE JOURNAL has endeavored to keep its readers informed regarding the provisions of the prohibition law. It will continue to do so in the future. The requirements for registration under the law are not difficult; however, if any of our readers are in doubt as to what to do in order to comply with the law, we shall be glad to advise them.

AN ADVANCE IN ROENTGENOGRAPHIC TECHNIC

Even in this day of receptive minds eager for new truths, it may be years before discoveries of great importance to science are brought into general use. In 1912, Lorey¹ happened to roentgenograph the abdomen of a patient who several days before had had air injected into his peritoneal cavity to replace ascitic fluid removed. It was discovered that some of the nitrogen was still present, and this had allowed the intestine to drop out of the way, so that beautiful pictures were secured showing the outlines of the liver, spleen, kidneys and other organs. During the next year, Weber² did considerable work to show the possibilities of this method. It was not until 1918, however, that much interest was taken in the subject. Since then a number of papers have appeared in the German, French and Italian journals. Probably the first plates of this type to be shown in America were presented last year at the annual session of the American Medical Association, by Stein and Stewart of New York. Many who saw these roentgenograms felt that they were looking on a great advance in roentgenologic technic, perhaps the most important as regards intra-abdominal diagnosis since Cannon introduced the bismuth meal. It is remarkable that injection of gas into the peritoneal cavity through a needle reveals so clearly the liver, the kidneys, the spleen, the walls of the stomach and intestine, the uterus and its adnexa, the diaphragm and the lower ribs. Undoubtedly the method may be used to show also the point of origin of obscure abdominal tumors. Most of the work has been done with oxygen, but this takes a day or more to be absorbed, during which time the patient is often compelled to remain in bed. It has now been shown that carbon dioxide can be used instead.³ As this is absorbed in half an hour, the procedure may be carried out in the office, and the patient can return to his home or to his work. So far no accidents have been reported, and there seems to be little reason for fearing any so long as the cases are properly chosen. Naturally, it would be unwise to inject a liter or two of gas into the abdomen of a man with a subphrenic abscess or with adhesions around an area of localized peritonitis. As the distention of the

1. Lorey: *Verhandl. d. deutsch. Roentgen Gesellsch.* 8: 52, 1912.

2. Weber: *Fortschr. a. d. Geb. d. Röntgenstrahlen* 20: 453, 1913.

3. Alvarez, W. C.: *California State J. M.* 18: 42 (Feb.) 1920; abstr. *J. A. M. A.* 74: 699 (March 6) 1920.

abdomen always causes considerable discomfort and sometimes acute pain, particularly in the shoulders, the procedure will probably always be limited to the study of special cases. In this issue of *THE JOURNAL*, Whitman⁴ describes from a personal experience the point of view of the patient submitted to this method.

Association News

THE NEW ORLEANS SESSION

Special Social Events for Women Physicians

A luncheon for visiting women physicians will be tendered by the women physicians of the Southern Medical Association on Tuesday, April 27, at the St. Charles Hotel, and the annual banquet for women physicians will take place at the Louisiana, Wednesday, April 28, at 6 p. m. Reservations should be made through Dr. Margaret Bowden, 1217 Calhoun Street, New Orleans. The cost per cover is \$4.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Urologic Section Formed.—A urologic section of the Los Angeles County Medical Society has recently been organized with sixteen charter members and the following officers: president, Dr. Granville MacGowan; president-elect, Dr. Ralph R. Campbell; vice president, Dr. Robert V. Day, and secretary, Dr. Herbert A. Rosenkranz.

Personal.—Dr. Irving R. Bancroft, Los Angeles, has been appointed secretary and executive officer of the state board of health succeeding Dr. Wilfred H. Kellogg, Sacramento. —Dr. Daniel Crosby has resigned as city health officer of Oakland. —Dr. Walter Lindley, Los Angeles, has been appointed a member of the state board of health succeeding Dr. Lemoyne Mills, term expired. —Dr. William B. Kern, superintendent of the Norwalk State Hospital, has resigned to resume private practice after sixteen years of institutional work.

COLORADO

New Officers.—Lake County Medical Society at Leadville, January 15: president, Dr. Franklin J. McDonald; vice president, Dr. Allan J. McDonald, and secretary-treasurer, Dr. Elwood B. Lynch, all of Leadville.

CONNECTICUT

Resigns After Long Service.—Dr. Max Mailhouse, professor of neurology in Yale University, has resigned after twenty years' service with the institution.

Health Center Organized in New Haven.—A health center has been organized in New Haven under the combined leadership and financial support of the municipal department of health, visiting nurse association, the New Haven chapter of the American Red Cross, and the New Haven Medical Society. The health center will aim to build up the health as well as to detect the physical defects of the 20,000 inhabitants in the selected district, which is largely of Italian stock, and it is expected that the center will be in full operation by July 1. Its temporary quarters are 184 York Street.

ILLINOIS

Dr. Bartlett Speaks Before County Society.—Dr. Willard Bartlett, St. Louis, gave an address on "Goiter Surgery," before the Madison County Medical Society at its meeting in Edwardsville, April 2.

Free Exercise of Healing Art Asked.—A petition from the "central health committee" asking that the new constitution of the state permit the free exercise of the healing art was presented at the constitutional convention by Delegate Cruden, and referred to the bill of rights committee.

Personal.—The offices of Drs. A. B. Scott, Paul B. Kionka and L. A. Lighthart, Melrose Park, were destroyed in the tornado which struck that village, March 28. —Dr. Elmer S. Allen, Arcola, who was operated on several weeks ago at the Union Hospital, Terre Haute, for the removal of gallstones, has recovered and returned home.

Addition to State Hospital.—The state of Illinois has begun work on the addition to the Alton State Hospital, to cost \$500,000. The plans call for six cottages capable of housing 100 patients, in addition to a dining room and kitchen, and construction of two buildings to house tuberculosis patients, and the erection of a hospital building.

Plead Guilty to Failure to Report.—Drs. Henry S. Bennett, Joseph D. McKelvey, Chester C. Sloan and Prudens R. Sterck, Moline, and Arthur E. Williams, Rock Island, are said to have pleaded guilty, March 25, to charges of violating the city health law by failing to report births within the required five day limit, and to have been fined \$10 and costs in the Moline police court. The fines were suspended, but the physicians were held for the costs in the case.

Chicago

Institute to Hear Address on the Atom.—There will be a meeting of the Institute of Medicine of Chicago, April 16, at 8 p. m., in the City Club, at which Prof. R. A. Milliken, University of Chicago, will speak on "The Twentieth Century Contributions to Our Knowledge of the Atom." All interested are invited.

Karalius Declared Insane.—Dr. Anthony J. Karalius, who charged that a federal prohibition agent obtained a prescription for liquor by giving a Masonic distress signal and later said he had paid agents \$1,000 not to prosecute him, was found of unsound mind, March 31, and will be committed to an institution. Dr. Karalius was released on bond of \$2,000 April 2, but has been forbidden to practice medicine or issue prescriptions for narcotics or liquors, pending trial.

INDIANA

Tuberculosis Exhibit Tour.—The state board of health tuberculosis exhibit automobile has started on a tour of the rural districts of the state.

University Centennial.—Indiana University will hold its centennial celebration May 5, 6 and 7. May 5 will be given over to the exercises of the medical department at Indianapolis, and all physicians are invited to be present at the meetings on that day.

University to Operate Dispensary.—The board of health of Indianapolis, at the meeting, March 15, approved a contract with the Indiana University School of Medicine for the operation of a city dispensary for 1920. The university agreed to operate the dispensary and provide supplies for \$825 a month.

Personal.—Dr. Frank C. Wade, Howe, sustained a fracture of the arm when his sleigh overturned recently. —Dr. J. Fulton, Bluffton, rounded out a half century of practice Wells County, March 11. —Dr. Frederick J. Schulz, Fort Wayne, for thirteen years physician to the General Electric Company, Fort Wayne, has resigned. —Dr. Harry M. Pe Brazil, has been appointed local physician for the Pennsylvania system, succeeding Dr. Lewis L. Williams, deceased. —Dr. Aldine E. Morgan, Lafayette, has returned to the Indiana State Soldiers' Home as chief surgeon.

IOWA

Venereal Disease Clinic.—It is announced that a clinic for the free treatment of venereal diseases will be established at Cedar Rapids, as the result of a survey made by Dr. Oliver C. Wenger, U. S. Public Health Service.

Personal.—Dr. Charles Magoun, Sioux City, has been appointed physician of Woodbury County, succeeding Dr. Guy E. Barr, Sioux City. —Dr. M. Charles Mackin, Knoxville, superintendent of the Iowa State Inebriate Hospital, has been appointed assistant alienist to the State Hospital for the Insane, Skillman, N. J. —Dr. Leon Havens, acting head of the department of epidemiology in the State University of Iowa, Iowa City, has been called to chair in Johns Hopkins University, Baltimore.

4. Whitman, Armitage: Oxygen Inflation of the Peritoneal Cavity: A Personal Experience, *THE JOURNAL*, this issue, p. 1021.

MARYLAND

Emerson in Baltimore.—Dr. Charles P. Emerson, professor of medicine and dean of the University of Indiana School of Medicine, Indianapolis, delivered an address on "Environmental Medicine," at the Johns Hopkins School of Hygiene and Public Health, March 29.

Workrooms for Wounded.—Two portable buildings will be erected this week on the grounds of the United States Marine Hospital to give the patients a place in which to do oddwork. Four members of the reconstruction division of the U. S. Public Health Service, under the direction of Miss Elizabeth Winn, chief reconstruction aide, are in charge of the division of occupational therapy, to which one of the buildings will be devoted. The other will be given over to physiotherapy department.

Personal.—Dr. William S. Halsted has received a diploma of honorary foreign membership in the Royal College of Medicine of Belgium. Dr. John M. T. Finney has been awarded honorary fellowship in the Royal College of Surgeons of England.—Dr. Warren H. Lewis of Johns Hopkins Medical School has been elected an honorary member of the Society of Medicine of Ghent, Belgium.—Dr. Ross C. Chapman, the new superintendent of the Sheppard and Doch Pratt Hospital, Towson, assumed his duties, April 1.

MASSACHUSETTS

Personal.—Dr. George R. Fessenden, Ashfield, has been appointed associate medical examiner (coroner), for Frank County.—Dr. Richard J. R. Caines, Boston, has returned after eighteen months overseas.

Dean Lewis in Boston.—Dr. Dean D. Lewis, professor of surgery (elect) in Chicago University, has been acting for two weeks as surgeon-in-chief pro tempore, in charge of Dr. Harvey Cushing's service at the Peter Bent Brigham Hospital, Boston.

Staff Meeting.—A clinical meeting of the outpatient department medical staff of the Massachusetts General Hospital was held, April 7. Dr. Lloyd T. Brown, Boston, presented a paper on "Bodily Mechanics in Relation to Medicine," and Francis M. Rackemann, Boston, one on "Bronchial Asthma."

Resigned, Not Deceased.—The report that recently appeared in a Boston paper announcing the nomination of Dr. G. Ernest Martin as a trustee of the state infirmary in place of Dr. Leonard Huntress, deceased, should have read "in place of Dr. Leonard Huntress, resigned." Dr. Huntress is alive and well.

Complimentary Luncheon to General Wood.—The Class of 1903 of Harvard Medical School, of which Major-General Leonard Wood is a member, will give a complimentary luncheon to him at Symphony Hall, Boston, April 13, from 2 to 3:30. The speakers will be Dr. Henry Jackson, Boston, president of the class, Dr. Alfred Worcester, Waltham, president of the Massachusetts Medical Society, and General Wood.

MICHIGAN

Influenza Deaths.—During the seven weeks of the influenza epidemic in Detroit, during January and February, the mortality rate was 2 per thousand. During a similar period at the beginning of the epidemic in 1918, the mortality was slightly less, but resulted finally in the deaths of 0.28 per cent. of the population.

Personal.—Dr. Theodore S. Crosby has been appointed health officer of Wakefield.—Dr. Bruno L. Schuster, Jackson, health officer of Jackson County, has resigned.—Dr. Abel E. Elliott, Benton Harbor, who was captured with a party of Armenian relief workers during a recent raid of the Turks, is reported to have escaped.

MISSISSIPPI

Smallpox.—Smallpox of virulent type is said to be prevalent in half of the counties of the state. The state sanitary inspector, Dr. Cyrus M. Shipp, Water Valley, announced, March 27, that twenty deaths had occurred from this cause in Jones County. During the last fourteen days of March, 15 cases were reported from forty-one counties.

Six-County Medical Society Installation.—At the meeting of the North Mississippi Six-County Medical Society, composed of Tiptah, Benton, Union, Marshall, Yalobusha and Lafayette counties, March 17, Dr. Ira B. Seale, Holly Springs, was installed president; Dr. George W. Sisler, Waltham, vice president, and Dr. Billy S. Guyton, Oxford, secretary.

Health Campaign Planned.—To carry out the cooperative idea between the work of the state board of health and the American Red Cross, plans are being made for the initiation of a health campaign in Lafayette County. The state board of health will appropriate \$5,000 toward this cause, and the secretary of the Lafayette County chapter of the American Red Cross \$2,500, provided the citizens of the county, through its board of supervisors, will provide the \$2,500 needed.—At a meeting held in McComb, March 22, plans for the special health campaign to begin in McComb were outlined. Dr. W. D. Beachman, Summit, health officer of Pike County, has moved his office to McComb and has associated with him in the work Red Cross nurses and assistants. McComb has added \$1,000 to the Rockefeller fund in order that special work may be done.

MISSOURI

Mayoral Candidates Outline Policies.—March 20, at Mercy Hospital, Mayor Cowgill and Walter H. Foster, candidates for mayor of Kansas City, outlined their proposed policies with regard to hospital and health boards to the members of Jackson County Medical Society.

Personal.—Dr. Robert Vinyard, St. Louis, has been appointed assistant physician to the Frisco Hospital, Springfield.—Dr. George W. Cale, Jr., after twenty-two years' service as chief surgeon of the St. Louis and San Francisco system, announces his retirement, April 1, to resume private practice.—Dr. Wenzel C. Gayler has resigned as second vice president of the St. Louis Medical Society.—Dr. Harold B. Scovern, Carrollton, has been appointed deputy state health commissioner.

NEBRASKA

Personal.—Dr. Hiram W. Orr, Lincoln, has been made editor of the *Journal of Orthopedics*.—Dr. Earl W. Fetter, North Platte, has been made physician of North Platte, succeeding Dr. John S. Simms, North Platte, resigned.—Dr. and Mrs. Charles R. Gannaway, Stuart, have disposed of their hospital to engage in the Near East relief work.

Hospital Items.—The campaign put on by the Lincoln Commercial Club, early in March, to secure \$100,000, which, added to a similar amount voted by Lincoln last spring for a city hospital, will make up the amount necessary to build a hospital, has been successful and the hospital will be built this summer.—Long Pine Community Hospital was formally opened, February 17, and is in charge of Dr. Albert G. Rasck, Long Pine, formerly of Chicago.—The citizens of Sydney and tributary territory have organized a hospital association which will build a hospital this summer.

NEW YORK

Cash Prize Awarded.—The Merritt H. Cash Prize of the New York State Medical Society has been awarded to Dr. Herman B. Sheffield for his essay on infantile paralysis.

Society Condemns City Laboratory Plan.—The Albany County Medical Society, at its meeting, March 10, condemned the plan of expending \$20,000 for alterations of the old pumping station on Manning Boulevard for the purpose of establishing a municipal bacteriologic laboratory, and adopted a resolution urging the mayor to register the opposition of the medical fraternity to the scheme.

New Officers for Women's Society.—The forty-sixth annual meeting of the Women's Medical Society of New York State was held March 22, in New York City, under the presidency of Dr. Elizabeth B. Thelberg, Poughkeepsie, and the following officers were elected: president, Dr. Lois L. E. Gannett, Adams; vice presidents, Dr. Florence I. Staunton, Utica, Mathilda K. Wallin, New York City, and M. Louis Hurrell, Rochester; secretary, Dr. Harriet M. Doane, Fulton, and treasurer, Dr. Elizabeth L. Shrimpton, Syracuse.

State Aid in Local Health Work.—A bill introduced in both houses of the state legislature proposes the establishment of health centers, to be supported by the state funds in addition to local appropriations. Grants are to be made for the construction and operation of hospitals, dispensaries and clinics in rural and urban communities. Facilities for bacteriologic and pathologic diagnosis and for consultation are to be provided. The health centers also will serve as headquarters for the district health service, for public health nursing, medical school inspection and public health education. The board of managers of the state charities aid association has adopted resolutions favoring passage of the measure.

New York City

Hospital for Incurables Opened.—The Beth Abraham Hospital for Incurables, with accommodation for seventy-five patients, was opened March 22. A campaign for \$200,000 has been launched for the erection of new buildings.

Course in Fractures.—A course in fractures was begun at the Cornell Medical College, April 5, and will continue until April 30, on Mondays, Wednesdays and Fridays. The course consists of two consecutive hours of lectures and demonstrations, beginning at 2 o'clock. Dr. Joseph A. Blake will give seven exercises; Dr. George W. Hawley, six, and Dr. James M. Hitzrot, five. In addition to the first three, Dr. Alexis Carrel will also give one lecture. Other exercises will be held by Dr. Henry H. M. Lyle, Dr. Burton J. Lee and Dr. John C. A. Gerster. The profession is cordially invited.

Distribution of United Hospital Fund.—Officials of the United Hospital Fund announced that they have distributed \$400,000 among the forty-six member institutions. This represents double the amount each hospital received last year from the organization. Among the larger amounts distributed were: St. Luke's Hospital, \$27,850.90; Mount Sinai Hospital, \$27,752.32; New York Hospital, \$43,118.26; Presbyterian Hospital, \$18,472.12; Lincoln Hospital, \$16,567.90; Lenox Hill Hospital, \$14,409.42; Roosevelt Hospital, \$13,318.92; Post-Graduate Hospital, \$11,868.72; Orthopedic Hospital, \$21,518.42; Hospital for Ruptured and Crippled, \$15,307.34, and Montefiore Home, \$35,271.28.

OHIO

Resignations.—Dr. William Wylie Scott, city physician of Canton for three years, has resigned.—Dr. Charles G. Augustus, health director of Springfield for three years, has resigned.—Dr. Ernest Zueblin has resigned from the staff of the Cincinnati Tuberculosis Sanatorium and has been succeeded by Dr. Reuben Erickson.

Illegal Practitioners Prosecuted.—A report states that Dr. E. C. Branch was fined \$50 and costs, March 24, for advertising himself in Ohio as a practitioner of medicine without having first obtained a license. Charges also were filed against D. A. Donovan, an optometrist, for advertising himself as a practitioner of medicine and surgery in Wooster, without having first secured a license. Although an optometrist, Donovan is said to have used the unqualified title of "Dr." in his advertisements. Charges have been filed, also, against a woman named Mary Lottig in Cleveland for illegal practice of medicine.

PENNSYLVANIA

Weir Mitchell Entertainment Fund.—The Weir Mitchell Entertainment Fund will give a dinner to the Fellows of the College of Physicians of Philadelphia, at the College, April 15, at 7 o'clock.

Personal.—Dr. Patrick H. Weeks, Warren, has been appointed physician to the Northern Indiana Penitentiary, Michigan City.—Dr. Karl Schaffle, Philadelphia, for eight years head of the tuberculosis dispensary work in the state department of health, and Dr. Dorothy Child, Philadelphia, director of the child health bureau of the department, have resigned.

Health Insurance Commission.—The governor has appointed a commission to investigate accidents and sickness not compensated under the workmen's compensation act of Pennsylvania. The members named by the governor are: William Flinn, Pittsburgh; William Draper Lewis, Dr. Francis D. Patterson, secretary, Dr. Gassaway Oram Ring and William H. Kingsley, Philadelphia; members named by the president pro tem of the senate: Senators S. J. Miller, Clearfield County; Morris Einstein, Allegheny County, and Charles W. Sones, Lycoming County, and members named by the speaker of the house, William T. Ramsey, Delaware County, chairman; John M. Flynn, Elk County, and Theodore Campbell, Philadelphia.

RHODE ISLAND

Associate Editors Appointed.—Drs. William F. Barry, Woonsocket; Charles S. Christie, River Point; Asa S. Briggs, Ashaway, and Norman M. Macleod, Newport, have been appointed associate editors of the *Rhode Island Medical Journal*.

Passes Ninetieth Birthday.—Dr. Horatio R. Storer, Newport, celebrated his ninetieth birthday anniversary, February 27. Dr. Storer was recently given the degree of LL.D. by

Fordham University, New York City, in recognition of his activities in matters of disease prevention.

Tuberculosis Survey.—The state association for the prevention of tuberculosis has engaged Prof. C.-E. A. Winslow of the Yale School of Medicine to make a survey of tuberculosis conditions in the state and of the work which is being done by different organizations for its control.

Fight Against Mosquitoes.—The bill appropriating \$20,000 to assist cities and towns in the extermination of mosquitoes has been passed. Under the provisions of this act, communities making appropriation for the mosquito extermination will receive from the state an amount equal to the sum, which they may expend in actual work, not to exceed \$3,000.

League for the Suppression of Tuberculosis.—The Providence League for the Suppression of Tuberculosis was organized in 1906 as a committee of the society for organizing charities. A charter has recently been obtained and the league has been formed into an entirely new and separate organization with the above name. Dr. Jay Perkins is president and Dr. Jeannie O. Arnold, secretary. The league has been chiefly occupied with relief and educational work, and with maintaining a preventorium. It hopes to expand greatly its field of operation, and Dr. Elliott Washburn, Providence, has been selected as its general agent.

New Officers.—Newport County Medical Society at Newport, January 22, elected these officers: president, Dr. Abiram F. Squire; vice presidents, Drs. Charles W. Stewart and Norman M. Macleod; secretary, Dr. Alexander C. Sanford, and treasurer, Dr. Douglas Jacoby, all of Newport.—Providence Medical Association, January 5, elected: president, Dr. Dennett L. Richardson; vice president, Dr. Frank T. Fulton; secretary, Dr. Raymond G. Bugbee, and treasurer, Dr. Charles F. Deacon.—Washington County Medical Society at Westerly, January 8, elected: president, Dr. Patrick J. Manning, Wickford; vice presidents, Drs. Henry L. Johnson, Westerly, and William T. Veal, Stonington, and secretary-treasurer, Dr. William A. Hillard, Westerly.

TENNESSEE

Personal.—Dr. Sydney Thompson, Nashville, has so far recovered in health that he has returned to his work as assistant superintendent at the Central Hospital.

New Officers.—Jackson County Medical Society, at Kingsboro, March 1: president, Dr. John D. Quarles, Whitlyville and secretary, Dr. Roscoe C. Gaw, Gainesboro.—Gile County Medical Society: president, Dr. George D. Butler, Pulaski; vice president, Dr. William H. Cole, Minor Hill; secretary, Dr. Charles A. Abernathy, Pulaski, and treasurer, Dr. George C. Grimes, Pulaski.—Lincoln County Medical Society: president, Dr. James M. Shelton, Kelso, and secretary, Dr. Jacob M. McWilliams, Fayetteville.—Washington County Medical Society: president, Dr. James G. Moss, and vice president, Dr. Lee K. Gibson, both of Johnson City.—Rutherford County Medical Society: president, Dr. Matthias B. Murfree, Murfreesboro; vice president, Dr. John M. Shipp, Readyville, and secretary-treasurer, Dr. James A. Scott, Murfreesboro.

TEXAS

Personal.—Dr. W. H. Minton, Houston, has been appointed assistant state health officer, succeeding Dr. Douglas Largen, resigned.

Physicians Want Quiet Zones.—The physicians of San Antonio have requested the city council to establish zones of quiet around the hospitals in that city.

Malaria Fight.—The department of public health of Dallas has spent about \$6,000 in malarial control work, including cleansing of streams, confining them to narrow channels, and the stocking of streams with minnows to feed on the malarial bearing larvae.

WEST VIRGINIA

New Officers.—Mercer County Medical Society at Bluefield, January 22: president, Dr. Charles T. St. Clair, Bluefield; vice presidents, Drs. Bernard S. Clements, Matoaka, Francis T. Ridley, Bluefield, and Walter W. Hark, Matoaka; secretary, Dr. Edward H. Thompson, Bluefield, and treasurer, Dr. Thomas E. Peery, Bluefield.—Raleigh County Medical Society at Beckley, January 9: president, Dr. Kyle M. Jarrell, Beckley; vice presidents, Drs. Ira Fisher, Stotesbury, McRae C. Banks, Raleigh, and William C. Mays, Beckley; secretary-treasurer, Dr. Fred Stansbury, Beckley.

CANADA

Personal.—Dr. Frederick Montizambert, Ottawa, director-general of public health for Canada, was knocked down by a street car in Ottawa, January 19, and his clavicle was fractured.

Dental Faculty Created.—The faculty of dentistry has been created in McGill University, Montreal. Heretofore dentistry was administered under the medical faculty. There are 400 students in attendance in this department.

Licensure in Charge of University.—A bill has been introduced into the parliament of Alberta placing under control of the University of Alberta the examination and registration of applicants who desire to practice the various branches of medicine in that province. The university already has in charge the registration and examination of nurses and it is expected that registration of those practicing law, pharmacy and dentistry will be similarly provided for. This appears to be a move in the right direction. If the university is given free hand in the educational qualifications necessary, it will be the safest body to have these matters in charge. The entire problem of medical cults rests on educational qualifications. It is hardly probable that the university will establish more than one standard of qualifications for those who are to treat the sick.

Hospital News.—Dr. Clarence M. Hincks, Toronto, secretary of the Canadian Mental Hygiene Commission, was recently in Halifax, N. S., in connection with the establishment of a psychiatric clinic in that city. It is probable that the commission will shortly take a survey of the mentally afflicted in Nova Scotia.—Brandon, Man., is to have a new hospital at a cost of \$300,000.—The hospitals now receiving governmental aid in Alberta number forty-nine. It is expected that during the present year municipal hospitals will be established in ten new localities in Alberta.—At Keith, Alberta, a sanitarium is to be established for cases of tuberculosis. At first there will be 150 beds, but when the institution is finally completed its capacity will be for 300.—Saskatchewan four union hospital districts have been established under the union hospital act. The areas selected are Battleford, Unity, Strasbourg, and Wynyard. Voting takes place on the scheme in March or April.—British Columbia will spend \$150,000 on hospitals and public institutions. Of this amount, \$85,000 will be for the feeble-minded, for whom a farm of 300 acres has been purchased on which cottages are being erected.—A new annex is to be added to the Provincial Royal Jubilee Hospital at Victoria, B. C. This is for the accommodation of venereal disease cases.

GENERAL

Conference of Social Work.—The National Conference of Social Work will open its forty-seventh annual session by a joint meeting with the National Child Labor Committee at New Orleans, April 14.

New Officers for Posture League.—At the annual business meeting of the American Posture League, March 13, the following officers were elected: president, Jessie H. Bancroft; vice president, Dr. Frederick R. Green, Chicago; secretary, Dr. Henry Ling Taylor, New York City, and treasurer, Dr. George J. Fisher, New York City. The annual public meeting of the league was held this week concurrently with that of the American Physical Education Association in New York City.

Bequests and Donations.—The following bequests and donations have recently been announced:

St. Peter's Hospital, Charlotte, N. C., a donation of \$20,000 from Mr. and Mrs. W. A. Irwine, Durham, N. C., as a memorial to their son, Hamilton C. Jones.

Polyclinic Hospital, Harrisburg, \$150,000, the result of a drive which closed, January 27.

Lewistown, Pa., Hospital, \$1,500 by the will of Harriet Thomas Kurtz. Blackford County, Ind., Hospital, a donation of three city blocks of land and \$5,000 for improvements, by Mrs. H. B. Smith, Hartford City.

Meeting of Industrial Physicians.—The American Association of Industrial Physicians and Surgeons will hold its fifth annual meeting at the Hotel Grunewald, New Orleans, April 24 and 27. Sessions will be held at 9 a. m. and 2 p. m. on each day, at which will be discussed the problem of the mentally and physically subnormal wage earner, the training of industrial physicians, the relationship of the industrial physician to the venereal disease problem, first aid and standardized surgical methods in industry, and the problem of compensation for sickness.

Carbon Monoxid in Vehicular Tunnels.—At its Pittsburgh session, the United States Bureau of Mines is making tests

to determine the amount and percentage of carbon monoxid in the exhaust gases of automobiles. The problem is assuming increasing importance in connection with plans for ventilating the long tunnels designed for vehicular traffic—a tunnel 5,700 feet long is under construction through the South Hills at Pittsburgh, one of 6,000 feet is proposed for Boston, and designs are being prepared for a tunnel 8,000 feet long to pass under the Hudson River between New York City and New Jersey. Coincidentally, experiments are being carried on by Dr. Yandell Henderson at the physiologic laboratory of Yale Medical School, to determine what percentage of carbon monoxid in the air may be safely tolerated for several hours.

FOREIGN

Oliver-Sharpey Prize.—Dr. Emile Roux of the Pasteur Institute, Paris, has been awarded the Oliver-Sharpey Prize for 1920 by the Royal College of Physicians of London.

Surgeon in Danish Cabinet.—Prof. Thorkild Røvsing, prominent Danish surgeon, chief of the surgical section of the Rigshospital, Copenhagen, and editor of *Hospitalstidende*, was minister of education in the cabinet of Denmark, formed March 30, and since reported dissolved.

Australian Commonwealth Public Health Service.—The government intends to proceed with the establishment of a federal health department. It is not likely that more will be attempted than the encouragement of research and the perfecting of statistical and other information between the existing state departments.

Scarcity of Ergot and Santonin in the Netherlands.—The *Nederlandsch Tijdschrift voor Geneeskunde* publishes a communication from two experts consulted dealing with the conditions in which ergot and santonin are indispensable and those in which they can be substituted by other drugs. The scarcity of these two drugs has impelled the authorities to urge physicians to be as saving in their use as possible.

King Umberto Prize.—The Rizzoli Orthopedic Institute, Bologna, Italy, announces that competition for the prize Umberto I has been opened. The prize of 3,500 lire (normally \$700) will be assigned by the provincial council of Bologna for "the best orthopedic work or invention." Both Italian and foreign physicians may take part in this competition. The regulations of the competition will be sent to any one who applies to Dr. G. Zanardi, president of the Rizzoli Institute, Bologna. The competition will close December 31.

The Boas Prize.—The second conference on diseases of the digestive glands and deranged metabolism is to be held at Hamburg in May with Prof. I. Boas presiding. The subjects appointed for discussion are duodenal ulcer; the consequences of dysentery from the standpoint of diagnosis and treatment; war experiences with diabetes; and the diagnostic importance of what we know in regard to the internal secretions as applied to diseases of digestive organs and metabolism. The Boas prize of 1,000 marks is to be awarded this year for the best article received in competition dealing with the influence of mastication on the secretion of gastric juice in health and in disease.

Red Cross League Items.—Senator Curaolo, president of the Italian Red Cross, has replaced Senator Frascara as a member of the board of governors of the league.—George C. Whipple, professor of sanitary engineering in the Medical School of Harvard University, has arrived in Geneva and taken up his duties as chief of the department of sanitation.—Dr. Octave Monod has entered on his duties as assistant chief of the department of tuberculosis.—The league has undertaken, on behalf of the British Red Cross, to care for certain British patients in tuberculosis sanatoriums in Switzerland.—The League of Red Cross Societies has been elected an honorary member of the Statistical Society of Paris, and Mr. Knud Stouman, chief of the department of vital statistics, has been chosen representative of the general medical department of the league.—Dr. S. Burt Wolbach, Boston, of Harvard University Medical School and Dr. John L. Todd of McGill University visited Geneva on their way to Poland to discuss with Dr. Richard P. Strong, the chief medical director, the program which the league is to carry out in Poland in connection with the study of the etiology of typhus fever. Dr. Wolbach is chairman of the commission of the league; Dr. Todd, assistant chief, and other members of the commission are Drs. A. Bacot of the Lister Institute, London; Francis W. Palfrey, Boston; Monroe A. McIver, New York City; James W. Denton, Rhode Island, pathologist; Mr. Henry Pinkerton of the Massachusetts Institute of Technology, and Mr. Forrest A. Hardy, medical secretary.

Government Services

Health Conditions of the Army

For the week ending March 26 there is reported a slight increase in the number of new cases of measles, but the disease is not epidemic at any station. The increase was expected in connection with the arrival of new recruits as a result of a recruit drive, now nearing completion. The admission and noneffective rates are considerably lower than for the previous week, and are believed to be as low as can reasonably be expected for this season of the year. There were twenty-one deaths from disease reported during the week: eight were caused by tuberculosis and seven by pneumonia.

Public Health Service Acquires New Hospital

The House Committee on Public Buildings and Grounds has approved the purchase by the Public Health Service of the Mount Alto property situated in the suburbs of Washington, D. C. This property will be used for the care and treatment of tuberculous patients. It now has a capacity for 125 beds but it is planned to increase its facilities immediately to 300 beds and later it can be expanded to 2,000 beds. The price fixed by the committee is \$460,000. The property covers 11½ acres and includes nine modern stone buildings. It is considered an excellent unit for hospital purposes. Congressman Tague urged that provision should be made for ample expansion of this property. He said there are 50,000 service men, sufferers from tuberculosis who need immediate attention and that the Public Health Service does not have facilities at the present time to meet the situation. The committee at its next meeting expects to receive a complete summary of the prospective needs for hospital enlargement throughout the country from the Public Health Service.

Public Health Service Requests Additional Funds

Surgeon-General Cumming of the Public Health Service estimates that it will cost the government \$18,316,000 to take care of sick and disabled soldiers and sailors for the fiscal year ending June 30, 1920. In a statement to the Secretary of the Treasury, Dr. Cumming says that the Public Health Service is now caring for 12,000 patients in hospitals and is examining over 3,500 new patients each week. The medical, surgical and hospital requirements of the Public Health Service are such that Congress has been requested to appropriate an additional \$8,816,000 to meet the needs of the service to June 30, 1920.

Bill to Transfer Medical Care of Disabled Veterans to War Risk Insurance Bureau

A bill has been introduced by Congressman Rogers of Massachusetts to transfer to the Bureau of War Risk Insurance the care of discharged sick and disabled soldiers and sailors. This work is now being performed by the United States Public Health Service and is of course only a part of the functions of the latter organization. The care of sick and disabled service men has been an enormous task for the Public Health Service and has reached proportions far beyond all expectations. It is the belief of Congressman Rogers that this work can be more efficiently performed by the Bureau of War Risk Insurance because the duties of this bureau are directed exclusively to ex-service men.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

INDIANA
Indianapolis—Sutherlin, C. G.

MICHIGAN
Manton—Bloxson, P. W.

NEW MEXICO
Hagerman—Losey, R. R.

NEW YORK
Syracuse—Weinheimer, L. H.

OHIO
Ralston—Spaulding, H. B.
PENNSYLVANIA
Philadelphia—Smith, C. D.
SOUTH CAROLINA
Health Springs—Stover, M. S.
TEXAS
San Juan—Fleck, W. L.
VIRGINIA
Richmond—Hatcher, M. A.

Foreign Letters

MADRID

Feb. 10, 1920.

The Increase of Mortality in Madrid in December and January

Dr. Lasbesnes, director of the bureau of statistics of Madrid, has furnished some interesting data for THE JOURNAL on sanitary conditions at Madrid during the months of December, 1919, and January, 1920. The highest mortality ever reached at Madrid during the present century is shown. The number of deaths at Madrid is always smallest during the month of September, after which it increases gradually, reaching the highest point in January. This happened last fall and winter; but this time the increase in mortality was so great that it caused much anxiety. In the middle of December, 1919, the number of deaths was very high, exceeding greatly the average for this part of the year. The total number of deaths during this month was 2,803. In the last nineteen years there have only been two months with over 2,000 deaths, namely, January, 1914, 2,074, and January, 1919, 2,124. The average for December had been 1,582, compared with 2,803 of last December and 3,059 last January. The most prevailing diseases were bronchopneumonia, bronchitis, pulmonary tuberculosis, influenza, heart diseases, meningitis and cerebral congestions. This is the third wave of influenza, the first having occurred at the beginning of June, 1918, and the second in January, 1919. In the first two, the child mortality was very low, but not so in the present wave, as one disease alone, acute bronchitis, has trebled the deaths among children. Of 345 deaths from acute bronchitis, 310 were in children less than 5 years old. Typhoid fever also has increased, fifty-eight having died in December, and sixty-two in January. The deaths from colibacillosis, not included in the typhoid reports, were five in December. Typhoid fever came on so suddenly, and became so prevalent, that the physicians felt compelled to call attention to the fact, since the sanitary authorities were silent about the matter. Smallpox, on the contrary, caused only two deaths in the last seven months of 1919. The suppression of this disease is due, as I stated in a previous letter, to the enforcement of compulsory vaccination by the governor of Madrid. Influenza caused 207 deaths in December and 311 in January, and bronchopneumonia, 385 in December and 440 in January. There have also been a few cases of encephalitis lethargica. An important fact, to which Lasbesnes invites attention, is the decrease in the number of births, which have been decreasing slowly but constantly, after reaching in 1917 the highest figure of 17,178 live births; in the last two years in spite of the increase in population, the births have decreased to 16,958 in 1918 and 16,309 in 1919.

The Physicians of the Franciscan Order

The Third Order of St. Francis has had in Madrid for a long time a hospital, very popular among the thousands of people who belong to that order. In order to become physician of that hospital it was necessary to take an examination, and the physicians chosen had occupied these places for many years with general approval. The election of a new board of directors caused difficulties among those participating in the work of the hospital. There was an open breach and the physicians, pharmacists and chaplains were expelled without any explanation. The board of directors then appointed two physicians to replace those thrown out informally. These physicians, however, appealed to the Association of Physicians of Madrid. After many discussions and controversies, a meeting was held, February 6, at which

The evidence presented by Dr. García de la Sarrana, one of the expelled physicians, convinced every one of the injustice committed in their case. Those who had replaced them hastened to place their resignations in the hands of the board of directors of the Association of Physicians. Pending the final decision by the department of the interior, which is now considering the matter, the board asked the new physicians to continue in their places. All considered, this is a new victory for the medical profession, which has shown its solidarity.

Conclusions Based on More than Two Thousand Laparotomies

Dr. Cospedal Tomé, the gynecologist, dean of the Hospital de la Princesa, delivered the inaugural address of the medical course before the Royal Academy of Medicine. His address was a simple presentation of his surgical experiences and technic obtained in many years of constant practice. He favors chloroform anesthesia and the figure of eight suture to close the abdominal cavity, which prevents the entrance of foreign material, and expresses surprise that this kind of suture has not become more popular.

LONDON

March 20, 1920.

Memorial to Osler

A meeting has been held at Oxford to consider what steps could be taken to perpetuate the memory of Sir William Osler. It was attended by many leading members of the University and of the medical profession. The vice chancellor, who presided, said that the meeting was held to show the respect and affection felt for the late regius professor of medicine not only by the University of Oxford but also by other universities on more than one continent and by the London hospitals. Osler's name would always be associated merely with the history of the chair of medicine at Oxford but with its actual existence as well by reason of the generous benefaction, of which he was the first to hear from Osler's lips. Sir Clifford Allbutt, regius professor of physics in the University of Cambridge and president of the British Medical Association, in proposing a resolution that Osler's distinguished services were worthy of a permanent memorial in Oxford, said that it would be impossible to sum up what made the real charm of Osler's character. He could present only one point of view: the universality of his experience and his sympathies. A resolution was then proposed by Sir William Church, formerly president of the Royal College of Physicians: "That in view of the intimate association of Sir William Osler's life work with Oxford and the study of the origin and prevention of disease, the most appropriate form of memorial would be an Osler Institute of General Pathology and Preventive Medicine." The resolution was adopted. On the motion of the dean of Christ Church, seconded by Sir A. E. Garrod, Osler's successor in the chair of medicine, committees were appointed to issue an appeal. It was announced that a provisional committee of Osler's friends in America, consisting of Professors Welch, Harvey Cushing, Billings, President Butler and Dr. Walter James, had been appointed. Among those who have expressed sympathy with the proposal are the United States ambassador, the British ambassador to the United States, the high commissioner for Canada, and the president of the Royal College of Physicians.

Clean Milk

The supply of clean milk still remains an unsolved problem. Under ordinary farm conditions, fecal and other forms of contamination are rife and in general cannot be prevented. However, the food controller has instituted a system

of licenses by which clean milk can be sold under a guarantee. There are two licenses: "Grade A milk" and "Grade A certified milk." These designations can be used only under the license. Grade A milk is produced under specially clean and hygienic conditions from a herd which contains no cow that has not passed the specified tuberculin test and certain other requirements. While the license is held, every facility must be afforded for taking samples of milk from any cow in the herd or from the mixed milk. The farm must be open to government inspection and must attain a certain standard in equipment and methods. The license is granted only after such inspection, and if later the standard is found to have deteriorated, the license may be withdrawn. The milk must be cooled on the farm and consigned in a sealed container having a label giving the address of the farm, and stating whether from morning or evening milking. Dealers who desire to sell the milk must show that their equipment and methods are satisfactory and that the milk is delivered to the consumer in the vessel in which it is received, or in bottles sterilized by steam, filled on the premises of the retailer and closed by disks or caps showing the day of production. For Grade A certified milk there are additional requirements. The milk after cooling must be bottled on the producer's premises in sterilized bottles and labeled to show the day of production and the time of the day. On examination at any time before delivery to the consumer, it must not contain in 0.1 c.c. (in each of two tubes) *B. coli* or more than 30,000 bacteria per cubic centimeter. Further, the milk must not be delivered to the customer more than two days after production.

The Range of Services of the Panel Physician

The panel physician contracts to render such services as can be "properly undertaken by a general practitioner of ordinary professional knowledge and skill." What exactly this includes would in some cases be a question. A dispute arose between the Glasgow insurance committee and the local medical committee whether the operation of suturing tendons of fingers is a service of a kind which can consistently with the best interests of the patient be properly undertaken by a general practitioner of ordinary skill. The insurance committee contended that the operation did not require special skill. The question was referred to referees, who included Mr. F. K. Smith, surgeon to the Royal Infirmary, Aberdeen. The referees held that a distinction must be made between the operations on the tendons at the back of and on the front of the hand. They pointed out that there were special risks and difficulties in suturing the tendons of the palm. The sheath which encloses the palmar tendons may be the means of carrying septic material into the palm or forearm, and, moreover, the proximal end of the severed tendon, being subject to retraction into the sheath, may involve operative enlargement of the original wound. The conditions existing in the patient's dwelling, under which the general practitioner would generally have to operate, would increase the risk of sepsis, especially when the fingers have been crushed. The referees therefore decided that no general rule could be laid down that suturing tendons of a finger was a service which could properly be undertaken by the general practitioner.

The British Journal of Experimental Pathology

A new journal, for which the annual subscription is \$10, has appeared under the editorship of leading pathologists: C. H. Browning, P. Fildes, W. E. Gye, E. L. Kennaway, E. H. Kettle, J. McIntosh, J. A. Murray, W. J. Tulloch and C. M. Wilson. Among the articles in the first number are: "Is Haemolysed Blood Toxic?" by Professor Bayliss. The author brings forward evidence to show that hemolysis in itself is

harmless. The matter is of great practical importance because of the view that serious results may be due to the hemolysis of corpuscles introduced in transfusion. The experiments on which this view is based have been performed on rabbits. Bayliss points out that rabbits are not suitable animals, owing to their aptitude for intravascular clotting. In the cat and dog, homologous hemolyzed blood is usually innocuous. He regards the occasional ill effects of transfusion as due to anaphylactic shock from foreign serum protein. J. McIntosh and W. A. M. Smart contribute a paper on "The Reaction of Bacteriological Culture Media"; W. Cramer, on "Sympathetic Fever and Hyperpyrexial Heat Stroke"; P. M. Fildes, on "The Serological Classification of Meningococci," and H. Maclean and O. L. V. de Wesselow on "The Testing of Renal Efficiency." It will be seen that a high standard and one representative of the British school of pathology is maintained.

Influenza

Influenza is again prevalent, but so far the cases are neither numerous nor of severe form. The number of deaths registered from the disease in the ninety-six principal towns during a week has risen from forty-three, the lowest in the last thirteen weeks, to 196. The army authorities are investigating the bacteria of all kinds present in the throats of soldiers, so that if an epidemic becomes general it will be possible to determine whether any new microbe appears among the ordinary organisms of the throat.

The Fellowship of Medicine: Osler's Successor

Sir George Makins, president of the Royal College of Surgeons, has become president of the Fellowship of Medicine and Post-Graduate Medical Association, in succession to Sir William Osler.

PARIS

Feb. 26, 1920.

Eight-Hour Day in Paris Hospitals

The eight-hour day, which has been in force in Paris hospitals since the beginning of the year, is giving deplorable results, and the *Journal des Praticiens* contains a bitter arraignment of the system. Among the inconveniences arising out of the new system the most important are: the reduction of the hospital personnel at 4:30 p. m. to one supervisor for four wards and to one nurse for each ward; the disorganized condition of the hospital service between 11 a. m. and 2 p. m. during the time a large part of the personnel are taking their meals outside of the hospital, and the necessity of enlisting the services of a new personnel that is far from satisfactory. The present system interferes especially with the intern on his second round. In order to have an opportunity to do any useful work, the intern should, under the new system, make his second round between 3 and 4 o'clock, which is much too early for him, as he does not leave the hospital after his first round until 12 or even later. Then, again, if he does come at 3 p. m. he breaks in on the taking of temperature, the bathing of patients, etc. On the other hand, after 4:30 p. m. the intern might as well give up making a second round, for the sole nurse in charge of the ward has just come on duty and is not in touch with things as yet; nor is she in a position to accompany him on his round, as she is being summoned every few minutes by this or that patient.

Aside from the disorganization referred to, the eight-hour day has had a bad moral effect on the hospital personnel. Nurses who under the old system did not hesitate to put in a half hour overtime, if it seemed necessary, now make it a point to leave on the stroke of the clock, which works hardship on the poor fellow who is so inconsiderate as to be in urgent need of assistance just at that moment.

The Needs of Paris Hospitals

In his recent report, M. Mesureur brings the needs of Paris hospitals forcibly to the attention of the Conseil de surveillance de l'assistance publique. He states that the small service of radiotherapy as organized in the Hôpital Pasteur contrasts unfavorably with the progress that has been realized in radiotherapy in foreign countries, and is inadequate to supply the needs of poor cancerous patients, who are becoming more and more numerous. M. Mesureur suggests, therefore, that an up-to-date radiotherapeutic service be organized. He also calls attention to the fact that Paris lacks a thoroughly organized service of physiotherapy, and recommends that the need be supplied. Furthermore, he requests that also services in which special attention is given to conservation work and plastic surgery be established in various Paris hospitals; for example, Charité, Salpêtrière, Bicêtre, Saint-Louis, Saint-Antoine, Laënnec, etc. M. Mesureur estimates that the total cost of the proposed improvements will amount to 150,000,000 francs, and suggests that the city of Paris place at the disposal of the Assistance publique the sum of 15,000,000 francs annually for the ten-year period 1922-1931.

Violation of the Right of Privileged Communication

The question of the right of privileged communication came up recently in a French court (Cour de Paris), and the circumstances were these: In support of his demand for a divorce, a husband produced a medical certificate setting forth the pathologic condition of his wife. The court, calling attention to the fact that the right of privileged communication is a matter of public policy, ruled that a physician has not the right, without the knowledge of his patient, to deliver a medical certificate to a third party, even though the third party should be the husband. The judges, therefore, insisted on excluding from the case the medical certificate that had been delivered in violation of the right of privileged communication. The court went still further and gave a decree in favor of the wife, by reason of the grave injury she had suffered owing to the production in court of the medical certificate in question.

International Scientific Relations

The *Presse médicale* recently published a review of a German treatise on experimental bacteriology, over which fact certain medical journals became very much aroused, especially since the work in question took no account of researches and discoveries in the bacteriology of infectious diseases made outside of Germany since 1914. For example the book is silent on the interesting American researches relative to the classification of pneumococci, and the important French investigations concerning the varieties of meningococci and the causative agents in gas gangrene. The questions may well be asked: Was this really a systematic boycotting of French and American science, as the *Journal de médecine de Bordeaux* asserts? Can the matter not be explained simply by the fact that, during the war, it was difficult for a German bacteriologist to keep abreast of the times and be familiar with French and American researches just as French and American bacteriologists must have found it difficult to keep up with German publications on the subject of bacteriology?

At the annual meeting of the Académie des sciences, Prof. Léon Guignard referred in his presidential address to the international scientific relations of the future. He set forth somewhat in detail the work of the Conférence académique interalliée which was held in Brussels and which resulted in the definite founding of the Conseil international de recherches scientifiques. The by-laws of the society were drawn up and neutral nations were invited to collaborate in

beli was their desire. The Germans and their allies were excluded until such time as they should have furnished their conquerors rightful reparation and the necessary guarantees. The results of the meeting at Brussels had scarcely become known when a group of members of certain academies in neutral countries filed a petition with the learned societies of the allied nations asking them to resume prewar relations with German scholars and scientists. Professor Guignard holds the view that until the German mentality shall have changed we shall say: we don't know these men; we don't want to know them." But like a true man of science he recognizes the fact that no scholar worthy of the name "should refuse to take an interest in any idea that may be promulgated throughout the world no matter who the author may be, even though it should be his bitterest enemy; but he can take interest in it without coming into personal contact with the author."

An American Library in Paris

The American nation has presented to France the library of English books that was collected in Paris by private gifts during the war. It will constitute a souvenir of the sojourn of the American soldiers in France. At the present time this library, which numbers 25,000 volumes and has a reading room in connection containing journals and periodicals, is located at rue de l'Elysée, 10, and is open daily from 10 a. m. to 10 p. m. (Sundays, from 2 to 10 p. m.). The American and English colonies in Paris have donated considerable sums in order to assure the library's continued existence. The French committee in charge of the library has issued an appeal to all persons interested and has asked for contributions for the upkeep of the library, introducing for this purpose a sliding scale in order to fit the needs and the varying financial conditions of those interested. Participating members may draw one book at a time, annual fee, 10 francs; subscribing members may draw two books at a time, annual fee, 20 francs; contributing members pay an initial sum of 100 francs and make an annual contribution of 100 francs; supporting members contribute 2,000 francs, and patrons, 5,000 francs. Contributions and subscriptions may be sent to American Library Fund, rue de l'Elysée, 10, Paris.

Death of Dr. Henri Triboulet

Dr. Henri Triboulet, physician to the hospitals of Paris, died recently at the age of 56. He was born in 1864; became hospital intern in Paris, and was appointed physician to the hospitals in 1898. His name is closely associated with the prohibition movement. In 1895 he became one of the founders of the Union française antialcoolique, in the interests of which he has delivered numerous lectures every year in Paris and throughout the provinces. From 1903 to 1905 he held the office of vice president of this society, and in this capacity became especially interested in the establishment of temperance restaurants where no alcoholic beverages whatsoever were sold. In 1905 he published, in collaboration with Drs. Mathieu and R. Mignot, a treatise on alcoholism, "Traité de l'Alcoolisme."

Marriages

DANIEL EDGAR ROBERTS, Keyport, N. J., to Miss Julie Hildegarde Bisgaard, at Holmdel, N. J., March 21.

DANIEL GLEN SMITH, Schenectady, N. Y., to Miss Esther Denny of New York City, April 5.

GLADYS EMELIA PATRIC, Los Angeles, to Milan Chabowitch Ochrid, Serbia, Nov. 13, 1919.

ALVIN POWELL, Oakland, Calif., to Miss Josephine Miller, May 6.

HEDWIG STIEGLITZ to Mr. Hugo Kuhn, both of Cincinnati, March 29.

Deaths

William Martin, Medical Inspector, Commander, M. C., U. S. Navy, retired, San Francisco; Tulane University, New Orleans, 1874; aged 73; who entered the Navy as acting assistant surgeon in 1874, and was discharged, June 30, 1879; was appointed to the Medical Corps, April 14, 1882, not in line of promotion, by special act of Congress, honorable and meritorious service in yellow fever epidemic, Pensacola, Fla., 1874, and New Orleans, 1878, promoted to surgeon, not in line of promotion, Oct. 1, 1890, by special act of Congress, for extraordinary and meritorious service in yellow fever epidemic, Pensacola, 1888, and was retired, Dec. 25, 1893, with rank of next higher grade to that held on active list, after six years and two months of sea service, including service in the Volunteer Navy during the Civil War; on account of incapacity the result of an incident of service; died, April 1.

Francis A. Seymour, Los Angeles; Kentucky School of Medicine, Louisville, 1864; University of Louisville, Ky., 1867; aged 76; acting assistant surgeon, U. S. Army, during the Civil War; formerly associate professor of physiology and later lecturer on general pathology in the Kentucky School of Medicine; for forty years a practitioner of California; once president of the Los Angeles County Medical Association; associate editor of the *Southern California Practitioner*; for five years president of the Humane Society and the Society for the Protection of Children; died, March 20.

John A. Lee ☉ Brooklyn; Yale University, New Haven, Conn., 1897; aged 47; surgeon, lieutenant-commander, U. S. Navy, and relieved from active duty, Feb. 12, 1919; president of the Kings County Medical Society; surgeon to St. Mary's Hospital, and attending surgeon to the Kingston Avenue Hospital, Brooklyn; one of the early experimenters with the roentgen ray; died, April 5, his death being reported to be due to the result of burns suffered while the effects of the roentgen ray were little understood.

Harry Waldo Kimball, Providence, R. I.; Medical School of Maine, Brunswick and Portland, 1891; aged 52; a specialist in dermatology; dermatologist to the Rhode Island Hospital, consulting dermatologist to the Sophia Little City Hospital, and State Sanatorium for Consumptives; dermatologist to the Sophia Little Home; for the last two years surgeon, U. S. P. H. S., Reserve; died, March 27, from erysipelas.

Thomas A. Harris, Parkersburg, W. Va.; University of Virginia, Charlottesville, 1854; aged 89; a member and once president of the West Virginia State Medical Association; surgeon of the Twenty-Third Georgia Infantry, C. S. Army, during the Civil War; for several years a member, secretary and president of the West Virginia State Board of Health; died, February 29.

Jean B. C. Gazzo ☉ Raceland, La.; University of Louisiana, New Orleans, 1879; aged 63; for twelve years coroner of Lafourche Parish, and for four years parish health officer; for one term president of the Louisiana Pharmaceutical Association, and for thirty years local surgeon for the Southern Pacific Railroad; died, March 14, from heart disease.

Leonard St. John ☉ Chicago; McGill University, Montreal, 1872; M.R.C.S. (Eng.), 1873; aged 67; at one time professor of clinical surgery in the Chicago College of Medicine and Surgery; for many years surgeon to St. Anthony's Hospital; one of the founders of the College of Physicians and Surgeons; died, April 2, from heart disease.

Joseph Anthony Mangiaracina, Brooklyn; University and Bellevue Hospital Medical College, New York City, 1917; aged 26; lieutenant, M. C., U. S. Navy, and on duty during the World War, at the Naval Aviation Station, Rome, Italy; a member of the Medical Society of the State of New York; died, February 14, from appendicitis.

Phoebe Thorne Williamson, Brooklyn; Woman's Medical College of the New York Infirmary for Women and Children, 1878; aged 70; founder of the Woman's Hospital, Poughkeepsie, and for many years a member of the staff of the Eastern Dispensary, Brooklyn; died in the Hahnemann Hospital, New York City, March 21.

William Gaertner, Buffalo; University of Marburg, Germany, 1886; University of Buffalo, 1894; aged 59; a member of the Medical Society of the State of New York; since 1914 president of the board of trustees of Grosvenor Library, and

☉ Indicates "Fellow" of the American Medical Association.

a member of the state board of health from 1900 to 1918; died, March 12, from pneumonia.

Edgar Lee Lindsey, Fort Smith, Ark.; University of Arkansas, Little Rock, 1910; aged 33; a member of the Arkansas Medical Society; lieutenant, M. C., U. S. Army, and discharged on account of physical disability, Feb. 27, 1918; a specialist on diseases of the eye, ear, nose and throat; died, March 8, from pneumonia.

Willard Young Croxall ⊕ Hoquiam, Wash.; Jefferson Medical College, 1896; aged 50; a member of the Pacific Coast Oto-Ophthalmological Society, and a specialist on diseases of the eye, ear, nose and throat; died in the Portland Surgical Hospital, March 12, two weeks after a surgical operation.

William Henry Hurlbut, Fond du Lac, Wis.; Eclectic Medical Institute, Cincinnati, 1868; aged 83; for two terms state assemblyman from Walworth County, and for thirty years attending physician to the Walworth County Insane Hospital; died at the home of his daughter in Fond du Lac, March 23.

Harry Neafie Taylor ⊕ Maricopa, Calif.; Bellevue Hospital Medical College, 1898; aged 46; president of the West Side Medical Association; city health officer of Maricopa; president of the board of school trustees, and a director of the Maricopa Bank; died, March 3, after a surgical operation.

Aurelius Pallones, Beltzhoover, Pittsburgh; University of Brussels, Belgium, 1886; University of Paris, France, 1887; Jefferson Medical College, 1889; aged 73; commissioned major and surgeon during the war with Spain; for five years on duty with the Ninth U. S. Infantry; died, March 16.

George Williamson Cabaniss, Washington, D. C.; Howard University, Washington, D. C., 1890; aged 62; a colored practitioner; once president of the Medico-Chirurgical Society and visiting physician to the Freedmen's Hospital; died, March 7, from acute gastritis.

George Henry Ensing, Vashon, Wash.; Detroit College of Medicine, 1904; aged 37; who served as captain in the Royal Army Medical Corps during the World War, and was gassed in Flanders; is reported to have committed suicide by drowning in London, about March 21.

George H. Grimmell, Colorado Springs, Colo.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 84; a veteran of the Civil War in which he served as surgeon of U. S. Volunteers; for many years a practitioner of Des Moines, Iowa; died, March 14.

Jacob R. Shellenberger, Philadelphia; University of Pennsylvania, Philadelphia, 1867; aged 78; a member of the Medical Society of the State of Pennsylvania; once president of the Philadelphia Aid Society for Physicians; died, March 20, from heart disease.

Richard Aloysius Phelan, St. Louis; St. Louis College of Physicians and Surgeons, 1909; aged 47; a member of the Missouri State Medical Association; lieutenant, M. C., U. S. Army, and discharged, Dec. 7, 1918; died, March 14, from malignant disease.

Benjamin Ely Braselton, Miami, Okla.; University of Texas, Galveston, 1899; aged 43; a member of the Oklahoma State Medical Association; captain, M. R. C., U. S. Army; and discharged, March 4, 1919; died, February 9, from pneumonia.

John T. Blank, Elk City, Kan.; Eclectic Medical Institute, Cincinnati, 1890; aged 60; a member of the Kansas Medical Society; while driving his automobile over a grade crossing at Independence, Kan., March 29, was struck by a train and killed.

Henry B. Brown, Lincoln, Ill.; St. Louis Medical College, 1876; aged 68; local surgeon for the Chicago and Alton and Illinois Central systems; and surgeon to St. Clara's Deaconess hospitals, Lincoln; died, March 18, from heart disease.

James H. Bronaugh, Calhoun, Mo.; Missouri Medical College, St. Louis, 1871; aged 81; a member of the Missouri State Medical Association, and a charter member of the Henry County Medical Society; died, January 14.

John Alexander Dickson, Rock Creek, Ohio; University of Wooster, Cleveland, 1876; aged 69; local surgeon of the New York, Chicago and St. Louis Railroad; once president of the state medical board; died about March 22.

Leroy Joe Gillespie, Hope, Ark.; Missouri Medical College, St. Louis, 1886; aged 68; president of the Hempstead County (Ark.) Medical Society in 1893; died, February 15, from pneumonia following influenza.

H. Murray Loewenthal, Brooklyn; College of Physicians and Surgeons, Baltimore, 1892; aged 47; formerly superin-

tendent of the Rubber Plantation Hospital, Elopura, British North Borneo; died, March 13.

Richard B. Graves, Hot Springs, Ark. (license, nongraduate, State Medical Board of Arkansas, 1903); aged 77; for more than half a century a practitioner of Hot Springs; died, March 18, from pneumonia.

George P. Minvielle, Jeanerette, La.; University of Louisiana, New Orleans, 1877; aged 64; a member of the Louisiana State Medical Association; died in St. Mary's Hospital, Patterson, La., March 14.

James R. Champion, Hilldale, Mo. (license, Missouri, 1903); aged 51; a member of the Missouri State Medical Association, and president of the Howard County Medical Society; died, March 8.

Charles Lowndes, Easton, Md.; University of Maryland, Baltimore 1855; aged 87; for six years a medical officer in the United States Navy; died February 24, from arteriosclerosis.

Ralph Gardner Curtis, Hollister, Calif.; Jefferson Medical College, 1901; aged 49; died in the University of California Hospital, San Francisco, March 22, from carcinoma of the lung.

Warren LeRoy Ayer, Owego, N. Y.; Long Island College Hospital, Brooklyn, 1868; aged 76; a member of the Medical Society of the State of New York; died, March 25.

James Edward Greene, Brooklyn; College of Physicians and Surgeons, Baltimore, 1884; aged 58; died in the Macon, Ga., Hospital, March 2, from nephritis.

Wylie Brown, Tucson, Ariz.; Physio-Medical Institute, Cincinnati, 1862; aged 86; for many years a practitioner of Reno County, Kan.; died, March 12.

Hal J. Palmer, Navasota, Texas (license, years of practice, Texas State Board of Medical Examiners, 1907); aged 83; died in Morrilton, Ark., recently.

James William Elliott, Boston; Bellevue Hospital Medical College, 1898; aged 45; died in the Boston City Hospital, about March 4, from nephritis.

Jesse Clark Trueblood ⊕ Loogootee, Ind.; Miami Medical College, Cincinnati, 1879; aged 69; died, March 13, from valvular heart disease.

Edward Oliver Brannon, Conway, Ark.; University of Tennessee, Nashville, 1879; aged 70; died, March 11, from Bright's disease.

Lorenzo Erasmus Norton, Fremont, Mich.; Bellevue Hospital Medical College, 1873; aged 71; also a druggist; died, March 21.

Charles C. Curtis, San Pedro, Calif.; Hahnemann Medical College, Chicago, 1874; aged 76; died, March 14, from nephritis.

Fred Carter Newcomb, Akron, Ohio; Cleveland Homeopathic Medical College, 1898; aged 52; died, March 17, from uremia.

Ora Haskell Lamb, Demorest, Ga.; University of Vermont, Burlington, 1874; aged 73; died, January 15, from pneumonia.

Michael J. Lawler, Carthage, N. Y.; Albany, N. Y., Medical College, 1890; aged 52; died, March 7, from pneumonia.

Edward J. Freeman, Freemansburg, Pa.; University of Pennsylvania, Philadelphia, 1873; aged 68; died, March 14.

Herbert Carleton Sawyer, La Jolla, Calif.; University of California, San Francisco, 1881; aged 62; died, March 7.

Eben Bell Kirk, Montgomery, Ala.; University of Alabama, Mobile, 1885; died in a hospital in Montgomery, March 10.

Sumrow Sampson Greene, Vernon, Texas; Vanderbilt University, Nashville, Tenn., 1916; aged 25; died, February 11.

Granville L. Gorslene, Chillicothe, Ohio; Starling Medical College, Columbus, Ohio, 1865; aged 82; died, January 9.

Edward F. Walsh, Philadelphia; University of Pennsylvania, Philadelphia, 1883; aged 58; died, March 17.

Charles Sienknecht, Harriman, Tenn.; University of Nashville, Tenn., 1866; aged 78; died early in January.

Michael Vandervoort, Guthrie, Okla.; Hahnemann Medical College, Chicago, 1868; aged 77; died, March 10.

Benjamin L. Wills, Plant City, Fla.; University of Pennsylvania, Philadelphia, 1864; died about March 9.

Alexander Easley Boyd, Yoakum, Texas; Louisville (Ky) Medical College, 1888; aged 54; died, March 7.

John Watson Carter, Bessemer, Ala.; University of Nashville, Tenn., 1874; aged 70; died, February 21.

Correspondence

DIFFICULTIES OF SECURING VITAL STATISTICS AND OF REGULATING MIDWIVES

To the Editor:—As an illustration of the difficulties of securing birth and death registration, I am enclosing copy of a certificate of death received at our office, which we afterward found to be due to hydrocephalus, the physician signing, as stated, in the war. The spelling is exactly as given:

This deth was from magnesium of the bran the Dr wated on this child in wor surves.

We also enclose a letter which we have just received from one of our midwives showing the task which we have before us in our effort to teach these women to be safe obstetricians:

Dear Sirs: i an sending for more eye drops i am only got two in the x please send me a bottle of that medecine to give the paceions after e babies is born and send me some blue mas pills to wash my hands please I wrote to you sometimes ago to send me the papers i havent t but two planks what is the reason you havent sent them it is time was getting them in for this year please try to get the medecine and ls here some time in april for i will want them now very soon send two packages of blanks about what last a year i have only two more cions every one i have had the doctor with me and he fills every ank i sended in i have had good luck with all my pacions i am asking you kindly of you please send me a gum coat ands boots i go night d day and i have nothing to preteck me from the rain i am not able get one myself so far send me seven boxes of eye drops nomore at sent answer as soon as you get my letter for i an needing them from the midwife

please send me 1 bottle of worme medecine."

H— W—, Hume, Va.

To this we answered:

Dear Madam:—We have your letter and are sending you four capsules of eye drops. We do not send them in bottles. You stick a candle in the end of the wax and squeeze the drops out into the baby's eyes.

We do not send the blue antiseptic tablets. We want to warn you, however, against calling them blue mass pills. Blue mass is a medicine which is taken in the mouth to act on the bowels. These blue flat tablets are rank poison and would kill any one taking them, thinking they were blue mass. They are to be used, one tablet to a quart of water to bathe the hands and not for internal use. Do not forget that, and do not call them blue mass. It might fool some one into taking them. They are corrosive sublimate tablets. Never, never call them blue mass again.

We do not think these tablets are safe for any one who has no common sense than that. It is much safer for you to get a cake of germicidal soap and use that. You can get it from Miss Quisenberry, who will send you an advertisement for it, or you can get it from a drug store there perhaps.

We are sending you also some blanks. You asked also for worm medicine. We do not furnish that. Are you crazy, or what is the matter with you? Do you think we can send you a gum coat and boots? We are afraid you have not sense enough to do that kind of work and are afraid we will have to take your permit away from you. Remember that you must never put your finger inside of a patient for any purpose at all. That is absolutely against the law. Do not forget that. Read all the rules on the back of your permit and practice according to them.

In spite of the material that we have to work with, the perinatal death rate was reduced from 497 in 1917 to 333 in 1919. The latter figures, however, will be somewhat increased by delayed reports. This, we take it, means the saving of perhaps 150 lives of mothers, with perhaps as many more infants. This has been done by circular letters, bulletins, booklets and personal correspondence.

W. A. PLECKER, M.D., Richmond, Va.
State Registrar.

NO PHYSICIAN OR SURGEON AS YET IN THE HALL OF FAME

To the Editor:—Soon there will be the fifth quinquennial election to the Hall of Fame. The first took place in 1900 immediately after the funds had been given anonymously for the building of a permanent monument to the men and women who had contributed most to the nation's well-being and culture. According to the constitution it was agreed that at the first election fifty national figures in art, science and history should be chosen, and that thereafter five were to be added every five years.

The method of procedure is such as to allow no question as to the person's eligibility. The senate of the New York University, made up of the dean and senior professor of each of the university schools with the presidents or other representatives of each of the great theological schools in or near New York City, chooses the electors. There are a hundred of these. Every state is represented by at least one man. These hundred men are chosen by virtue of their eminence in some branch of national culture. They fall into seven main divisions: authors, presidents of universities or colleges, scientists, professors of history, jurists, high public officials or men or women of affairs, and editors. Dr. Charles H. Mayo, Rochester, Minn., is one of the electors. When the names are sent in to the senate of the university they are considered on the basis of constitutional qualifications. Not the least important of these qualifications is the one requiring that the nominee must have been deceased at least ten years.

William T. G. Morton, the discoverer of ether anesthesia, was once proposed under Group VII—Physicians and Surgeons—but failed in the election. I hope there will be no barrier to renominating the "inventor and revealer of anesthetic inhalation, before whom in all time surgery was agony."

The next two greatest figures in American medicine and surgery are perhaps Ephraim McDowell and J. Marion Sims. McDowell performed the first rational and deliberate ovariectomy, which he did in 1809, and of course without an anesthetic; his patient living for thirty-two years after the operation. As is well known, J. Marion Sims (1813-1883) gained for himself a national and international reputation by his invention of the speculum as an instrument for the treatment of pelvic diseases in women, and by his perfecting the plastic operation in the vagina for the relief of vesical fistulas.

The nominations must be sent in before May 1. Besides erecting the tablet in the Hall of Fame, the senate of the New York University is now considering collecting the works, where it is possible, of all the men and women who have thus been honored by the nation. They hope in this manner to create a valuable "Americana," open for study and inspection.

While there may be other great physicians and surgeons in the past generations who have so distinguished themselves as to be worthy to be classed with "America's greatest," I venture to say none has surpassed the achievements of Morton, McDowell and Sims. These were real pathfinders in science and added to human happiness and well-being and the glory of the American medical profession.

S. ADOLPHUS KNOPE, M.D., New York.

REQUEST FOR REPRINTS ON RESEARCH IN PHYSIOLOGY, PHYSIOLOGIC CHEMISTRY AND PHARMACOLOGY

To the Editor:—While I was visiting the Medical School of the University of Louvain, last January, the professor of physiology in that institution asked me to help him, if possible, in procuring reprints dealing with American research along the lines of physiology, physiologic chemistry, pharmacology and related subjects. American writers desiring to aid the department at Louvain may address reprints to Dr. A. K. M. Noyons, Professor of Physiology, University of Louvain, Louvain, Belgium.

RICHARD M. PEARCE, M.D., New York.

County Health Administration.—The county government is the only normal and permanent channel through which governmental policies make the individual contact. The county government is the organ of application in health administration.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents*, 1919.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

REMOVAL OF FRECKLES

To the Editor:—The following prescription, written by Hebra, the dermatologist, is recommended particularly for the removal of freckles. This prescription in my hands has not given satisfaction in the treatment of freckles, and I am wondering whether it would be wise to increase the amount of mercury or use another drug. Unna, the Hamburg dermatologist, uses mercury in the same strength.

W. J. O'DONNELL, Buffalo.

PRESCRIPTION

Bismuthi subnitrat	.....gr. xxx
Sodii boratis	.....gr. xxx
Hydrargyri ammoniati	.....3i
White wax	.....q. s. ad 3i

ANSWER.—This prescription will not remove freckles. There is not enough of ammoniated mercury in it even to be irritating to the ordinary skin. Solutions of mercuric chlorid in a strength of from 0.5 to 1 per cent. are used, under medical supervision for the removal of freckles. They cause a dermatitis and exfoliation of the epidermis, and with that most of the pigment. The effect, however, is only temporary at best, and usually not worth the irritation and effort that it costs.

PRONUNCIATION OF DUODENUM

To the Editor:—Will you be good enough to give me the correct pronunciation of "duodenum," giving by proper diacritical markings the sound of each vowel?

ALICE H. MERRITT, San Diego, Calif.

Librarian, Medical Library Association.

ANSWER.—Duodenum is pronounced dew-owe-dee-num, with the accent on the third syllable.

It rhymes with the first three words in the sentence: "You owe freedom to the Great Emancipator."

The first vowel, "u" (yoo), retains the y element to a certain degree, though the sound of the double o in moon is permissible.

The second vowel, "o," is long and is distinct from the first.

The third vowel, "e," is long, and takes the accent.

The fourth vowel, "u," is short.

Some dictionaries mark a secondary accent on the first syllable.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.
DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham. Washington.
HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.
LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardestein, 702 Machesa Bldg., New Orleans.
NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.
NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.
NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.
OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.
WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

AMERICAN CONFERENCE ON HOSPITAL SERVICE

The third meeting of the American Conference on Hospital Service was held in the Congress Hotel, Chicago, March 3, 1920, following the annual meeting of the Council on Medical Education. The plans for this meeting were slightly disarranged owing to the illness of the first vice president, Dr. A. R. Warner. The meeting was called to order by Dr. John M. Dodson. Dr. Alexander Lambert, president of the American Medical Association, was elected as temporary chairman. About fifty delegates were present, representing the following organizations: American Association of Industrial

Physicians and Surgeons; American Association of Hospital Social Workers; American College of Surgeons; American Hospital Association; American Medical Association; American Nurses' Association; Association of American Medical Colleges; Catholic Hospital Association of the United States and Canada; Federation of State Medical Boards; Medical Department, U. S. Army; Medical Department, U. S. Navy; National League of Nursing Education, and National Organization of Public Health Nurses.

The first topic for discussion was the need for women trained in the fundamentals of nursing. After considerable discussion, it was voted to refer the whole subject to the Committee on Nursing, the members of which were later decided on.

At the second meeting, held in Cincinnati in September 1919, it had been planned to establish several committees. The personnel of four of these was named as follows:

Committee on Interns: Dr. John M. Dodson, chairman; A. M. A.; Dr. John M. Baldy, Philadelphia, F. S. M. B.; Dr. Guy M. Cushing, Chicago, F. S. M. B.; Lieut.-Col. L. Owen, M. C., U. S. Army, Washington, D. C.; Miss Bena Henderson, Chicago, Children's Memorial Hospital, N. E.; Rev. P. H. Mahan, Loyola Medical School, C. H. A.; Dr. E. S. Gilmore, Wesley Hospital, Chicago, A. H. A.; Miss Edna G. Henry, A. A. H. S. W.

Committee on Hospital Service, Record and Standardization: John G. Bowman, Chicago, A. C. S., chairman; C. William N. Bispham, M. C., U. S. Army, Washington, D. C.; Miss Mary Wheeler, A. N. A.; Dr. B. F. McGrath, Milwaukee, C. H. A.; Dr. Clarence D. Selby, Toledo, A. A. I. P. A. A. Bacon, Presbyterian Hospital, Chicago, A. H. A.; Miss Edna G. Henry, A. A. H. S. W.

Committee on Social Insurance: Dr. Otto Geier, Cincinnati, A. A. I. P. S.; Miss Minnie Ahrens, Chicago, A. N. A.; Miss Elnora Thompson, N. O. P. H. N.; Rev. Maurice F. Griffin, C. H. A.; Miss Edna Foley; Miss M. Antoinette Cannon, A. A. H. S. W.

Committee on Nursing: Miss Mary Wheeler, Illinois Training School for Nurses, Chicago, A. N. A., chairman; Lieut.-Col. Floyd Kramer, M. C., U. S. Army, Washington, D. C.; Miss Louise M. Powell, University Hospital, Minneapolis, N. L. N. E.; Rev. M. P. Bourke, Ann Arbor, C. H. A.; Dr. Louis H. Burlingham, Barnes Hospital, St. Louis, A. H. A.; Miss Elnora Thompson, Illinois Mental Hygiene Society, N. O. P. H. N.; Miss M. Antoinette Cannon, A. A. H. S. W.

It was planned to have the next meeting of the conference in connection with the annual session of the American Hospital Association, which meets in Montreal, Oct. 4-8, 1921.

A meeting of the trustees of the conference was held Thursday, March 4, which was attended by Rev. Charles Moulinier, Miss Edna G. Henry, Col. James Glennan, John G. Bowman and Dr. Harry E. Mock. Father Moulinier acted as chairman.

It was planned to have each organization in membership in the hospital conference present a report at the next meeting outlining its ideas in regard to improving hospital service. These reports will be summarized by a special committee composed of Dr. John M. Dodson, Miss Mary Wheeler, Miss Edna G. Henry, Col. James Glennan and Father John B. Moulinier. It was decided that the fifth meeting will be held jointly with the annual conference of the Council on Medical Education, early in 1921.

Arkansas November Eclectic Examination

Dr. Claude E. Laws, secretary of the Eclectic Board of Medical Examiners, reports the oral and written examination held at Little Rock, Nov. 11-12, 1919. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. The following colleges were represented.

College	PASSED	Year Grad.
American Medical College	(1876)
Kansas City College of Medicine and Surgery	(1918)
FAILED		
Kansas City College of Medicine and Surgery	(1919)

Social Medicine and Medical Economics

EFFECTS OF COMPULSORY HEALTH INSURANCE ON THE PRACTICE OF MEDICINE

M. L. HARRIS, M.D.

CHICAGO

At the close of the previous article (March 27, 1920, p. 908), it was stated that the effects of compulsory health insurance on the medical profession would next be considered. This phase of the subject is in a sense a secondary matter. By this is meant that if compulsory health insurance were a good thing, of unmistakable benefit to the people in general, and a distinct step forward in sociological evolution, then the medical profession would have no just cause for complaint, notwithstanding the fact that it might prove harmful to the best interests of the profession itself. The interests of a small class can never be paramount to that of the whole. Any measure which would be beneficial to all classes must necessarily be beneficial to the medical profession, and, on the other hand, a measure that would be harmful to all classes must be harmful to the profession. If a measure, however, is of negative or even doubtful advantage to the general community, then it becomes not only the privilege but the duty of physicians to point out wherein the measure may prove to be harmful to their own interests. In the present instance, the duty is a double one, for the reason that the harm which may be done the profession is reflected, or passed on to the people.

FUNDAMENTAL DEFECT OF COMPULSORY HEALTH INSURANCE

Speaking entirely from the point of view of the physician, the harmful effects of compulsory health insurance do not lie in the fact that a large percentage of the people are compelled to take out health insurance; if that were the only factor in the case, it would be an advantage to the profession, as it would result in many physicians receiving a much larger income than they now enjoy. However, one should not favor or oppose a measure pertaining to the public welfare merely on account of the possible effect which the measure might have on one's personal income. The fundamental defect of the scheme lies in the fact that the major portion of the benefits that the insured are to receive consists of medical services when ill, and the state presumes to dictate the terms of these services, thus placing them on a purely commercial or business basis. A bunch of sheep may be rounded up, sheared and dipped for the scab all like at so much a head; but sick human beings cannot be successfully treated in that manner. The personal element is a most important factor in the treatment of the sick, and it cannot be ignored except to the disadvantage of both the patient and the physician. Inanimate objects can be dealt with in a purely impersonal manner, and the transaction may be placed on a strictly business basis. Even dumb animals may be handled in this way; but when it comes to intelligent human beings, each one must be handled as an individual. They cannot be bunched together and treated by the job lot.

Compulsory health insurance, wherever it has been introduced up to the present time, has carried with it some form of contract practice. The state agrees to furnish the insured with medical services when sick as part of the benefits to be received for the premium paid. The state then proceeds to contract for the services just as it would for so much coal or groceries or any other commodity, failing to appreciate the fact that medical services cannot be measured by the ton or bushel. There is no other service so individual

and so personal as medical service. The confidence which an individual may have in his physician and which is often a material factor in the treatment of his illness is something which cannot be forced on one, and the personal interest which a conscientious physician has in the welfare of his patient, whether rich or poor, is something that cannot be bought. Anything which interferes with this mutual relationship between patient and physician is detrimental to both. When a patient is compelled to accept the services of a physician in whom he lacks confidence, however, unfounded that lack of confidence may be, there is found to be a failure of that perfect cooperation which is so essential if the best and speediest results are to be obtained. The conscientious physician who feels that he is called on to treat a patient who he knows has come to him only because he is compelled to and not because he wants to, unconsciously fails to give that patient the best that is in him. The finer sensibilities of both parties are offended, and this is frequently manifested on the part of the patient by a tendency to find fault with the physician, to imagine that he is not receiving the care and attention to which he is entitled.

It is characteristic of those who receive something for nothing, or something that they look on as their right, to find fault and to claim that they are being cheated out of their just deserts. And sometimes their complaints are not entirely without foundation, for the physician, blunted by the circumstance of the purely commercial relation between himself and the patient, fails to exhibit to the fullest extent the humane side of his calling. Contract practice tends to give poor service to the patient and to lower the standard of the profession, both of which must be detrimental to the welfare of the people. The patient who doesn't receive the best that medicine offers is defrauded of something to which he is entitled; yet it cannot be expected that the physician who is underpaid, and whose services are disposed of by the state, by wholesale, can give the best that is in him. It has long been observed that physicians who by reason of circumstances, or otherwise, have been forced into contract practice fail to develop medically and are soon found to be behind the times in their work. However altruistic an individual may be at times, there is no question but that a certain amount of self-interest dominates the actions of men. And it is well that such is the case, as otherwise it is scarcely conceivable that progress would be made.

HARMFUL EFFECTS IN GERMANY

That the foregoing statements are not simply an expression of opinion, but are facts founded on experience, is shown by the effects which compulsory health insurance laws have had on the medical profession in the countries in which they have been adopted. In Germany, the birthplace of compulsory health insurance, that large part of the medical profession that lived by the "krankenkassen" was reduced to a low state of scientific development, and for twenty years or more put up an almost continuous fight against underbidding and cheap and inefficient medical service. The physicians had to resort to strikes in order to secure for their work sufficient compensation to enable them to earn a bare living. The services rendered by the "hausarzt" were inferior in quality, yet entirely in keeping with the low compensation received. An underpaid medical profession means an underdeveloped profession. The making of a physician is not like the making of a bricklayer or a baker; when the latter have learned their trade it is only necessary for them to apply what they have learned, and their work is just as good today as it was yesterday and as it will be tomorrow. In medicine it is very different. A physician never fully perfects himself in his profession, as medical science is advancing and he must spend a certain amount

of time and money practically every day in order to keep up with the advancement. There are no union hours for the physician; all hours of the day and night are work hours for him, and if all of his time is taken up in earning a meager living he soon falls so far behind in his knowledge that he is able to render but poor and inefficient service to his patients. Under such conditions, it is evident that not only the profession but also the community must suffer.

For a time much was heard about the supposed wonderful efficiency of the German people; but at last the germanophilic glasses were struck from our eyes, when the true condition at once revealed itself. The assumption by the government of the obligations of the individual as exemplified in one of its phases by compulsory health insurance, in order that the individual might be able to devote more of his time and energy to the building up of the government, brought forth a people devoid of every sense of obligation, moral or otherwise, and this was one of the factors which led to the government's eventual downfall.

UNSATISFACTORY WORKING OF THE SCHEME IN ENGLAND

What was true concerning the harmful effects of compulsory health insurance on the profession and the people in Germany is fast becoming so in England, the last country to adopt a compulsory health insurance act. That the act is not a success in England is evident from the reports that come from that country.

Concerning the subject of compensation for medical services under the insurance act, Sir Bertrand Dawson in the Cavendish Lectures delivered before the West London Medical Chirurgical Society, in 1918, said:

As regards remuneration, justice demands reform. When we consider the exacting nature of the doctor's life, the long hours, disturbed nights, high tension of his work, it is only just he should be so paid as to live a reasonable life without anxiety. That is not so now. Take a doctor who may get £30 a year net for a panel of 350 patients, or innumerable instances of doctors being paid salaries which workmen would reject with contumely. These things must be changed. If only the truth is presented, this cannot be continued. Pecuniary reward goes too much to the man with physical endurance and plausible tongue, and too little to the man possessed of brain and conscience.

In *THE JOURNAL*, Feb. 14, 1920, p. 474, the London correspondent wrote that the panel physicians had demanded from the government an increase of the capitation fee, claiming that the cost of living had gone up so high that they were unable to get along on the present small capitation fee. A small advance was offered by the government, which the deputation felt bound to its constituents not to accept, and asked for arbitration. The government yielded to the demand for arbitration, but said that it reserved the freedom to institute an inquiry into the question of whether services as good or better could be secured with the same or less expenditure of money under some other system. This is a fair illustration of what contract practice means under government control. The government by the minister of health felt constrained to yield to the demand of the panel (contract) physicians for arbitration of the question of the capitation fee, yet at the same time it reserved the right to see if it could not secure the same services for less money under some other system. Any system that could be devised must include the physician, and if the physician is unable to earn a decent living under existing fees, how could the government expect to get the work done for less money without still further reducing the income of the physician or the amount and character of the medical services rendered? Under the former plan the physician would have to suffer, and under the latter, the patient.

Again, in *THE JOURNAL*, Feb. 28, 1920, p. 615, the London correspondent stated that the minister of health "received a deputation from the British Federation of Medical and Allied Societies with regard to the national insurance act. The deputation came to emphasize the fact that national health

insurance did not permit the insured persons to receive all that the science of medicine had to give, and under the regulations the physician was not able to do the effective work he was willing and anxious to do. . . . The insured public asked for bread and were given a stone. They asked for health and were given regulations which seemed to be chiefly designed to catch the erring physician in some fault. The tendency of the regulations was to impair the efficiency of the health services. . . . The deputation suggested a public inquiry into the working of the act." Does this sound good for compulsory health insurance, when the insured ask for bread and are given a stone, when they ask for health and are given rules and regulations? Do the American people want to introduce into our free form of government a compulsory measure of that kind? Does the medical profession want to place itself in a position in which it must beg the government to permit it to earn enough to live on, or in a position in which the ability to earn a decent living depends on the question of physical endurance rather than brains and conscience? What hope is there for the advancement of medicine when stifled by such laws?

IMPROBABILITY THAT THE SYSTEM WOULD WORK BETTER IN THIS COUNTRY

Any person practicing as a vocation a profession, such as medicine, which requires one to spend so much time and work trying to keep abreast with the progress constantly being made, must possess individualism and freedom of thought and action if he would satisfy his own conscience and bring to his patients the kind of service to which they are entitled.

Contract practice, which has been a part of every compulsory health insurance act up to date, operates in opposition to the physician's success, both from his own point of view and from that of the patient. It is claimed, however, by some of those who favor compulsory insurance that we in America will profit by the mistakes made by those countries that have already adopted such laws. That some of the bad features contained in the acts already in operation in some of the foreign countries might be eliminated seems probable; but it is highly improbable that any system of compulsory health insurance can be devised in which the conditions of medical service and the compensation therefor are under state supervision and control which would not be detrimental to individual and collective medical progress. That the income of a few might be augmented by an insurance act is quite likely; but, as often stated, it is not the advantage of a few but the good of the whole that must be considered. One frequently hears the remark that compulsory health insurance is bound to come sooner or later, just because it has been introduced in other countries. One might as well say that bolshevism or anarchy or Mohammedanism are bound to come, just because they came to other countries. Nothing of this kind is bound to come to a free country that is not the will of the people. The psychologic effect of the frequent repetition of such foolish statements has often led people to do that which they would not have done had they been governed by reason. This is one of the occasions when action should be guided by sound reason and not stampered by psychology.

An attempt has been made to present the subject of compulsory health insurance in an impartial manner. If it has been shown that the scheme is not a desirable one, from the point of view either of the public or of the physician there still remains an important problem. This problem concerns the best method of providing the highest type of medical service to all persons at prices within the reach of all. This is a problem which should be solved by the medical profession itself.

Book Notices

HEART: PAST AND PRESENT. By Edgar Lea, M.D., M.R.C.P., Assistant Medical Officer, Manchester Royal Infirmary. Cloth. Price, \$2.50. Pp. 300. New York: William Wood & Co., 1919.

This is a readable collection of thoughtful essays on heart disease. Nearly a third of the book is devoted to a historical review of cardiology. The development of various views concerning the heart, from the time of Harvey to the present, is briefly set forth by one who is evidently conversant with the subject and who has read and studied Corvisart, Laënnec, Stokes and others, not alone because he thus acquired an important background of knowledge but because he has the pure delight of the bibliophile in reading the authors of the past. Possibly the still fresh war memories may account for the omission of some German and Austrian names like those of Virchow and Skoda, for example; we are sure it is not lack of knowledge. The present status of cardiology is clearly set forth and there is a systematic discussion of the problems that confront us today. Emphasis is laid on the necessity of a more careful study of symptoms and signs and a not too implicit reliance on laboratory methods and instruments of precision. In this way a more accurate diagnosis or prognosis may be attained and a more rational therapy achieved. The work is not intended as a textbook. It is, as the author states, a plea for a more intensive clinical study of the heart. As such it will be found interesting and stimulating.

PRACTICAL PHYSIOLOGICAL CHEMISTRY. For Indian Medical Students and Clinical Assistants. By C. C. Caleb, M.B., M.S., Professor of Physiology, King Edward Medical College, Lahore. Cloth. Price, 6 rupees net. Pp. 252. Calcutta: Butterworth & Co., 1919.

While intended as a laboratory manual for students in physiologic chemistry, this book has some advantage over many other laboratory manuals on the subject in that it is sufficiently complete to be of practical value to the clinician. The commonly used analytic methods are described, the relations of chemical findings to diagnosis are briefly explained, and other useful information is given in a condensed form. The physician who occasionally makes analyses of the body fluids or excretions will find the book helpful.

YOURS FOR SLEEP. By William S. Walsh, M.D. Cloth. Price, \$2.50 net. Pp. 274. New York: E. P. Dutton and Company, 1920.

While not any too scientific, this is a practical book; the author has written a common-sense statement concerning insomnia. Since untroubled sleep presupposes a healthful body and a healthful life, his book resolves itself into a manual of personal hygiene. The final chapter, "Remedies for Sleeplessness," presents no new fad or fancy, but is a sensible discussion of simple time-tried and effective methods. The book can be recommended to sufferers from insomnia, who should read it during the day and not in bed, just before going to sleep. It is not a soporific.

PRINCIPLES AND PRACTICE OF PHYSICAL DIAGNOSIS. By John C. Costa, Jr., M.D., Fourth edition. Cloth. Price, \$4.75 net. Pp. 602, with 225 illustrations. Philadelphia: W. B. Saunders Company, 1919.

In this edition, new matter concerning gas edema, gas pneumonia, influenzal pneumonia and hilum tuberculosis appears under the discussions relative to the lungs and the heart syndrome. New material on the functional capacity of the heart, aviators' heart and sino-auricular block appears under the heading of "The Heart." The clinical relation and physical signs of cecum mobile are dealt with in detail. The book is a standard text of merit.

Kingsport, Tenn., a Rival of Framingham.—Kingsport is starting out to be another "health town," and also under the general supervision of the Metropolitan Life Insurance Company. Periodic physical examinations will be made and follow-up of defects and impairments. Results in these two towns will be compared.

Medicolegal

"The Great Exorcism" and Mental Healing

(*Crane v. United States (U. S.), 259 Fed. R. 480*)

The United States Circuit Court of Appeals, Ninth Circuit, in affirming a judgment of conviction of defendant Crane, says that he was convicted under fifteen of twenty counts for having devised a scheme and artifice to defraud, and to obtain money and property by means of certain false pretenses, and promises, and by means of hypocritical doctrines written and advocated by him, and of using the mails of the United States in carrying out the scheme charged. It was alleged that he was the author of books and other kinds of literature and letters and advertising matter in which he attributed all human suffering, physical or mental, to certain mysterious influences, and that he represented that he possessed supernatural powers, with power to save victims from the influences. The literature was alleged to set forth that the defendant could be called on by night or by day by any one desiring treatment, and the method of treatment was that the party being treated should relax, breathe deeply, and with every outgoing breath say that he was unloading all his care on Arthur Crane; that the party receiving treatment was to take the position that he was breathing out all of his own opinions, desires, and all of his knowledge and possessions, that he knew nothing, owned nothing, wanted nothing and believed nothing; that he was not to resist any unpleasant or evil thought that came to him, but was to let the said Crane do all of the resisting for him, and that he was to know consciously that he was calling Crane and breathing in his alleged perfect vitality and harmony. Before relaxing, the party receiving the treatment was to write to Arthur Crane and tell him the time which he desired for his treatment; that when the treatment was given the party receiving it must accept it freely and with the idea of being benefited without rendering any return to the defendant, who represented that he transmitted the "Christ power," and administered for good and not for profit from the sale of his books. To one man he wrote that he had answered all of the "problems" in the new \$2 edition of his book, "The Great Exorcism," which contained, "among other good things," instructions for healing and relaxing, and which was well worth \$5, and continued: "So if you will send me \$1 toward its price I will give you credit for the \$1 you sent before, and mail you the \$2 book complete. Because I have answered your particular problems in this edition, I feel it is absolutely vital to you to have a copy." Some of his letters referred to money to be sent for treatment as not the defendant's money, but money that must be sent as a gift for his aid in casting out "influences." It was also in evidence that in some of the literature the defendant said he would not charge for his treatments, but the evidence was that in several instances, when a subject or confiding person sought his advice, he would speak of the sacrifice to be made, and then would ask for such giving as the sacrifice warranted. A former employee testified that the system with which the work was carried on was that, after the party had become engrossed in the work, and it was time for a sacrifice, that is to say, if the party had stuck it out long enough and had a proper disposition, he was sure to get a "sacrifice letter." It was elaborately argued that there is "nothing inherently wrong in the theory of mental healing." In a general way that is conceded. The law, however, prohibits a scheme or artifice to defraud by means of false representations, and the use of the mails in executing the purposes of the scheme. One with corrupt purpose may devise a scheme to defraud by employing an alleged mental power to relieve suffering of mind or body, and may use the mails to carry out his corrupt scheme. From the voluminous record containing letters, circulars and oral testimony, it was very clear that the court properly submitted to the jury the question whether the representations made by the defendant were fraudulently

and intentionally false, or were honestly made, or mere errors of judgment. One witness testified that he submitted to treatment for nearly two and one-half months; that sometimes he would go to sleep after treatment and have horrible dreams, such, for instance, as that a she-devil had set a cancer in his legs, and it commenced to eat up his legs past the ankles. He said that he wrote to Crane that he thought the "queen of hell, one of his characters, had charge of the switch board," and that he didn't want any more treatments from him; that the book "The Great Exorcism" described thirteen devils; that the descriptions in the book concerning the various devils upset the witness.

Prescribing and Furnishing Narcotic Drugs Under Minnesota Law

(*State v. Whipple (Minn.)*, 173 N. W. R. 801)

The Supreme Court of Minnesota, in affirming a judgment of conviction of the defendant, a licensed physician, of the violation of Chapter 260 of the Laws of Minnesota of 1915, prohibiting the sale of narcotic drugs, says that the particular charge was that, Jan. 21, 1918, the defendant sold 6 grains of morphin to one Chandler, who was a habitual user of the drug. The defendant admitted that, on this date, he gave to Chandler 6 grains of morphin, and received \$4 from him; but he claimed that he had been treating Chandler since September, 1917, for the drug habit by the gradual reduction method, and that this transaction was a part of such treatment. The evidence on the part of the state was that the defendant sold the morphin to Chandler without any pretense of professional treatment. The trial court instructed the jury that, under the statute, physicians are not permitted by law to sell or furnish to habitual users, out of stocks kept on hand for any purpose, these habit-forming drugs; that all sales and deliveries of such substances to victims of the habit, whether for the purpose of curing the habit or any other object, must be made, if at all, by a pharmacist or druggist, and by him only on a physician's prescription, under the safeguards imposed by law in respect to such sales; that the question whether this particular drug was administered or furnished in good faith or not was not material, and that the statute makes a distinction between the disposal, prescription and furnishing of these drugs to habitual users and to ordinary patients. In the case of patients not addicted, a physician is permitted in the usual course of his practice to prescribe them and also to furnish them. As regards habitual users, the statute first prohibits anybody from either furnishing or prescribing the drug to that class of people. But that is qualified by the permission, in the case of a physician, who in good faith has an addict under treatment for the cure of the habit, to give him a prescription on which he can procure the drug. The physician is forbidden, however, by this statute to furnish the drug himself. The supreme court thinks that the trial court correctly construed the statute. There is a plain difference between "prescribe" and "furnish." To "prescribe" is to give medical direction, to indicate remedies. To "furnish" is to supply or provide. This is the ordinary meaning of these terms. Both words are used, obviously with this distinction as to meaning, in the federal narcotic law of 1915. The context makes plain the intention so to use the words in the Minnesota statute. It was the purpose to require two persons to be concerned in the supplying of narcotic drugs to addicts under the conditions as to publicity which the statute requires in the case of prescriptions. In view of the strict requirements of Section 1, as to the record to be kept by a physician administering the drug to a patient not an addict, it is quite inconceivable that the legislature should have intended that a physician might furnish the drug to an addict without any safeguard or provision for record at all. It was competent, too, for the state to introduce evidence of other sales of morphin to Chandler and of the sale of morphin to other drug addicts, in violation of the statute. Evidence of this character is admissible if it is part of one plan or scheme carried on by the defendant wilfully to violate the law, or if it tends to show an inclination or predisposition to commit the offense charged.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.
Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
Alpha Omega Alpha Honorary Fraternity, New Orleans, April 26.
American Association of Anesthetists, New Orleans, April 26-27.
American Association of Physicians, Atlantic City, May 4-5.
American Association for Thoracic Surgery, New Orleans, May 1.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Psychopathological Assn., Cleveland, O., June 5.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Arizona Medical Association, Nogales, April 16-17.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
California State Medical Society, Santa Barbara, May 11-13.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Maryland, Med. and Chir. Faculty of, Baltimore, April 27-29.
Medical Veterans of the World War, New Orleans, April 26.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson, May 11-12.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
Nebraska State Medical Association, Omaha, May 24-26.
New Hampshire Medical Society, Concord, May 12-13.
North Carolina State Medical Society, Charlotte, April 20.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

ANNUAL CONFERENCE ON PUBLIC HEALTH AND LEGISLATION

Held under the auspices of the Council on Health and Public Instruction of the American Medical Association, March 4, 1920

(Concluded from page 975)

Health Education in the Public Schools—Thirty Years' Experience in Michigan

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: The State Board of Health of Michigan was the second state board of health provided for in this country. The first was in Massachusetts. It is interesting to know that the creation of the Michigan State Board of Health was due to the large number of accidents from the explosion of kerosene lamps, and the discussion at that time about arsenical paper.

In 1865, Villemin, a French army surgeon, experimented with transmission of tuberculosis. On the work of Villemin published in 1868, the Michigan State Board of Health started to preach to the people of Michigan that tuberculosis was a transmissible and preventable disease. It did so by holding sanitary conventions. We started out with four conventions a year, each one in different parts of the state teaching that tuberculosis and various other diseases were transmissible and therefore preventable.

In 1895 a bill was framed and passed by the legislature compelling teaching on the manner of transmission of diseases in every grade in every school in Michigan, from the primary grades to the university. I think the passage of that law was the most effective work we ever did. This bill was modified in 1897, and is now a fairly effective law. In 1911 the legislature allowed us by a unanimous vote an appropriation of \$100,000 to continue demonstration work in tuberculosis in Michigan. We have had a relatively low death rate from tuberculosis; we are going to have a higher

death rate because many of our cities are being crowded, especially the larger ones, by an ignorant foreign population. Our death rate has been about one half of what it has been in the New England states, but that is not altogether due to the educational movement. In this work it is essential to reach the children.

Health Education and Activities in Colleges and Universities

DR. JOHN SUNDWALL, Minneapolis: A university health service is concerned with physically sound students—both in the attainment of positive health and in the continuance of his health during the academic and postacademic life. Related activities of a university health service are: protection of the sound student from communicable diseases; detection, isolation, and provision for the treatment and care of all students suffering from communicable diseases; advice, treatment and, when necessary, care of all students who are ill; early detection and correction, so far as possible, of beginning bodily disorders, such as the degenerative diseases, and correction, so far as possible, of defects in subnormals by advice regarding proper exercise and right living and, when advisable, by treatment. These objects are reached through the personal division of a university health service. The division of sanitation must concern itself with sanitary conditions both on and off the campus. Campus buildings, coming houses and boarding houses must be inspected and regulated so far as possible. Finally, the health service should accentuate the required hygiene instruction by practical application to student life, and by additional educational methods, such as bulletins, posters and placards relative to health promotion and disease prevention, "patent medicines," etc.; and by use of the student daily paper and other publications in dissemination of health information. Through properly conducted work in physical education, through a required hygiene course, through health services and through medical schools and schools of public health, our colleges and universities can educate the citizens and train the health leaders of our country, thus assuring for the future the national health and vigor fundamental to national security, growth and permanence.

Health Education: A Function of Municipal Health Departments

DR. HAVEN EMERSON, New York: In order to carry out education, one must have something to say and some one to say it to, and a susceptibility or receptivity in the audience appropriate to the matter in hand. Certain groups may always be considered as educable in health subjects: children because of their age; mothers because of their children, and the sick and their immediate associates because of their temporary need. Beyond school age, the interest in health for most adults is a negative quality and cannot be relied on to provide an audience for the written or spoken word, except under pressure of fear, selfishness in self-protection, or self-interest in the betterment of employees.

In the United States, with rare exceptions, health education cannot be applied to the population of whole states without risk of inappropriateness, because of the striking dissimilarity in geologic, geographic, racial, educational, occupational and morbidity setting of the groups to be reached. Health is personal. Health education must be personal, as nearly as conditions permit. The nearer the government is to the lives of the people, the stronger will be public interest in the quality of its public servants. Without health education a community is ill served by its civil government. The municipal government is entitled to the strength which public interest will give to its health administration. The public is entitled to the kind of information which is as nearly personal and appropriate to the local unit, the household, the family, as can be attained. Health education is and must always be a function of municipal health departments.

Health Education: A Function of State Departments of Health

DR. W. S. RANKIN, Raleigh, N. C.: From the point of view of a state department, health education has to do largely with the adult population. The state health depart-

ment, if it would be successful, must constantly strive to disseminate knowledge of health, and in such a manner that the public which it seeks to serve is sufficiently interested to make use of the knowledge imparted. The success of a health department may be definitely measured. Is the death rate reduced? Is there less sickness from preventable diseases? The answer to these two questions shows the value of the public health work done. If the answer is to be affirmative, the people must be reached with the message of health and disease prevention. Present efforts toward health education by state departments of health are heavily handicapped by the expense involved. Appropriations for health departments vary greatly. Some receive barely sufficient to maintain an office and carry on merely the minor duties of such a department. There is much lost motion and duplication of effort. Each state department is attempting to do what the others are going. The result is an unnecessary increase in personnel, a waste in time and money, and less effective methods. The solution is standardization and centralization of a large part of this work. Methods of health education may be divided into those applicable to all states and which therefore should be standardized and centralized, and those which deal with individual state problems.

The most important are the methods by which personal hygiene may be taught to the individual. There are two methods of educational work that must continue largely a product of each state and which must possess individuality, as each would lose in proportion as it became stereotyped in form or lacking local color. These are the monthly health bulletin and the press service, both of which are utilized by nearly every health department of the country. A health department must recognize health education as a primary function. The means of performing this function are many and varied. To get the best possible results, no single department can hope to utilize effectively all the means which are at hand. There must be cooperation, which will standardize materials and eliminate much of the present expense and lost motion.

Health Education a Function of the Federal Government

DR. CHARLES F. BOLDUAN, Washington, D. C.: There is a limitation to the activities of the federal authorities. We should devote a great deal of attention to health education among schoolchildren and adults, but should not concentrate on children alone. Childhood impressions are very lasting. A large part of our program should deal with the education of schoolchildren so far as the work of the federal departments is concerned, and this field will come largely under the United States Bureau of Education, a department of the interior. The Public Health Service should be a national clearing house for all matters relating to public health education, and should maintain a supply depot in which can be collected pamphlets, exhibits, etc. We might establish and operate a bureau of information on health administration which would have on hand information concerning administrative methods in all the various states and communities, so that the health officer would not have to send out questionnaires, but would have this material at hand. The Public Health Service in the past has done some work along that line. We published some years ago a digest of health laws enacted by state and local health authorities, and in that way we tried to meet a part of the need, but that has only been going on in a small way. Another activity we can undertake is the preparation of material for a standard monthly health bulletin. At present there is an enormous duplication of effort there. Another activity is the preparation and publication of a health column in our newspapers. For the last six months we have been doing this, and it has proved of great value. In connection with this health column we conduct a question and answer feature. The number of questions that come in is surprising. Still another activity would be the preparation of press bulletins of family interest. If you can send newspaper material in the form of stereomats they will use them. These stereomats are inexpensive. The Public Health Service should maintain a photographic department so that we can supply to state and local health officers pictures with which to illustrate various phases of

health work. We should also maintain a motion picture department, which is one of the great needs at the present time.

DISCUSSION

DR. JOHN M. DODSON, Chicago: As to the question of rejections in our selective service experience, referred to by Dr. Sundwall, I do not think the percentage of rejections when analyzed at all demonstrates that we are a degenerate nation physically. On the whole, it was a respectable showing. While it is true that many of the causes of rejection were due to lack of proper hygiene and sanitation, if we had only had universal military training, or universal physical culture which goes with military training, we should have escaped most of these fallacies.

As chairman of the Subcommittee on Health Problems in Education, cooperating with the National Education Association, I feel that our hope for the future largely lies in the education of the young. Personal hygiene is a matter of habit. Habits are formed early, and once formed they are not easily broken or changed. Therefore, our hope for the future and for permanent good lies in the education of the children and the inculcation in them of proper habits. For this reason I think one of the most worthy things that this Council on Health and Public Instruction has ever done was when, at the Los Angeles session in 1911, it approached the great body of public school teachers in this country (the National Education Association) and enlisted their keenest interest in health problems in the public schools.

PROF. W. B. OWEN, Chicago: We have reached a most opportune time for the introduction of health education in schools. The war has made us consider very carefully the content and material of our education. If the war had gone on longer, there would have been left in our educational progress some of the things that were coming in very rapidly, and each one different because of lack of cooperation and support, or the withdrawal of leadership of the national government. One of these is food. The food administration put into the schools a course on foods, and it is a great pity that it was stopped. They had the material in such form that it could be used, and the teachers were learning how to teach it, and the children were interested in it, and it went from the schools to the homes and from the homes back to the schools. The evidence is undisputable. Every one is coming to recognize that one of the fundamental new objectives laid down in our public education is health. Every one is trying to put thrift into the public schools at the present time. Buying economically and intelligently is a vital question, and if you combine the matter of selecting foods for health purposes, one can readily see how the whole thing would work together in a common program. In order to do this we must have the assistance of competent people to lay out a course and teach this course to teachers who are going to go into the schools.

DR. W. E. FORSYTHE, Ann Arbor, Mich.: The development of health service in colleges and universities is like other phases of public health work of recent origin. Some of the older universities, like the University of Virginia, have been taking care of their students' health for many years. The University of Virginia is probably the oldest in the development of a well-rounded service for the health of its students. The University of Michigan started this movement in 1913. We first began to care for sick students, and I regret to say that has been the main work in most places. Now attention in health matters is given to the well. There is difficulty sometimes in convincing the deans of various departments that this is important, so that we have to educate our educators in this work in our institutions. It is encouraging to have this program adopted for secondary schools, as it will stimulate our higher educational institutions to prepare teachers properly to meet this need. The great help we have had has been cooperation of the governor in the work of the Interdepartmental Social Hygiene Board.

DR. BURTON D. MEYERS, Bloomington, Ind.: We organized a department of hygiene in the Indiana University last year under the auspices or support of the United States government. We have had a required course for freshmen for about ten years, and it has been of tremendous value in developing

better health conditions. We require those training for the teaching profession to take lectures in hygiene and work in physical training.

DR. JOHN DILL ROBERTSON, Chicago: We have in the public schools of Chicago little mothers clubs in which pupils of the sixth, seventh and eighth grades attend lectures on the rudiments of home nursing and public health work. A large part of the publicity of printed material is wasted. It never goes over, and a great deal of the lecture work never goes over. We have what we call the Chicago Public Health Association. Students of the sixth, seventh and eighth grades are required to attend seventeen meetings each month. In order to be sure that the students grasp the lectures, a digest of each lecture is handed to the pupils as they pass out the door, and they write an essay on it and present it to all the pupils in their rooms. We have established a Chicago Training School for Home and Public Health Nursing, and since August, 4,000 Chicago housewives have attended this course. It was done primarily for the purpose of preparing women to take care of sick people in times of an epidemic, such as influenza or pneumonia. About the time the epidemic of influenza started we had 2,160 who had attended the course of forty-eight lectures. We also established a public health education course, and 3,046 women have now some conception of what we are trying to do in health education work.

DR. HAVEN EMERSON, New York: I have been responsible since October for one of the things developed in the Interdepartmental Social Hygiene Board, a compulsory course in hygiene attended by 2,500 students of Cornell University. The students attend these lectures once a week. They have two medical examinations. This is required of all students in the university throughout the year or short term. The education that comes from medical examination and conferences or consultations is of more value than didactic teaching.

COL. JAMES C. GREGORY, Chicago: In reference to what was said about the draft examination, of approximately 4,000,000 men examined, about 60 per cent. had physical defects. Had these examinations been made by thoroughly trained men, more defects would have been found. Twenty-nine per cent. were rejected, and of that 29 per cent., 39 per cent. were rejected for mechanical defects, such as flatfoot, hammer toe, hallus valgus, deformed fingers and stiff joints. A large percentage of these difficulties could have been remedied had the men been examined and properly treated during their younger days. Ten per cent. of the rejections were due to undeveloped and metabolic conditions, narrow chests, under height, etc. Ten per cent. were due to sensory disturbances, such as defective hearing, defective vision and conditions of the throat. Three per cent. were rejected as a result of deficient or defective teeth. Ten per cent. of rejections were due to cardiac disturbances. A large number of these cases of cardiac disturbance were the result of defective teeth and enlarged tonsils. I do not see any better way than to start with the schools and with lectures from the teachers to the children, teaching them the elementary principles of hygiene, how to keep themselves healthy, and to grow up as physically fit as possible.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: One of the most instructive things that came out as the result of the examinations of men during the war is the distribution of the unfit. Pennsylvania, with its large foreign population, had a much larger percentage of unfit than Alabama or Georgia, with a large negro population; in other words, the negro is more fit physically than the average man in Pennsylvania.

DR. W. F. DRAPER, Washington, D. C.: The Public Health Service, in cooperation with the State Board of Health of Virginia, made an arrangement with counties in which no previous health work has been done, whereby the county pays \$1,000 and receives \$1,000 from the state for a full-time sanitary administrator, who takes up the problems relating to rural sanitation, proper disposal of waste, proper protection of water supply, etc. We are trying to secure three results namely, to have the towns sanitated; to get sanitary toilets and a pure water supply in every county, and to reach as many homes as possible. The results of this work have been very gratifying.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Annals of Medical History, New York

1919, 2, No. 2

- House Surgeon's Memories of Joseph Lister. St. C. Thomson, London.—p. 93.
Oxford Physic Garden. D. Power, London.—p. 109.
Modern Commentaries on Hippocrates. J. Wright, Pleasantville, N. Y.—p. 126.
Rise and Early History of Clinical Teaching. D. Riesman, Philadelphia.—p. 136.
Napoleon's Camp at Boulogne. Reginald Fitz, Boston.—p. 148.
William Osler; The Man. H. Cushing, Boston.—p. 157.
Sir William Osler, the Tribute. H. A. Kelly, Baltimore.—p. 168.
Osler's Influence on Medical Libraries in the United States. John Ruhräh, Baltimore.—p. 170.
Sir William Osler's Contribution to Medical Literature. F. H. Garrison, Washington.—p. 184.
Presentation to Sir William Osler.—p. 188.

Archives of Dermatology and Syphilology, Chicago

March, 1920, 38, No. 3

- Causes of Reactions Following Intravenous Injections of Arsphenamin and Neoarsphenamin. J. F. Schamberg, J. A. Kolmer, G. W. Raiziss and C. Weiss, Philadelphia.—p. 235.
Neurotic Excoriations. G. M. MacKee, New York.—p. 256.
Neurotic Excoriations; Report of Cases. W. A. Pusey and F. E. Senear, Chicago.—p. 270.
Venereal Ulcer. G. M. Olson, Minneapolis.—p. 279.
Two Cases of Idiopathic Hemorrhagic Sarcoma (Kaposi); The First Complicated with Lymphatic Leukemia. H. N. Cole and E. S. Crump, Cleveland.—p. 283.
Osseous Formation in Lupus Erythematosus. W. B. Trimble, New York.—p. 296.
Camphor Oil Tumors. W. H. Mook and W. G. Wander, St. Louis.—p. 304.

Causes of Reactions Following Intravenous Injections of arsphenamin and Neo-Arsphenamin.—The ingenious theory advanced by Danysz that intravascular precipitation of the organic arsenicals is the cause of the reactions (particularly the nitroid reactions) after intravenous injection, the authors claim, is true in part only. It explains the well known precipitation of solutions of acid arsphenamin and probably also concentrated solutions of monosodium arsphenamin (i. e., arsphenamin neutralized to the point of clearing). There is no adequate evidence, however, that precipitation occurs after the use of disodium arsphenamin (hyperalkaline solutions), and there is no evidence at all that neo-arsphenamin is ever precipitated in the blood. Experiments carried out by Schamberg et al. indicate that the phosphates of calcium, magnesium, sodium and potassium in the concentrations in which they normally occur in the blood, do not precipitate alkaline solutions of arsphenamin and neo-arsphenamin in vitro, either when tested alone or in the presence of the other organic or inorganic constituents of the blood. They believe that if arsphenamin is properly neutralized, that is, if the disodium and not the monosodium arsphenamin is injected, precipitation in vitro can scarcely take place. The fact that arsphenamin is hemolytic in practically all of the concentrations in which it is employed, and that neo-arsphenamin is not hemolytic, except in very dilute solutions (0.9 gm. in 180 c.c. of water) or in extremely concentrated solutions (0.9 gm. from 2 to 3 c.c.) sheds a degree of illumination on the relative manner in which these drugs are clinically tolerated. Another fact of importance is the hydrogen-ion concentration of these two compounds. The hydrogen-ion concentration of neo-arsphenamin is 7.0 to 7.4, which is approximately that of the blood. That of acid arsphenamin is 4.7, while the alkaline solutions are beyond 9. The injections of acid solutions of arsphenamin are prone to produce death, or if less concentrated, may lead to the development of a bronchopneumonia as a result of intravascular precipitation of the drug. Concentrated monosodium arsphenamin solutions may, under certain conditions, likewise cause death, in the event of recovery cause an embolic bronchopneumonia. The authors have no knowledge that pneumonic symptoms have ever developed after the use of disodium arsphenamin, nor after the use of neo-arsphenamin. Nitritoid reactions may, at times, follow the injection of a clear solu-

tion of neo-arsphenamin. The authors believe the cause to be traces of an unidentified impurity which for purposes of convenience and easy reference they designate substance X.

Neurotic Excoriations.—The term neurotic excoriations is limited to traumatic lesions produced by a person without intent to deceive. At times, the excoriation may be produced by the habit of picking at every slight elevation of the skin. This picking or digging may be quite unintentional and, in mild cases, it is limited to an unconscious habit of passing the hand over the face (and the scalp, if bald) while deeply absorbed in study, locating a little follicular plug and digging with the finger nail until an excoriation is effected. In the same way, the reparative crust is repeatedly removed, healing is retarded and the lesion may persist for weeks or months, becoming, perhaps, indurated or infected, and finally, when left alone, disappearing spontaneously, often with scar formation. The question of diagnosis—differential diagnosis—is important. The illustrative cases reported by MacKee show that neurotic excoriations may markedly simulate syphilis, tuberculosis, radiodermatitis, dermatitis herpetiformis, acne varioliformis, and other dermatoses. Care also must be taken to differentiate clearly between neurotic excoriations and malingering, and to exclude excoriations produced in attempts to relieve severe itching by individuals who are not neurotic.

The cases reported by Pusey and Senear, are essentially of the same character as the cases of neurotic excoriations reported by Fox and Wilson.

Veneroid Ulcer.—Veneroid ulcer or the ulcer of Welander is a disease characterized by the appearance of ulcers about the vulvae of girls or women who have not been exposed to venereal disease. The general appearance of veneroid ulcer is strikingly similar to that of chancroid and chancre. The disease is self-limited, healing under indifferent treatment in about one month. The scars left after healing are typical. They are superficial, round or oval, with slightly raised edges. Olson reports one case.

Idiopathic Hemorrhagic Sarcoma.—Two cases of the idiopathic hemorrhagic sarcoma of Kaposi are reported by Cole and Crump, occurring in a Russian Hebrew, aged 66, and in an Italian, aged 56. In the first case, the disease was of five or six years' duration; in the other case, of twenty years' duration. In Case 1, the patient developed a lymphatic leukemia in the course of his disease, but throughout the disease his cutaneous lesions showed the histologic characteristics of hemorrhagic sarcoma of Kaposi; i. e., the formation of new blood vessels in the corium, perivascular infiltration with small, round cells, plasma cells and spindle cells, and with a marked infiltration of the tissue with blood pigment, consisting of hemosiderin. Experimentally, the authors were unable to transmit the disease to cats, white rats, to guinea-pigs and to rabbits.

Camphor Oil Tumors.—The six cases reported by Mock and Wander seem to indicate that it is dangerous to use mineral oil as a vehicle for any remedy to be injected into subcutaneous tissue. This fact has been well established in regard to paraffin injections, and the tumors resulting from the injection of camphor oil incorporated in a mineral oil strengthens the conclusion.

Annals of Surgery, Philadelphia

February, 1920, 71, No. 2

- *Oxycephaly: Report of Two Cases. S. H. Watts, Charlottesville.—p. 113.
*Surgical Treatment of Cysts of Thyroglossal Tract. W. E. Sistrunk, Rochester, Minn.—p. 121.
*Stone in Kidney. C. H. Mayo, Rochester, Minn.—p. 123.
*Results of Operations for Removal of Stones from Ureter. E. S. Judd, Rochester, Minn.—p. 128.
*Tuberculosis of Appendix. M. Warwick, Minneapolis, Minn.—p. 139.
*No Surgical Appendicitis without Organic Stricture. M. Pitzman, St. Louis.—p. 149.
Advantages of Mikulicz Two-Stage Operation of Partial Colectomy. C. N. Dowd, New York.—p. 155.
Anatomic Considerations in Rectal Prolapse of Infants. T. W. Todd, Cleveland.—p. 163.
*Sarcoma of Prostate. F. C. Herrick, Cleveland.—p. 168.
*Abscess of Prostate. A. Randall, Philadelphia.—p. 172.
Cervical Erosions. P. J. Reel, Columbus.—p. 178.
Treatment of Nonunion in Compound Fractures. DeF. P. Willard, Philadelphia.—p. 182.

Dislocation of Tarsal Scaphoid: Double Fracture of Ischiatic Tuberosities. W. D. Haines, Cincinnati.—p. 187.
Suture of War Wounds. D. Hinton, Philadelphia.—p. 191.

Oxycephaly.—This paper was abstracted in THE JOURNAL, Jan. 17, 1920, p. 201.

Surgical Treatment of Cysts of Thyroglossal Tract.—In 86,000 consecutive patients examined in the Mayo Clinic, only thirty-one cases of thyroglossal cysts were found. Eighteen of these were in males and thirteen in females. The cysts appeared at all ages from birth to 53 years, the majority being noted in patients between the ages of 20 and 25 years. In twenty-five of these patients the cyst was found in the midline of the neck, near the hyoid bone.

Stone in Kidney.—This paper was abstracted in THE JOURNAL, Jan. 17, 1920, p. 200.

Results of Operations for Removal of Stones from Ureter.—This paper was abstracted in THE JOURNAL, Jan. 17, 1920, p. 200.

Tuberculosis of Appendix.—Of 210 appendixes, only two, or approximately 1 per cent., were found tuberculous. Warwick cites a case in which the tuberculous appendix was the first definite evidence of the probable existence of other tuberculous lesions. The necropsy showed clearly that the primary lesion had resided for some time in the apexes of the lungs. An acute exacerbation of these lesions followed ulceration of the intestines and invasion of the appendix.

No Surgical Appendicitis Without Organic Stricture.—Pitzman claims that attacks of acute suppurative appendicitis are brought on by complete closure of a preformed stricture. The inflammation, eventually gangrene, is due to the action of the bacteria normally present in the locked-up feces. The true chronic appendix also has a stricture, which, however, is patent during intervals between attacks.

Sarcoma of Prostate.—Herrick analyzes sixty-two cases recorded in the literature.

Abscess of Prostate.—Sixteen cases of abscess of the prostate are cited by Randall in support of his belief that any infection of a pus forming character is, ipso facto, of gonorrheal origin. Eight cases were clinically diagnosed as prostatic abscess, secondary to an active gonorrhea arthritis. In the second group of eight cases, gonorrhea played no antecedent rôle. In two cases *B. coli* was the infecting organism, and in a similar number *Staphylococcus pyogenes-aureus*.

Boston Medical and Surgical Journal

March 18, 1920, 182, No. 12

Ether Day Address. Traditions, Standards and Prospects of the Massachusetts General Hospital. R. C. Cabot, Boston.—p. 287.

Specific Treatment of Hay-Fever. F. M. Rackemann, Boston.—p. 295.

*Case of Tumor of Sacrum. J. E. Goldthwait, Boston.—p. 301.

March 25, 1920, 182, No. 13

Development of Modern Infant Feeding: Influence on Present Teachings. L. W. Hill, Boston.—p. 311.

Anesthesia in Obstetrics. P. Appleton, Providence, R. I.—p. 321.

Tumor of Sacrum.—In the case cited by Goldthwait, a hard mass covered the whole anterior part of the sacrum and projected from an inch to an inch and one half into the pelvis. The swelling over the posterior part of the sacrum was not hard and did not obscure the general bony landmarks. The roentgen ray showed up the destruction of a large part of the central portion of the sacrum. In the light of the history of an evidently long continued condition with extremely good general function, it being possible for the patient to walk about with apparent ease, it was considered inadvisable to operate, and a support for the pelvis was planned to relieve the joints of the pelvis from the strain, and planned also to correct the unnatural forward inclination of the pelvis. This support was applied. The patient has been able all of the time to carry on a drug store business. She tired more easily than would be normal, but with two or three short periods of rest in the course of a day, together with a belt to give reasonable support about the pelvis and low back, it has been possible for her to keep about with apparently no increase of the difficulty and, on the whole, increasing general strength.

Bulletin of Johns Hopkins University, Baltimore

February, 1920, 31, No. 348

*Experimental Pneumectomy. G. J. Heuer and G. R. Dunn, Baltimore.—p. 31.

*Effect of Arteriovenous Fistula on Heart and Blood-Vessels. An Experimental and Clinical Study. M. R. Reid, Baltimore.—p. 43.

Biological Classification of Influenza Bacilli. T. M. Rivers, Baltimore.—p. 50.

Experimental Pneumectomy.—In twenty-three dogs on which total pneumectomy was practiced by Heuer and Dunn, there were thirteen recoveries and ten deaths. The fatalities occurred in from four days to two months after operation. Six of the deaths were due to an epidemic of distemper which swept through the kennels. The necropsy examinations in this group did not show a single instance of infection of the parietal wound or pleura or leakage from the bronchial stump. One animal died of a simple pneumonia unassociated with other evidences of distemper. At the necropsy there was no infection of the parietal wound or pleura or leakage from the bronchial stump. One animal died apparently from starvation, two months after operation. At the necropsy there was a remarkable degree of emaciation, but no other assignable cause for death. There was no infection of the parietal wound or pleura or any leakage from the bronchial stump. In one of these the failure to secure an adequate closure of the bronchial stump was intentional. In the other a necrosis of the bronchial wall followed the application of an intentionally flattened (not rolled) metal band.

Effect of Arteriovenous Fistula on Heart and Blood Vessels.—A report of experimental work on dogs is made by Reid, and fourteen clinical cases of arteriovenous fistula are reported in abstract. A study of the clinical cases reveals that the artery was observed to be dilated proximal to the fistula in five instances. In seven of the cases the histories do not comment on the size of the artery. In one case in which the fistula had been present for only three months, the artery was not dilated. In patients in whose history no mention is made of the size of the artery, the arteriovenous fistula was intracranial in three, in the hand in two, between the occipital vessels in one, and in femoral region in one. All the femoral arteriovenous fistulas, except two of three and four months' duration resulted in a proximal dilatation of the artery. This dilatation may extend as far as the heart. Marked cardiac disturbances may result from an acquired arteriovenous fistula of long standing. They are hypertrophy and dilatation with eventual cardiac decompensation. The wall of the vein involved in an arteriovenous fistula becomes hypertrophied. Although the vein on the proximal side of the fistula does not increase markedly in size, its wall shows a greater increase of elastic tissue than the wall of the vein distal to the fistula. The venous blood pressure is increased in the part of the body distal to an arteriovenous fistula. When the fistula is cured the pressure returns to normal.

Colorado Medicine, Denver

March, 1920, 17, No. 3

Control of Cancer. P. Hillkowitz, Denver.—p. 56.

Case of Reconstructive Surgery of Face. T. G. Maghee, Lander, Wyo.—p. 60.

Vaccine Therapy in Pertussis. G. M. Blickensderfer, Denver.—p. 62.

Tuberculosis in Army. G. H. Chattermole, Boulder.—p. 66.

Illinois Medical Journal, Oak Park, Ill.

March, 1920, 37, No. 3

Etiology of and Prophylactic Inoculation in Influenza. E. C. Rosenow, Rochester, Minn.—p. 153.

Early Symptoms of Cancer. J. C. Bloodgood, Baltimore.—p. 155.

Lessons from One Hundred Gallbladder Operations. W. F. Grinstead, Cairo, Ill.—p. 156.

Submucous Operations. O. Tydings, Chicago.—p. 159.

Acute Mastoiditis. R. T. Tivnen, Chicago.—p. 162.

Résumé of Year's Work with Radium. C. W. Hanford, Chicago.—p. 168.

Treatment of Infected Wounds with Reference to Carrel-Dakin Method. W. Fuller, Chicago.—p. 173.

Certificates of Birth and Death. H. B. Hemenway, Springfield.—p. 181.

Need of More Laboratories. M. Dupray, Springfield.—p. 185.

*Trichomonas Vaginalis Vaginitis. J. B. DeLee, Chicago.—p. 186.

Eye Involvements Following Focal Infection. E. R. Crossley, Chicago.—p. 187.

Recent Developments in Peripheral Nerve Surgery. H. A. Beam, Moline.—p. 189.
Artificial Bilateral Pneumothorax. W. R. Abbott, Springfield.—p. 192.
Chronic Back Trouble. E. L. Cooley, St. Louis.—p. 195.
Suggestions About Community Mental Health Departments Under State Management. S. D. Wilgus, Rockford.—p. 199.
Clinical Problems Relating to Chronic Suppurative Diseases of Middle Ear. G. E. Shambaugh, Chicago.—p. 203.

Trichomonas Vaginalis Vaginitis.—De Lee states that in cases of this type the patient complains of obstinate vaginal discharge, pruritus, sleeplessness, burning, general weakness and of being "run down." The vulva is reddened, the vagina is moist, and often rough like a nutmeg grater; sometimes there are minute hemorrhages in the vaginal epithelium. The cervix is sometimes affected. The discharge is profuse, excessive, mucopurulent, thin, bubbly, acrid and with a disagreeable odor. Its irritating character is shown by the excoriation of the skin, and especially in fat women there is an obstinate foul smelling intertrigo. Sometimes there are pigmented condylomas. Diagnosis is easy. The clinical appearance of the vagina will suffice, but examination of the vaginal discharge under the microscope will confirm it. As for treatment: On the morning of the first day the vagina and vulva are scrubbed vigorously with tincture of green soap and water, using a rough cloth and going most thoroughly into every fold and crevice. The soap is then rinsed out with sterile distilled water. The process is repeated three times, then a 1:1,500 mercuric chlorid douche is given with friction, every fold and crevice being washed. This is then washed out with sterile distilled water. The patient rests in bed. Next morning the vagina is again washed out with green soap and sterile water. Then it is packed with cotton soaked with glycerin (4 ounces) and sodium bicarbonate (1 ounce). The folds and crevices of the vagina are packed with the cotton and the vulva is smeared with the mixture. Next morning the tampon is removed and a sterile water douche is given. The following morning the secretion is examined under the microscope for trichomonads. Usually they are gone.

Journal of Biological Chemistry, Baltimore

March, 1920, 41, No. 3

Nutritive Value of Proteins of Barley, Oat, Rye and Wheat Kernels. F. B. Osborne and L. B. Mendel, New Haven.—p. 275.
Effect of Chlorin Substitution Products of Methane Acetaldehyde, and of Sodium Acetate on Catalase Production. W. E. Burge and E. L. Burge, Urbana.—p. 307.
Improved Volumetric Pump for Continuous Intravenous Injections. R. T. Woodyatt, Chicago.—p. 315.
Biochemistry of Acetone and Butyl Alcohol Fermentation of Starch by Bacillus Granulobacter Pectinovorum. H. B. Speakman, Toronto.—p. 319.
Determination of Chlorids in Whole Blood. J. H. Austin and D. D. Van Slyke, New York.—p. 345.
Experiments on Utilization of Calcium of Carrots by Man. M. S. Rose et al, New York.—p. 349.
Effects of Feeding with Calcium Salts on Calcium Content of Blood. W. Denis and A. S. Minot, Boston.—p. 363.
Simplified and Improved Method for Determination of Sugar in Blood. D. Folin and H. Wu, Boston.—p. 367.
Distribution of Basic Nitrogen in Phaseolin. A. J. Finks and C. O. Johns, Washington, D. C.—p. 375.
Studies in Nutrition. II. Role of Cystine in Nutrition as Exemplified by Nutrition Experiments with Proteins of Navy Bean, Phaseolus vulgaris. C. O. Johns and A. J. Finks, Washington, D. C.—p. 379.
Studies in Nutrition. III. Nutritive Value of Commercial Corn Gluten Meal. C. O. Johns, A. J. Finks and M. S. Paul, Washington, D. C.—p. 391.
Equilibrium Between Oxygen and Carbonic Acid in Blood. L. J. Henderson, Cambridge, Mass.—p. 401.
Fermentation of Fructose by Lactobacillus Pentoaceticus, n. sp. W. H. Peterson, and E. B. Fred, Madison, Wis.—p. 431.
Nutritive Factors in Plant Tissues. III. Distribution of Water-Soluble Vitamin. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 451.

Nutritive Value of Proteins of Barley, Oat, Rye and Wheat Kernels.—The growth of rats on diets essentially comparable, except in respect to content and source of the cereal proteins obtained therein, show the possibilities of nutrition when one of the four commonly used cereal grains furnished protein.

Determination of Chlorids in Whole Blood.—A modified technique for whole or laked blood is described by Austin and Van Slyke in which the precipitation and removal of the silver precede the addition of the silver.

Utilization of Calcium of Carrots by Man.—Two series of experiments to determine the utilization of the calcium of carrots by the human body were carried out by Rose on four healthy young women. The calcium intake was in every case close to the estimated minimum for equilibrium. In all cases but one there was a positive calcium balance on the carrot diet, and in this case the loss was small. When approximately 55 per cent. of the calcium was derived from carrots, one subject had practically the same retention as on a diet in which 70 per cent. of the calcium was derived from milk. It seems possible, therefore, to meet the requirement of the adult human organism for calcium largely, if not wholly, from carrots.

Effects of Feeding Calcium Salts.—The result of a study of the effect of the administration of calcium salts by mouth to men, cats and rabbits, made by Denis and Minot, indicates that in most cases it is impossible to increase the concentration of calcium in the plasma by ingestion of calcium salts, but that in cats and rabbits, in which the initial concentration is low, it is sometimes possible to greatly increase the amount of calcium in plasma by feeding salts of this element.

Determination of Magnesium in Blood.—The procedure described by Denis consists of the removal of organic material contained in the filtrate from the calcium determination, the precipitation of magnesium as magnesium ammonium phosphate, and the nephelometric determination of the phosphate in this compound by the reagent of Pouget and Chouchak.

Simplified and Improved Method for Determination of Sugar in Blood.—Folin and Denis have replaced their regular phenol reagent by a reagent which reacts with cuprous copper, in acid solution, yet gives no color with phenols.

Nutritive Value of Commercial Corn Gluten Meal.—The authors found that commercial corn gluten meal, supplemented by dried brewers' yeast, whole ground yellow corn, or coconut press cake, furnishes the necessary protein for normal growth. Eighteen per cent. of whole, ground, yellow corn meal furnishes sufficient water-soluble vitamin for normal growth.

Equilibrium Between Oxygen and Carbonic Acid in Blood.—Henderson endeavors to explain the interaction between oxygen and carbonic acid in blood by means of the theory of acid base equilibrium.

Journal of Experimental Medicine, Baltimore

March 1, 1920, 31, No. 3

***Pneumococcus Cultures in Whole Fresh Blood. Retardative Effect of Blood of Immune Animals and Mechanism of Phenomenon.** C. G. Bull and L. Bartual, Baltimore.—p. 233.
***Production of Specific Antiserums for Infections of Unknown Cause.** P. Rous, G. W. Wilson and J. Oliver, Baltimore.—p. 253.
***Deterioration of Crystalline Strophanthin in Aqueous Solution.** R. L. Levy and G. E. Cullen, Baltimore.—p. 267.
Giant Centrospheres in Degenerating Mesenchyme Cells of Tissue Cultures. W. H. Lewis, Baltimore.—p. 275.
Formation of Vacuoles Due to Bacillus Typhosus in Cells of Tissue Cultures of Intestine of Chick Embryo. M. R. Lewis, Baltimore.—p. 293.
***Appearance of Isoagglutinins in Infants and Children.** W. M. Happ, Baltimore.—p. 313.
***Effect of Feeding Pineal Body on Development of Albino Rat.** W. R. Sisson and J. M. T. Finney, Jr., Baltimore.—p. 335.

Pneumococcal Value of Whole Fresh Blood.—It is maintained by Bull and Bartual that the whole uncoagulated blood of immune animals is not as highly pneumococcal in vitro, as has been claimed. Cultures of pneumococci in the fresh whole blood of immune animals, as compared with cultures in the blood of susceptible animals, show a greatly prolonged latent period, and, in a general way, the relative lengths of the latent periods of the cultures correspond to the relative resistances of the animals to infection by these organisms. The blood of animals artificially immunized, both actively and passively, retards the growth of pneumococci in the same manner as the blood of naturally immune animals. The retardation of multiplication depends on two factors, opsonization of the pneumococci by the immune serum, and phagocytosis of the organisms by the polynuclear cells; growth readily occurs when either agent is absent.

Pneumococci multiply in defibrinated immune blood because few phagocytes are present after defibrination. Pneumococci grow in the most potent immune blood after mechanical destruction of the white cells. It was not determined that immune blood does not kill a certain number of the pneumococci with which it is inoculated, but the tentative conclusion has been arrived at that no killing occurs since none of the bloods tested became sterile during the course of the experiments.

Production of Specific Antiserums for Infections of Unknown Cause.—Rous and his associates state that there is present in serum of high precipitin titer, produced by the repeated injection of rabbits with a blood-free serum of guinea-pigs or dogs, a principle, highly toxic for animals of the species furnishing the antigen. Intravenously, the serum causes severe shock, and even sudden death, while locally, it gives rise to acute inflammatory changes and profuse capillary hemorrhages. The complete removal of hemolysins and hemagglutinins from the serum by exposing it repeatedly to washed red cells lessens its toxicity to only a slight degree and one obviously dependent on these elements; while the further removal of precipitin by specific precipitation in vitro has no detoxifying effect whatever. Whether the toxic principle is a hitherto unrecognized antibody or perhaps a toxic product of the interaction of precipitin and precipitinogen—one formed as readily in the test tube as in the animal body—remains to be determined. The symptoms of guinea-pigs and dogs given an intravenous injection of treated or untreated serum markedly resemble those of anaphylaxis, but attempts at desensitization were unsuccessful. The local lesion in guinea-pigs is more severe than that of the Arthus phenomenon.

Deterioration of Crystalline Strophanthin in Aqueous Solution.—Experiments were undertaken by Levy and Cullen to ascertain the cause of the deterioration of aqueous solutions of strophanthin in relation to the altered hydrogen ion concentration, and to devise a method for preparing a stable solution for therapeutic purposes. Many of the glass containers commonly used in the laboratory, and most of the glass ampoules employed in marketing sterile solutions for hypodermic or intravenous medication, were found to yield sufficient alkali on autoclaving, to change the reaction of distilled water from p_H 6.0 to p_H 9.0. This increase in alkalinity is sufficient to render biologically inert and partially to decompose aqueous solutions of crystalline strophanthin in the concentration ordinarily employed in the clinic. It is suggested that for clinical use, crystalline strophanthin be dissolved in 0.02 M standard phosphate solution at p_H 7.0, and marketed in hard glass ampoules, thereby insuring stability of reaction with preservation of biologic activity.

Iso-Agglutinins in Infants and Children.—The iso-agglutination of 131 infants and children from birth to 10½ years was examined by Happ by testing their serum and washed corpuscles microscopically against the serum and washed corpuscles of each of four adult groups. The grouping as present in adults is rarely present in blood from the umbilical cord. At birth and during the first month of life, isoagglutination is rarely present, but the percentage of infants in whom the iso-agglutinin group is established increases with age, so that after 1 year the group is usually established, and after 2 years it is always present as in adults. The grouping is established in the corpuscles before it is established in the serum; i. e., the corpuscles acquire agglutinophilic receptors before the serum acquires agglutinin. Therefore, Group I is the first group to be formed and Group IV is the last. The early grouping in the corpuscles before the group is established in the serum is liable to change by the acquisition of new receptors. When the grouping has been established in both serum and corpuscles it does not change. Iso-agglutinins are present in mother's milk and the grouping is identical with that in the mother's blood. These agglutinins are probably not transmitted to the nursing infant through the milk. On account of the difference between the agglutination reactions in the blood of mother and child, it is not safe to transfuse an infant from its mother without making the preliminary tests.

Effect of Feeding Pineal Body on Development.—Feeding the desiccated pineal body of young calves to young albino rats failed to produce any effect on the early development of these animals.

Journal of Orthopedic Surgery, Lincoln, Neb.

March, 1920, 2, No. 3

Operative Correction of Paralytic Valgus. S. Kleinberg, New York.—p. 127.
Application of Curvature Therapy in the Ward. H. C. Marble, Boston.—p. 136.

Kansas Medical Society Journal, Topeka

March, 1920, 20, No. 3

Rôle of Laboratory in Diagnosis of Venereal Disease. W. A. Baker, Rosedale.—p. 57.
Treatment of Purulent Appendicitis. T. A. Jones, Hutchinson.—p. 61.
Need of Type of Graduate Study in Schools of Medicine. C. F. Nelson, Kansas.—p. 64.

Laryngoscope, St. Louis

February, 1920, 30, No. 2

Cellulitis of and Abscess in Parapharyngeal Tissues Causing Laryngeal Edema. C. G. Coakley, New York.—p. 65.
*Experimental Observations on Treatment of Brain Abscess Following Middle Ear and Mastoid Infections. J. McCoy, New York.—p. 75.
*Case of Temporosphenoidal Abscess. J. Leshure, New York.—p. 80.
Chances of Cure of Mastoiditis by Tentative Tonsillo-Adenectomy. O. Glogau, New York.—p. 83.
Perforating Gunshot Wound of Face with Extensive Destruction of Superior Maxillae. J. N. Roy, Montreal.—p. 100.
A Clamp Tonsillectome. E. Hyslin, Tacoma.—p. 109.

Treatment of Brain Abscess Following Middle Ear and Mastoid Infections.—A number of different procedures for the purpose of forming a safety zone through which to operate have been tried out by McKay but he has not yet reached definite conclusions.

Case of Temporosphenoidal Abscess.—The case cited by Leshure is of interest chiefly from the standpoint of diagnosis. None of the classical symptoms of brain abscess were present although a rather persistent headache should have aroused suspicion of deep-seated trouble. Incision of the right temporosphenoidal lobe evacuated about 30 c.c. of very foul thick greenish pus mixed with cerebrospinal fluid. As the patient's heart had not ceased to beat, the incision was enlarged and digital exploration revealed the fact that the abscess was encapsulated but evidently was not of very recent origin. No stalk or direct communication with the middle-ear cavity could be made out.

Medical Record, New York

March 20, 1920, 97, No. 12

Measures of Intelligence Diagnostically Remeasured. J. V. Haberman, New York.—p. 467.
Relation of Arterial Hypertension to Nephropathies. M. A. Motensen, Battle Creek, Mich.—p. 475.
*Clinical Study of Ectopic Pregnancy. H. E. Stein, New York.—p. 47.
Cause, Prevention and Cure of Influenza and Allied Diseases. Kahn, New York.—p. 481.
The Prostitute in Jail: Opportunity for Public Health Work That Gives Results. H. Goodman, New York.—p. 483.
Cancer Death Rate in New York City During 1919. L. D. Bulkley and L. B. Cady, New York.—p. 486.
Serum Sickness Treated with Proteal. F. Tweddell, Great Neck, N. Y.—p. 487.

Clinical Study of Ectopic Pregnancy.—Among 580 cases of gynecologic operations analyzed by Stein, there were forty-three cases of ectopic pregnancy, or 7 per cent. Only six of the forty-three women had never been pregnant. Thirteen were primiparas. Only six patients gave a history of previous miscarriage. Three patients had been operated on for a former extra-uterine pregnancy. A long period of sterility is usually regarded as an antecedent to an ectopic pregnancy. This fact is not borne out by Stein's study. One patient had been sterile thirteen years, and one eleven years, but the great majority had become impregnated within the last three years. In these forty-three cases, a double salpingectomy was deemed necessary only nine times. Thus the other tube showed evidence of inflammatory involvement in about one fourth of the cases. Of those tubes that were sectioned throughout, only about one third showed the presence of round cell infiltration and connective tissue replacement, due to chronic inflammation.

anges. It is Stein's opinion that the normal meeting place of the ovum and spermatozoon is in the uterus. Various factors may account for the meeting taking place in the tube: (1) late ovulation; (2) hypermotility of the spermatozoon; (3) lodgment of the ovum in a recess or congenital ampulla of the tube; (4) mild salpingitis.

Minnesota Medicine, Minneapolis

March, 1920, 3, No. 3

Early Diagnosis of Malignant Thyroid; Especially Carcinoma. H. A. H. Bouman, Minneapolis.—p. 105.
Recent Advance in Diagnosis of Surgical Lesions of Kidney. W. F. Braasch, Rochester, Minn.—p. 112.
Lethargic Encephalitis; Report of Twelve Cases. E. M. Hammes, St. Paul.—p. 118.
Treatment of Empyema by Closed Method. F. M. Manson, Worthington.—p. 124.
Cephalic Operation for Pyothorax: A. C. Strachauer, Minneapolis.—p. 127.
Correlation of Laboratory with Clinical Methods in Study of Tuberculosis. F. W. Wittich, Minneapolis.—p. 133.
Epidemic Influenza: At University Hospital, Minneapolis. E. T. Herrmann, St. Paul..

Missouri State Medical Ass'n Journal, St. Louis

March, 1920, 17, No. 3

Leiomyomata with Special Reference to Those Occurring in the Broad Ligament. O. H. Schwarz, St. Louis.—p. 91.
Treatment of Syphilis. W. K. Trimble, Kansas City, Mo.—p. 94.
Critical Analysis of Present Day Attitude of Medical School Curricula Toward Science of Therapeutics. W. H. Thaler, St. Louis.—p. 97.
Fractures of Patella and How Shall We Treat Them. W. R. Hewitt, St. Louis.—p. 100.
Conservative Surgery of Pelvic Organs. B. A. Poorman, Kansas City, Mo.—p. 103.
Psoriasis Incurable? W. H. Hammond, St. Louis.—p. 105.
Relation of Anaphylaxis to Asthma and Eczema. H. C. Berger, Kansas City.—p. 109.
Modified Agnew's Operation for Relief of Webfinger Produced by Rope Burns. E. D. Twyman, Kansas City.—p. 112.

Treatment of Syphilis.—After reviewing about 4,000 Wassermann tests, Trimble finds himself forced to the conclusion that primary syphilis is never cured. This belief is based on the observation of patients having had their infection a few years ago and having had modern intensive treatment. What may be the proper treatment for early syphilis Trimble finds it difficult to say. He is inclined to the view that one primary fault lies in the too universal acceptance of the specificity of certain drugs. Long periods of latency, he thinks, are rightfully attributed to an acquired immunity and not wholly to the treatment received. The most unfortunate state in which a patient could be found is where he harbors treponemata and at the same time has nothing but phenamin or mercury to protect him. Trimble concludes in a paper with the statement that syphilis cannot be cured, and that the best treatment is that which will give the patient the longest lease on life and usefulness to himself and society.

Psoriasis Incurable?—Among the internal medicines those of first importance in Hammond's opinion seem to be: arsenic, iron, nux vomica, the potassium salts, vegetable tonics, iodids, mercury, suprarenal, thyroid and pituitary extracts and vaccines. As to diet, he aims to balance the diet by increasing the amount ingested of those foods which are the least harmful to the patient. Of external measures, Hammond favors the rays of the Alpine sun lamp, judiciously applied, and mild application of the roentgen ray can be used on the nonhairy surfaces, but, he says, as a rule, resorcin, in solution to the scalp, and a mild ointment of ammoniated mercury elsewhere, are all that will be required.

New Orleans Medical and Surgical Journal

March, 1920, 72, No. 9

Case of Mixed Hypothyroidism and Hypopituitarism. A. Eustis and L. R. DeBuys, New Orleans.—p. 526.
Case of Cirrhosis of Liver; Talma Operation; Entire Relief of Symptoms. E. L. King, New Orleans.—p. 529.
Using Machine Motor in Use as a Motor Saw. J. T. Nix, Jr., New Orleans.—p. 531.
Lethargic Encephalitis. J. M. Perret, New Orleans.—p. 534.
Sponge-Forceps Methods of Treating Incomplete Abortion. E. L. King, New Orleans.—p. 540.
Cyst of Ovary, in Patient 14 Years of Age. W. D. Phillips, New Orleans.—p. 544.

Collection and Preparation of Specimens for Laboratory Examinations. E. Bass, New Orleans.—p. 545.
Epithelioma, its Various Types and Treatment by Radiotherapeutics. H. F. Wilkins, Birmingham.—p. 549.

Case of Mixed Hypothyroidism and Hypopituitarism.—Eustis and DeBuys report the case of a girl, 15 years of age, who, two years ago, presented symptoms of hypothyroidism, while during the past two years she has developed well defined symptoms of hypopituitarism. She has the mental and physical development of a child of 5. Her most marked symptoms are: weakness, unsteady gait, obesity, dryness of the skin, lack of physical and mental development and wetting of the bed. Her coordination of muscular movements is so poor that she is unable to feed herself. Constipation has been a prominent symptom for six years. For one month she has had a capsule, three times daily, consisting of 2 grains of extract of the whole pituitary gland, 1 grain of extract of thyroid, and 1 grain of ovarian extract. The authors believe that the condition is one primarily of the disturbance of the anterior lobe of the pituitary gland in which there is a diminished secretion, with secondarily a diminished secretion of the thyroid.

Sponge-Forceps Method of Treating Incomplete Abortion.—No originality is claimed by King for the method he uses. The patient is always anesthetized, is carefully prepared with green soap and water, followed by alcohol, a self-retaining speculum is introduced, the cervix is grasped by a volsellum and dilated gently (if necessary). In the majority of cases, the cervix is open enough to admit the sponge forceps or the finger, and no dilation is necessary. Ordinary sponge forceps are introduced, and with them the retained secundines are seized and withdrawn. The forceps are introduced and withdrawn two or three times, until no more remnants are found, and then are introduced with a sponge in their grasp, which is twisted around inside the uterus to remove any small particles that may be left. Finally, if the cervix is sufficiently dilated, the finger is introduced and the cavity carefully palpated in order to make sure that all particles have been removed. This step is not regarded as essential, and is often omitted, as the cessation of bleeding is a very reliable indication that the cavity is empty. The uterus is not irrigated, no chemicals are used in its interior, and no pack is used, except in the rare case in which rather free bleeding persists in spite of complete evacuation. The after-treatment is simply rest, local and general, for from three to six days. The patient is allowed up as soon as the uterus has involuted well, and she is discharged two or three days later. King has found that this method is as effective as the use of the curet in the removal of the retained material, is not followed by fever, and is not attended by any risks.

New York Medical Journal

March 20, 1920, 111, No. 12

Treatment of Flail and Stiff Joints. R. Jones, Liverpool.—p. 485.
Appendicitis in the Argonne. E. Eliot, Jr., New York.—p. 487.
Gonorrheal Infection in Childhood. P. Brooke Bland, Philadelphia.—p. 489.
Blood Transfusion in Modern Therapeutics. G. I. Miller, Brooklyn.—p. 492.
Cholesteatoma, Report of Five Postoperative Cases. J. M. Smith, New York.—p. 495.
Influenzal Pneumonia. J. Harkavy, New York, and J. H. Selby, Washington, D. C.—p. 497.
Goiter. J. C. O'Day, Honolulu.—p. 503.
Electrotherapeutics and the Medical Profession. H. Finkelparl, Pittsburgh.—p. 506.

New York State Journal of Medicine

March, 1920, 20, No. 3

*Chronic Appendicitis; A Study of Postoperative End Results. E. M. Stanton, Schenectady.—p. 66.
What Can Be Gained in Thorough Study of Treatment of Serious Wounds in Late War in Its Application to Railroad Surgery? E. A. Vander Veer, Albany.—p. 70.
Present Conception of Significance of Cardiac Phenomena. A. A. Jones, Buffalo.—p. 73.
Clinical Course and Treatment of Vincent's Angina. C. F. Theisen, Albany.—p. 77.
Influence of Diseased Sinuses on Body in General. G. F. Gott, Buffalo.—p. 79.
Case of Recurrent Tonsillar Growth. J. J. Rainey, Troy.—p. 80.
Treatment of Borderline and Obscure Cases. F. B. Turck, New York.—p. 82.

Chronic Appendicitis.—In Stanton's experience chronic appendicitis has proved to be a rather sharply defined disease in which the symptoms may be recognized by the fact that they produce in miniature the first symptoms of the acute attack. The disease differs from the acute appendicitis by the fact that the obstruction is incomplete or because it is habitually relieved before the acute inflammatory stage develops. The pathologist's report, based on the microscopic examination of so-called chronic appendixes is unreliable. Most symptom producing chronic appendixes may be recognized at the operating table by the presence of gross anatomic factors predisposing the appendix to attacks of partial or complete obstruction of the lumen.

Ohio State Medical Journal, Columbus

March 1, 1920, 16, No. 3

- *Heart in Focal Infections. J. E. Greiwe, Cincinnati.—p. 151.
Septic Foci in Relation to Bones and Joints. R. B. Cofield, Cincinnati.—p. 155.
Pathologic Conditions of Teeth as Shown by Roentgen ray. H. J. Means, Columbus.—p. 157.
*Streptococcus Viridans Infections of Mouth and Throat with Reference to Neuritis and Arthritis. C. H. Hay, Cleveland.—p. 162.
Murphy Treatment of Acute Arthritis. C. DaC. Hoy, Columbus.—p. 167.
Indications for Removal of Tonsils in Childhood. H. C. King, Cleveland.—p. 170.

Heart in Focal Infections.—Greiwe suggests that chronic septicemia, due to pyorrhea alveolaris, must be given serious attention in considering the etiology of inflammations and degenerations, as well as dilations of the ascending aorta, the arch and the descending aorta.

Streptococcus Viridans Infections of Mouth and Throat with Reference to Neuritis and Arthritis.—In Hay's experience, *Streptococcus viridans* plays a very important rôle in the etiology of cases of neuritis and arthritis which are not accompanied with swelling and fever, a feature of differential diagnostic importance. Granted the elimination of the source of toxemia, an autogenous vaccine of the cultured *Streptococcus viridans* has given markedly beneficial results in Hay's cases.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 28, 1920, 1, No. 3087

- Diagnosis of Glaucoma. R. H. Elliot.—p. 279.
Epilepsy; Recurrent Herpes; Lethargic Encephalitis. J. Taylor.—p. 282.
*Intravenous Protein Therapy. A. E. Gow.—p. 284.
*Poison of Spiny Dog-Fish. H. Muir Evans.—p. 287.
*Metastatic Staphylococcal Infection of Kidney. H. R. Souper.—p. 288.
*Volvulus of Cecum: Double Obstruction. R. E. Smith.—p. 289.
Use of Immunized Blood Donors in Treatment of Pyogenic Infections by Whole Blood Transfusion. H. J. B. Fry.—p. 290.
Functional Connection Between Reproductive Organs and Other Glands of Internal Secretion. E. E. Hewer.—p. 293.

Intravenous Protein Therapy.—Gow has given peptone intravenously in conjunction with sensitized vaccine subcutaneously in streptococcal septicemia, and is convinced of its value in such cases. In certain forms of arthritis great benefit has been derived from intravenous protein therapy. Here the vaccine is given entirely for a shock effect. The type of joint disease which responds best, in Gow's experience, is the multiple infective arthritis for which no active source of primary infection or septic absorption is demonstrable. While Gow regards intravenous protein therapy as of great value in certain carefully selected cases—more particularly of arthritis, the septicemias and coliform infections—he states most emphatically that it is not a panacea for all ills; and even in those diseases in which it is of use it is to be regarded solely as an accessory weapon in conjunction with, not to the displacement of, other remedies.

Poison of Spiny Dogfish.—A case of acute edema, the result of a prick by a dogfish, is reported by Evans. A fisherman sustained a punctured wound at the base of the thumb infected by a dogfish. The injury was followed by acute

stabbing pain in the part which lasted four or five hours; the hand then began to swell, and when the patient arrived at the hospital there was great swelling and edema of the back of the hand, and the front of the wrist and forearm were painful, tender, red and edematous. This acute inflammatory edema lasted for four days and for a time it seemed that suppuration would occur. On the fifth day the edema at the back of the hand had subsided, but it was not until seven days had elapsed that the tenderness and swelling over the wrist had disappeared and the patient was convalescent. The treatment adopted was to paint the hand and the front of the wrist and forearm with liniment and solution of iodine in equal parts and apply hot fomentations.

Metastatic Staphylococcal Infection of Kidney.—The infection of the kidney observed by Souper followed on operative interference with an infected wound of the forearm. The condition cleared up on treatment with an autogenous vaccine.

Volvulus of Cecum: Double Obstruction.—The original lesion in the case cited by Smith was a tuberculous affection of the mesenteric glands leading to a strong adhesion between the hepatic flexure and the last 2 inches of the ileum. The early stages of this were noted in the atypical gastric symptoms due to an ileac "kink" and obstruction to the ileac efflux, so often mentioned in the literature. Some indiscretion of diet, followed by decomposition of the contents of the cecum produced a "balloon" of this viscus, which, being mobile, rose up, turned on a hinge and become a volvulus, producing further obstruction at the already kinked hepatic flexure. Relief of this obstruction and the replacing of the cecum away from the ileum brought into force a second kink in the ileum from which ensued the intestinal obstruction.

China Medical Journal, Shanghai

January, 1920, 34, No. 1

- 1918 Pandemic of Influenza in Canton. W. W. Cadbury.—p. 1.
Four Cases of Thromboangiitis Obliterans. A. I. Ludlow.—p. 18.
Case of Acute Symmetrical Gangrene. E. M. Ewers.—p. 23.
Transverse Presentation: Case of Spontaneous Evolution. W. Phillips.—p. 24.
Cases of Abdominal Surgery. C. Wilkinson.—p. 26.
Case of Perithelioma of Carotid Glands. J. O. Thomson.—p. 32.
Viability of Epidermophyton. H. Dold.—p. 34.
Acute Lymphatic Leukemia; Report of Case. E. S. Tyau.—p. 37.
Vaccine Service at "Institut Bacteriologique" of Chengtu. H. Jouveau-Dubreuil.—p. 41.

Japan Medical World, Tokyo

Feb. 1, 1920, 10, No. 5

- *Prophylactic Inoculation with Influenza Vaccine. S. Yabe.—p. 105.

Prophylactic Inoculation with Influenza Vaccine.—The results obtained by Yabe in two series of experiments seem not to favor the possible protection of the animal by the administration of the vaccine. If the results of the experimental active immunization of the animals against influenza and of the passive immunization of the animals (with the convalescent serum) are considered antithetically, they both do not appear to produce a complete protection. It is, however, an interesting fact to note that the convalescent serum contains a certain amount of immune bodies, although in a very small quantity. This may be taken as the standard for the possibility of the production of protective properties in the vaccinated.

Journal of State Medicine, London

February, 1920, 28, No. 2

- Early Diagnosis of Pulmonary Tuberculosis. H. G. Sutherland.—p. 33.
Diagnosis and Treatment of Tuberculosis in Relation to Public Health. H. H. Thomson.—p. 46.
Selection of Patients for Sanatorium Treatment. C. Wall.—p. 55.

Lancet, London

Feb. 28, 1920, 1, No. 9

- Ovarian Tumors Complicating Pregnancy, Labor and Puerperium. H. R. Spencer.—p. 475.
*Influenza as an Etiologic Factor in Nephritis. W. W. D. Thompson and H. F. MacCauley.—p. 481.
*Factors Concerned in Asthma and Their Treatment. D. W. C. Jones.—p. 484.

One Hundred and Three Cases of Compound (Gunshot) Fractures of Femur. P. Turner.—p. 488.
Hypnotic Treatment of Narcolepsy. C. S. Meyers.—p. 491.
Pancreatic Insufficiency. J. O. Symes.—p. 494.
Complete Total Inversion of Parturient Uterus. H. T. Whitling and N. Glover.—p. 495.

Influenza as Etiologic Factor in Nephritis.—The points emphasized by Thompson and McCauley are: Nephritis is a more frequent complication of influenza than is commonly thought. The virus of influenza may affect the kidneys in various ways: (a) By producing a temporary albuminuria as seen in many other acute infectious fevers. (b) By causing an acute nephritis during the course of the disease, especially if respiratory symptoms are present. (c) Nephritis may arise during convalescence, as in scarlatina. The damage of the kidney may not become manifest until the patient is believed to have recovered from the original disease. (d) A dormant or latent nephritis may be lighted up. Nephritis may follow even mild cases of influenza. Nephritis occurring during the course of influenza may be masked by the respiratory symptoms and only careful routine examination of the urine may demonstrate its presence, while some of the cases arising after the symptoms of influenza have abated may show such slight symptoms—transient edema, slight oliguria, or capricious albuminuria—that they may easily be missed. The authors report four cases occurring in one family. In all these cases a careful inquiry was made as to the possibility of renal trouble existing previous to the influenzal attack, but the suspicion was absolutely discounted in every case.

Factors Concerned in Asthma and Their Treatment.—In the treatment of asthma, Jones maintains one has to consider an irritable center, hysterical influence of that center, infections of the bronchi and parts of the lungs below them, more especially with specific bacteria whose toxins induce the proxysms, abnormalities of the respiratory tract superior to the bronchi, and irritation of viscera outside the respiratory tract altogether. For the center the use of sedatives, and the usual psychical methods applicable to hysteria must be employed as required. For the nose and throat, surgical methods are generally needed, and appropriate treatment must be given to other visceral disturbances. As to the respiratory tract proper, bronchitis must be treated in some way or other. It is a bacterial infection, and in all recovery from such infections the natural capacity of the body to elaborate antibodies is required for which the only therapeutic measure is treatment by appropriate vaccines; finally, the hypothesis as to the specific character of certain bacterial toxins in the causation of asthma is correct, that these also can frequently be combated by the employment of vaccines. It is submitted that this constitutes a scheme for treatment of the asthmatic state on rational lines.

Pancreatic Insufficiency.—The case reported by Symes is added to lend support to the view that oxaluria may arise from fermentation of carbohydrates in the digestive tract. In this instance the faulty digestion of starch was due to the insufficiency of the pancreatic secretion. The first attack of oxaluria occurred thirty years before the patient's death, and the author believes that probably at this time there was commencing fibrosis of the pancreas. Seventeen years later oxaluria recurred, and with it glycosuria and albuminuria. The glycosuria was never severe, and six years later, when the patient was carefully dieted, it disappeared, to return only on one or two occasions, when he had broken his dietary regime. It was an alimentary glycosuria, and to the end of his life the patient preserved sufficient pancreatic substance to prevent the appearance of the signs and symptoms of diabetes. A stone in the pancreatic duct gave rise to an attack during the autumn of 1911. Apparently it migrated its way out of the duct into the bowel. The characteristic stools of pancreatic insufficiency were noted some months before there were symptoms of a stone in the duct. The fact that the symptoms and signs became more pronounced after the stone had disappeared, Symes says, was owing, no doubt, to cicatrization and gradual narrowing of the lumen of the duct and the ever-increasing fibrosis of the pancreas. Other points of interest in the case are: (1) The

rapid and ultimately fatal rise of blood pressure due to auto-intoxication from the bowel or to imperfectly antagonized suprarenal secretion. (2) The long continued good nutrition and physical and mental energy shown by the patient, which indicates to how great an extent pancreatic digestion may be assisted by other organs. (3) The relief afforded to the patient by withdrawing fat from the diet and giving acid preparations by the mouth (acidol pepsin, betain chlorid) after meals, the increased acidity stimulating the flow of secretion, and thus increasing both the internal and external secretions of the pancreas.

Medical Journal of Australia, Sydney

Jan. 31, 1920, 1, No. 5

- Commoner Tropical Diseases in (Late) German New Guinea. L. H. Hughes.—p. 97.
*Resection of Impassable Stricture of Urethra. Report of Three Cases. S. H. Harris.—p. 99.
*Value of von Pirquet's Test for Tuberculosis in Children. W. F. Litchfield.—p. 101.
Conditions That Simulate Tubercular Disease of Hip. R. B. Wade.—p. 102.
Volvulus of Colon with Internal Hernia of Cecum. L. L. Snow.—p. 103.
Recovery from Influenzal Meningitis. W. F. Litchfield.—p. 104.

Feb. 7, 1920, 1, No. 6

- Acute Rheumatic Heart Disease. J. M. Gill.—p. 119.
Tuberculin Therapy. J. F. Spring.—p. 121.
Treatment of Irreducible Intussusception in Children. A. Successful Resection by Maunsell's Method. H. Rischbieth.—p. 123.

Resection of Impassable Stricture of Urethra.—The method of treatment described by Harris is founded on the following basic principles: (1) that the perineal portion of the male urethra may be slit up on its floor to any desired extent and thus converted into a "ribbon"; (2) that any damaged portion may then be resected and the ends of the "ribbon" sutured together; (3) that, finally, provided no urinary contamination of the wound be permitted, the urethra will resume its tubular form naturally and in due course.

Value of von Pirquet's Test for Tuberculosis in Children.—Observation has confirmed Litchfield's belief that the von Pirquet test for tuberculosis in children, when used and interpreted with discretion, is of considerable clinical value.

National Medical Journal of China, Shanghai

December, 1919, 5, No. 4

- Recent Cholera Epidemic in China. Wu Lien-teh and J. W. H. Chun.—p. 182.
Economic Aspects of Public Health. A. J. Smith.—p. 199.

Archives des Maladies de l'App. Digestif, Paris

December, 1919, 10, No. 6

- *Signs of Insufficiency of the Stomach. M. Labbé.—p. 321.
*Symptoms of Dysentery with Uterus Disease. M. Devic and M. L. Bouchut.—p. 346.
*The Stomach Disturbances After Vaccination Against Typhoid. L. Timbal.—p. 351.

Signs of Insufficiency of the Stomach.—Labbé comments on the close physiologic and pathologic connection between the stomach, intestine, pancreas and liver, so that it may be impossible to tell which organ was the primary one involved, but study of the gastric secretion may give the clue to the whole clinical picture. He prefers Töpfer's dimethylamido-azobenzol colorimetric method, as modified by Linossier, as the simplest and most rapid technic. Repeated examination revealing constantly abnormal findings indicates ulcer or persisting dyspepsia. The main point, he reiterates, is to regard the digestive apparatus as a whole and not center our investigations on any one organ alone. Even with hyperchlorhydria, this may not be responsible for all the symptoms, and there may be violent pains in the stomach with hypochlorhydria, showing that spasm of the pylorus is the cause of the pains, even with hyperchlorhydria. In his group of cases of hyperchlorhydria there were four of typical and six of probable gastric ulcer, and others with chronic enteritis, gastro-intestinal atony and dyspepsia of indefinite types. The hypochlorhydria group included cases of enterocolitis, gastric atony, gallstones, insufficiency of the liver, neuropathies, and in one case a gastric ulcer. In the group with

anachlorhydria, more than half of the patients had enteritis, and others insufficiency of the liver, neuropathies, gastralgia and anemia, alcoholic gastritis or ulcerative perigastritis.

Dysentery with Uterus Disease.—Devic and Bouchut report two cases in which symptoms suggested dysentery but resisted all treatment on this basis. They subsided at once in one case after discovery of a small fibroma on the rear wall of the uterus, pushing in the rectum wall at this point, and the uterus was removed. In the second case simple retroversion of the uterus, pressing on the rectum, caused the symptoms supposed to indicate dysentery. In the first case the symptoms were of long standing, and the condition was so grave that the woman did not long survive. In the retroversion case the supposed dysentery was of only two months' duration. The patients were 50 and 43 years old. The entire pelvis should be examined with intestinal disturbance.

Stomach Disturbance After Vaccination Against Typhoid.—Timbal reports a personal case and cites three others from the records in which hematemesis followed the vaccination. They teach the importance of investigating the history, and refraining from vaccination on suspicion of ulcer or cancer. Simple dyspepsia is not a contraindication.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

December, 1919, 8, No. 12

*Radium Treatment of Cancer of Cervix. Recasens (Madrid).—p. 676.
*Bactericidal Action of Radium. P. Lequeux and E. Chomé.—p. 698.

Radium Treatment of Cancer of Uterine Cervix.—Recasens has been treating malignant disease of the cervix with radium since 1913, and many cases of supposedly inoperable cancer have been cured for three, four and five years to date. He is seeking with so many others to learn why it failed in 30 or 40 per cent. of his over 400 cases, even when conditions, structure, etc., seemed identical. Another astonishing feature of radium treatment is that sometimes when it seemed to have failed completely and the treatment was abandoned as hopeless, the woman returned months later immeasurably improved or even clinically cured. There had evidently been a cumulative action from the radium, and the organism had rallied some mysterious forces to its support. These mysterious forces must be discovered and harnessed in our service. The cancer and the radium both depress the numbers of leukocytes, and we must seek to induce leukocytosis as an aid in the fight against the malignant disease. His experience confirms further that the toxic cachexia is aggravated by radium treatment which pours more toxins into the circulation. Before the radium is applied, the number of leukocytes must be increased and the best means for this, he says, is by application of diathermy to the spleen. Almost at once the blood usually shows increased numbers of leukocytes. It has long been known, he says, that the spleen has a cancerolytic action, but no means has been devised as yet that will enhance this.

No drugs were found effectual except that colloidal copper by the vein seemed sometimes to augment the susceptibility of the cancer cells to the radium, the cure being realized earlier in these than in other cases. This encourages further search for chemicals which may alone cure cancer, but for the present we can use it as an adjuvant. Numbers of chemicals were tested locally, and also diathermy but none displayed any efficacy. To avoid secondary infections, he treats the cancer with a 10 per cent. solution of copper sulphate before applying the radium and douches the vagina with a 1 per cent. solution. The amount of radium used is 70 mg., at eight day intervals, and the glands in the region are given supplementary roentgen treatment. The papillary form of cancer is most amenable to radium when the tube can be placed so it is completely surrounded by the excrescences of the tumor.

Action of Radium on Bacteria.—Lequeux and Chomé were unable to detect any destructive influence from the radium rays on the typhoid and colon group. The rays arrest the progress of the culture, check production of pigment, and cause agglutination, but no bactericidal action was evident except for the gonococcus, and perhaps also for the streptococcus. The action of radium on bacteria in the blood stream

was not demonstrated, but certain facts observed are certainly significant, namely, that one mouse thus treated survived experimental pneumococemia; rabbits developed milder sepsis after inoculation with staphylococci, and a few other similar experiences.

Bulletin Médical, Paris

Feb. 11, 1920, 34, No. 8

Blood Pressure in Last Phase of Arteriosclerosis. Amblard.—p. 127.
Treatment of Constipation. J. Génévrier.—p. 130.

Feb. 14, 1920, 34, No. 9

Medical Service in the Paris Hospitals. L. Brocq.—p. 141.

Feb. 18, 1920, 34, No. 10

*Therapeutic Anti-Anaphylaxis. J. Danysz.—p. 155.
Treatment of Vomiting in Children. Stévenin.—p. 157.

Therapeutic Antianaphylaxis.—Danysz' method of treating disease by combating the factor of anaphylaxis has already been described in these columns, June 7, 1919, p. 1707. He here describes anew the technic and his experience in 352 cases since 1913. In seeking for an efficient antianaphylactic, he started from the theory that the focus for production of the substances generating the anaphylaxis in the majority, if not in all, of the chronic, noncontagious diseases, is in the bowel: The albuminoid matters or microbial contents of the intestinal canal passing into the blood through the congested intestinal mucosa act as antigens and induce the anaphylactic state of the organism. Consequently, he reasoned, the microbes isolated from the intestinal contents ought to act as antigens when inoculated or ingested. The microbes are isolated from a scrap of stool by sowing on ordinary culture bouillon and then making pure cultures on gelose, and then mixing the cultures in the same proportions as found originally. This is diluted with physiologic serum, sterilized with heat and the dose determined by weight. For ingestion, the dose is $\frac{1}{10}$ to $\frac{5}{10}$ mg. of the microbial bodies; for injection $\frac{1}{4,000}$ or $\frac{1}{1,200}$ mg. At first he made an autogenous antigen for each patient, but finding that the species and proportions of bacteria were so uniform, he used a polyvalent heterogenous preparation in some cases. The results were less pronounced when a single species was used. In treating the tuberculous, he added a little tuberculin to the polyvalent entero-antigen, as he calls the preparation. The treatment is based on the same principle as the protein therapy, peptone injections, parenteral milk injections, etc. "It is almost absolutely harmless," he says, "and its action seems to be not directly on the lesions of the disease but on the central nervous system, and especially on the medulla oblongata. This in turn reacts with a stimulating or regulating effect on the glandular functions, just as we find an attack of fatal anaphylaxis can be aborted by a strong dose of alcohol or ether taken before the dose that induces the anaphylactic attack. We know also that a more or less generalized anaphylactic attack can be brought on by intense fear or grief. All this shows that the central nervous system can be deadened or whipped up enough to prevent or induce these cellular metabolisms which are revealed by the symptoms. . . . We know also that the cell reactions which have as their immediate definite results a diarrhea, attack of asthma or urticaria; are always of the same nature, whatever the primary cause of the crisis; whether it is an emotion, an odor, a sensation of cold or an antigen. We thus have reason to assume that in the nonspecific reactions it is always some reaction in the central nervous system which starts the crisis or aborts it or cures it. . . . The evidence to date indicates that the antigens derived from the stools are the most potent yet known for influencing the nerve centers in this way."

The dose of the entero-antigen must be very small to begin with (0.05 or 0.1 c.c. of a dilution containing 0.01 mg. of microbial bodies per 1 c.c.). It is best to avoid a febrile or other reaction (except in psoriasis). The 352 cases treated included many of urticaria and eczema cured for over four years without recurrence; of psoriasis and epilepsy cured for over a year; of asthma and emphysema for more than three years; and of glandular, renal and testicular tuberculosis cured for over two years. But in some of the cases of psoriasis

menorrhoea or gastro-intestinal disease there was recurrence in three or six months, but these yielded promptly to summption of the entero-antigen. In nervous disturbances the effect is usually apparent at once, but in constipation it may not become apparent until several weeks after a series of eight or ten injections. Cures have been realized in 90 per cent. of all the cases treated, with the exception of priapism, in which only 60 per cent. were cured, and in epilepsy. Complete and durable remissions were realized in epilepsy only in children, although the seizures in adults were mitigated and rendered less frequent. In addition to the pathologic conditions already mentioned, his list includes arthritis, rheumatism, slight chronic albuminuria, and the disturbances of the menopause.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 23, 1920, 44, No. 3

Intramuscular Injection of Antitoxin. B. Weill-Hallé.—p. 83.
Chronic Rheumatism. P. Lereboullet and J. Mouzon.—p. 86.
Eclamping Lethargic Mesencephalitis. Sicard and Kudelski.—p. 93.
Myoclonic Acute Encephalitis. Idem.—p. 94.
Discovery at Necropsy of Latent Pneumothorax of the Base. E. Rist and P. Ameuille.—p. 99.
Terminal Jaundice of the Tuberculous. P. Ameuille.—p. 102.
Meningeal States with Narcolepsy. H. Claude.—p. 104.
Friedländer Bacillus Pleuropneumonia. C. Flandin and M. Debray.—p. 108.
Use of Lethargic Encephalitis. A. David.—p. 111.
Enteric Thrombophlebitis with Latent Cirrhosis. A. Cade and P. Brette.—p. 114.
Facial Paralysis in Influenza. A. Porot and N. Sengès.—p. 118.

Treatment of Diphtheria.—Weill-Hallé obtained superior results, he says, when he gave the antitoxin in a single large intramuscular dose. As a rule he makes the injection in the buttocks, injecting 250 units in moderate cases per kilogram of weight, and from 500 or 600 units in the graver cases. It is seldom necessary to supplement this with subcutaneous injections.

Fibrous Rheumatism.—Lereboullet and Mouzon illustrate the extreme dislocation of the fingers in the case described, evidently merely from relaxation of the ligaments and capsules of the joints involved.

Myoclonic Acute Encephalitis.—Sicard and Kudelski report four cases of a disease commencing with severe neuralgias, lancinating pains, general depression, and moderate fever; then comes a period of brief rapid rhythmic myoclonus, explosive twitching of the muscles in various segments of the body. The neuralgias persist and the third week there is delirium, while the myoclonic play of the muscles becomes attenuated; the diaphragm may keep up the myoclonus to the last. All but one of these cases passed into fatal coma. After stated in the discussion that followed that he had encountered some cases of this myoclonic type associated with lethargic encephalitis, and some cases of the latter which began with severe neuralgias. He said further that in 1918 the appearance of lethargic encephalitis preceded that of influenza. He thinks that probably the factors responsible for influenza are the same ones which entail the other disease, although the two diseases are separate entities.

Meningeal States with Narcolepsy.—Claude reports three cases recently observed which seemed to represent a condition midway between actual meningitis and lethargic encephalitis. They ran a rapid course, with recovery. They differed from epidemic and tuberculous meningitis by the prolonged coma and somnolency, diplopia and ptosis.

Friedländer Bacillus Pleuropneumonia.—The woman of 40 developed septicemia, the work of the Friedländer bacillus, starting in a fetid rhinitis and localizing in a lobe of one lung and also in the biliary apparatus, inducing jaundice, and final recovery in a month although an old heart disease rendered the outlook dubious at first.

Journal d'Urologie, Paris

January, 1920, 8, No. 6

Treatment of Hypospadias. Nové-Josserand.—p. 449.
Absence of Ejaculatory Duct. P. Ancel.—p. 457.
Calculi in Both Kidneys of Girl of Five. Moran.—p. 463.
Technic for Bacteriologic Control of Cure of Urethritis. E. Roucayrol and Renaud-Badet.—p. 469.

Hypospadias.—Nové-Josserand has reconstructed the urethra in thirty-five cases of hypospadias and five of epispadias with full success in thirty-seven instances. The tube drawn into the tunnel was made of skin, the epidermis inside, and it was drawn over the segment of the normal urethra, through an incision 6 or 8 cm. long, exposing the urethra from below. The first step is to divert the urine by a hypogastric cystostomy. He advises to operate as soon as possible after birth to allow the corpus cavernosum to develop properly. The long incision, including the hypospadias meatus at about the center, is sutured with No. 00 aluminum bronze wire over Galli tubes placed on each side of the incision to bring the lips largely into contact and ward off all danger of a fistula. The wires are passed through the base of the skin flaps, about 1 cm. apart, leaving a minute opening at the proximal end of the incision for drainage. The details of the operation are shown in seven illustrations and the technic commended as an improvement over others in vogue.

Absence of Ejaculatory Duct.—Ancel found that this duct was missing in four specimens recently examined. The anatomic conditions responsible for this differed widely.

Calculi in Both Kidneys in Girl of Five.—Moran had to operate on both kidneys at the same sitting to remove the multiple calculi responsible for the anuria. The child has developed normally but the urine is still turbid four years later and contains formed elements and bacteria.

Paris Médical

Feb. 14, 1920, 10, No. 7

*Heart Complications with Influenza. Minet and Legrand.—p. 133.
**"Parchment" Dermatitis. Gougerot.—p. 140.
*Solar Plexus Sign with Abdominal Neuropathies. Fraikin.—p. 143.
Organic Hemiplegia in the Gassed; Two Cases. E. Terrien.—p. 145.

Cardiac Influenza.—Minet and Legrand comment on the scarcity of communications dealing with the heart complications of influenza. They have encountered six cases. They discuss in connection with these cases the various sets of symptoms that may be presented according as different parts of the heart, the innervation or the endocrine glands are affected. The prognosis is always grave for the organic forms, and should be reserved for all types, especially with an already fatigued or damaged heart. Absolute repose is indispensable, with revulsion or ice to the region, and stimulants for the heart, as needed, and suprarenal treatment, which may have an actually causal action.

Parchment Dermatitis.—Gougerot describes a streptococcus-staphylococcus dermo-epidermitis in which the skin peels off in large thick scales, like the bark of a tree. It proved in his six cases to be the most tenacious of these microbial dermo-epidermitis types.

The Solar Plexus Sign in Abdominal Neuropathies.—Fraikin says that when the nervous apparatus of the abdomen is out of order, there may be spontaneous pain or tenderness in the solar plexus. It is a sign that the circulation is hampered in or outside of the viscera, or the nerves are suffering from toxic action or from traction from sagging organs. This solar sign may serve to differentiate a purely nervous affection from an organic visceral lesion and it may guide to proper treatment of the neuromotor dyspepsia, general neuropathies, etc. Physical agents are generally the ones indicated.

Presse Médicale, Paris

Feb. 4, 1920, 28, No. 10

*Anaphylaxis to Acetylsalicylic Acid. F. Widal and P. Vallery-Radot.—p. 93.
*Malaria with Subnormal Temperatures. R. A. Gutmann and R. Porak.—p. 95.

Anaphylaxis to Acetylsalicylic Acid.—Widal and Vallery-Radot report a case of actual anaphylaxis to acetylsalicylic acid, persisting for nine years. Then a systematic effort was made to overcome this anaphylaxis by giving the drug twice at an hour interval, first 0.005 gm. and then 0.25 or 0.5 gm. This was repeated thirteen times in six weeks—the preliminary doses increased from 0.005 to 0.03 gm.—and this sufficed to cure completely all tendency to the anaphylaxis.

It was of the typical alimentary type, and the desensitization was realized with the technic effectual in this type. They remark in conclusion that clinical observation rarely allows us to watch the modifications insidiously going on in the organism. But once in a while we encounter conditions which, as in this case, enable us to trace the series of these transformations with the precision of experimental research. When such an occasion arises, we should seize and record it with scrupulous care as it may by comparison reveal the significance of certain pathologic phenomena hitherto inexplicable. By compiling data, as in the case here reported, we may discover the origin of a whole series of pathologic conditions the cause of which can be traced to some preceding sensitization, which might be cured by desensitization.

Hypothermic Malaria.—Gutmann and Porak give some charts from cases of malaria in which the disease progressed by regularly intermittent phases in which the temperature dropped below normal instead of soaring above it. This hypothermic form entails cachexia or grave complications the same as the ordinary form, unless arrested by treatment in time, but on account of the absence of fever the malaria may be misinterpreted.

Revue Franç. de Gynécologie et d'Obstét., Paris

November, 1919, 14, No. 11

- *Experimental Sensitization of Guinea-Pig Mucosa to the Gonococcus. P. M. Besse and D. Christidès.—p. 415.
Allowing Parturients to Get Up Early. J. Audebert.—p. 421.
*Bilateral Ovariectomy During Pregnancy. A. Grosse.—p. 424.

Guinea-Pigs and the Gonococcus.—A predisposition has to be induced before guinea-pigs can be used for experimental research with the gonococcus. Besse and Christidès think that this could be accomplished by modifying the diet, but the three animals tested did not yield conclusive results.

Bilateral Ovariectomy in the Pregnant.—Grosse adds another case to the fifty-two cases he has found on record in which both ovaries were removed during the first four months of pregnancy. The operation is no more dangerous on the pregnant than on other women. The pregnancy continued unmolesed in all except in 13.7 per cent. This testifies that the corpus luteum is not indispensable for the development of the fetus. With unilateral ovariectomy, the abortion followed only in 11.5 per cent. in the first three months, and in 3 per cent. in the fourth month, in a recent compilation, while with bilateral ovariectomy the proportions were 25 per cent. the first two months, 11 the third, and 12 the fourth. In Grosse's own compilation, the figures were 16, 11.75 and 10 per cent. in these months. These figures suggest a possible influence exerted by the corpus luteum on the pregnancy, and warn that it is better not to remove the ovaries early during a pregnancy except for urgent indications. Three pages of bibliography on the subject are critically reviewed.

Revue Médicale de la Suisse Romande, Geneva

January, 1920, 40, No. 1

- *Evolution in Medical Organization. L. Exchaquet.—p. 3.
*Diagnosis of Mastoiditis. P. Terrier.—p. 11.
Tests of Stomach Functioning. E. Cottin and M. C. Saloz.—p. 22.
Cont'd.
Lymphosarcoma of the Spleen. G. G. Moppert.—p. 40.

Evolution of Medical Organization.—Exchaquet concludes his study of this subject by urging that medical students should be taught the ethics of the profession, and that the leaders of the profession should take special pains to counsel and guide young physicians in the right path. The medical faculty at Lausanne have announced a lecture on deontology in each semester, and the professors are instructed to draw the attention of the students to such matters, and inculcate the principles of medical ethics.

Diagnosis of Mastoiditis.—Local pain and high fever, in children, and deafness usually warn that the otitis has spread to the mastoid when they persist longer than two or three days after ample drainage of the ear and other proper measures. If the fever is of the pyemic type, an operation should be done at once, even if the mastoid is not tender. If signs

of meningism do not subside by twenty-four hours after perforation of the tympanic membrane, the operation should follow at once, as also in case of vertigo and spontaneous nystagmus. Even without other signs, if the suppuration keeps up profuse for a month, the mastoid is probably involved. Terrier adds that cholesteatoma is a great purveyor of intracranial complications. Even in syphilis an operation is required, supplemented by specific treatment. Mastoiditis of mechanical nasal origin is not rare, secretions being forced into the eustachian tube by sneezing or blowing the nose; he has had seven such cases in the last few months, in which the infection spread directly to the mastoid. The severe complications in these cases confirm the necessity for operating immediately in mastoiditis of nasal origin, even if the temperature is normal. In any event, operate when there is suspicion of mastoiditis without waiting for absolute certainty. Diabetes entails a special predisposition to necrotic processes in bones; and mastoiditis is liable to be exceptionally grave in influenza, scarlet fever, diphtheria, measles and typhoid. The destruction in the first two proceeds unusually rapidly, but the recent epidemic of influenza usually spared the ear.

Schweizer Archiv. f. Neurol. und Psychiatrie, Zurich

1919, 5, No. 2

- Disturbance in Internal Speech. F. Lotmar.—p. 206. To be cont'd.
Inhibitions in Chorea. R. Mourgue.—p. 240. Cont'n.
Structure of Nerve Cells. J. Caramanis.—p. 264.
The Arm Region in the Cortex. H. Meier-Müller.—p. 270.
The Plantar Reflex. H. Bersot.—p. 305. Cont'n.
Fibers Between Thalamus and Frontal Brain. T. Fukuda.—p. 325.
Development of Choroid Plexus. C. v. Monakow.—p. 378.

Schweizerische medizinische Wochenschrift, Basel

Jan. 29, 1920, 50, No. 5

- *Abnormal Bending In of Ankle. H. Iselin.—p. 81.
*Measurement of Goiter. H. Hunziker.—p. 86.
Direct Local Treatment of Gonorrheal Spermatocystitis. H. Koller.—p. 87.
Rupture of Mesentery from Contusion. Stocker-Dreyer.—p. 90.
Technic for Raying after Removal of Cancers. H. Hopf and I. Iten.—p. 91.

Treatment of Bending in of the Ankle.—A wedge-shaped insole straightens the foot and cures the deformity in time but it has to be carefully graded to the exact degree of deformity. To measure this, Iselin has the man stand the foot on two superposed blocks of wood, the inner edges of which can be jacked up to the height required to bring the median axis of the foot and leg into a vertical line, determined by line and plummet. The wedge insole is then made to correspond to the slope of the upper block on the lower, as shown in the illustrations. In this connection Iselin discusses the Swiss army shoe and points out certain remediable defects in this and in civilian shoes.

Measurement of Goiters.—Hunziker measures the width of the thyroid and the height of the side lobes, in centimeter. Multiplying the two figures gives the area of a square in which the thyroid can be imagined to fit as an elliptical figure. The area of this square allows an estimate of the size of the thyroid in different persons and at different times in the same person. We thus have a reliable and easily ascertained measure for the thyroid so that goiters in different lands and at different periods can be compared. When the gland cannot be palpated, the record is 0; with 1:1, the record would be 1; with measurements of 6:5 the record would be 30; with measurements of 17:12 the record would be 204, and so on. He urges that the standard scale be adopted and large series of records obtained in different countries so that the actual prevalence of goiter and its size in a given region, its maximum at certain age and certain year or season, and other questions can be determined on an international scale.

Annali d'Igiene, Rome

October, 1919, 29, No. 10

- Biologic Variations of Shiga Bacillus in Epidemic of Dysentery. Maymone.—p. 653.
Technic for Preparing Bacterial Vaccines. M. L. Della Vida.—p. 653.

Epidemic of Bacillary Dysentery from Colon Bacilli Agglutinating with Flexner Serum. M. Almagià.—p. 685.
Prevalence and Clinical Pictures of Typhus During the European War. G. Sampietro.—p. 690. Conc'n.

Policlinico, Rome

Jan. 26, 1920, 27, No. 4

Lethargic Encephalitis: Symptoms and Course. G. Sabatini.—p. 97.
Idem: Bacteriology. G. Gabri.—p. 106.
Idem: Four Cases. C. F. Oggero.—p. 109.
Idem: On East Shore of Adriatic. L. Pergher.—p. 111.
Idem: History. L. and P. Fornara.—p. 113.

Lethargic Encephalitis.—Besides the five comprehensive articles listed above, the society transactions report a large number of cases of lethargic encephalitis at Bologna, Parma, Modena and Ancona. Sabatini mentions a case in which a man left Verona, where the disease was epidemic, and went to Calabria where the disease had not appeared at the time. Twenty days after his arrival he developed a typical case, which suggests that the incubation is about three weeks at least. The disease appeared in Italy last winter, but did not assume an epidemic character until this winter. He has had twenty-nine cases in his service at Rome. The lack of symptoms common to other diseases liable to be confused with it, the most reliable diagnostic sign. One of the earliest symptoms was a rhythmic twitching of muscles, especially of the rectus and transverse abdominal muscles, and in the arms, neck and face, similar to the jerking induced by an electric stimulus. The rhythm of this twitching of the abdominal muscles was about 40 per minute in one case. Roentgenoscopy showed that the diaphragm did not participate in the movement, and that it was independent of the respiration rate. Chilling accentuated it and it kept up during sleep, and morphin did not suspend it. This sign sometimes gave the clue to the clinical picture. In one case the twitching was restricted to the cremasters, the testicles being kept in continual movement. The next day the abdominal muscles shared in the movements, and necropsy confirmed the encephalitis. The jerking sometimes simulated actual chorea. These "chorea" cases proved fatal. Neuralgic pains formed the main symptoms in some cases, pains in the spine, back of the neck and on pressure of the eyeballs. In some of the fatal cases there was no somnolency at any time. In one case the whole syndrome was reduced to moderate fever, persisting mental confusion and profound slumber for six weeks. There is always fever at the outset, but it may subside promptly. The patients sleeping calmly may even increase in weight during the disease. Necropsy shows that any part of the cerebrospinal axis may be affected, and not merely the brain. The lesions are extremely minute and may be merely microscopic hemorrhages, but they explain the polymorphism of the symptoms and their variability. The cases all fall into one of the four types, the lethargic, the motor excitement to actual chorea, or tetany, the paralytic, and the mental confusion type. Gabri cultivated what he thinks is *Micrococcus tetragenus* from his three cases. Fornara relates that hexamethylenamin in two of his cases caused spasm of the bladder with tenesmus and retention of urine, compelling its suspension. In one case parenteral injection of milk was followed by great improvement; the fever dropped by crisis and the patient roused from heavy sleep. Others reported cultivation of a gram-positive diplococcus, and confirmed the punctiform hemorrhages in sections of the brain. Fua described a case in a babe of 4 weeks, with ptosis, strabismus and coma, which, he says, sustains the assumption that lethargic encephalitis is a form of epidemic poliomyelitis.

Riforma Medica, Naples

Dec. 6, 1919, 35, No. 49

Treatment of Purulent Pleurisy. S. Dalmazzoni.—p. 1065.
Clinic for Micromethod Research. A. Barlocco.—p. 1067.
Clinical Pictures in Influenza. A. Bertolini.—p. 1069.
Lymphogranulomatosis. C. Cantieri.—p. 1072.
Sutary Surgery. E. Aievoli.—p. 1080.

Purulent Pleurisy.—Dalmazzoni rejects local anesthesia for these operative cases on account of the danger from reflex action. He anesthetizes with the patient lying flat on his

back to insure the fullest possible expansion of the lungs, and then very cautiously turns him on his side with a cushion under the thorax to render convex the field of operation. His incision is 12 or 14 cm. long and follows the tenth rib, the center on a line with the middle of the scapula. He warns that to drain the pleura effectually we must not consider the cadaver but the position usually taken by the patient. He usually lies on the posterior hemithorax on the diseased side. About 3 cm. of the tenth rib are resected and more if necessary, but Dalmazzoni never rinses out the cavity nor introduces gauze into it, his reliance being on the efficient drainage and on keeping open the opening made. It is packed with gauze to insure this, and the opening is frequently cleansed with water and alcohol. He drains with a large tube 5 or 6 cm. long, traversed by another rubber tube, the transverse bar preventing the tube's slipping in too far. The drain could soon be removed and the drainage continued with a flat dressing, and the cure was complete in ten or twenty days. In twenty-two of his thirty cases thus treated the empyema was of influenzal origin. Lesions elsewhere were responsible for the deaths in the 9 per cent. fatal cases.

Lymphogranulomatosis.—Cantieri devotes nearly eight pages to the clinical and pathologic anatomic findings in a case, fatal in three months, in a man of 25.

Rivista di Clinica Pediatrica, Florence

November, 1919, 17, No. 11

*Hypothyroidism and Atrophy of Muscles. M. Pincherle.—p. 561.
*Agglutination of Proteus X in Various Children's Diseases. G. Fiore.—p. 598.
Special Pathology of Twins. C. Francioni.—p. 605; Reply. A. Borrino.—p. 606.

Hypothyroidism and Atrophy of Muscles.—Pincherle presents evidence to show the importance of the endocrine factor in the pathogenesis of defective nutrition and development of muscles. He describes with minute detail the case of a boy of 11, with unmistakable signs of thyroid deficiency from early childhood, actual congenital myxedema, on which became superposed progressive muscular atrophy. He has found only two analogous cases on record, and in one of them the coincidence was considered casual. In Pincherle's case the causal connection between the hypothyroidism and the muscular atrophy was brilliantly confirmed by the improvement under thyroid treatment. The atrophy was of the pseudohypertrophic type. The literature is reviewed, and the prospects of warding off or curing such muscular dystrophies by suitable organotherapy are extolled.

Agglutination of Proteus in Various Children's Diseases.—Fiore applied the agglutination test specific for typhus in from two to six cases of seven different diseases peculiar to childhood, and in eighteen other children with nephritis, acute rheumatism or gastro-intestinal disease. The response was constantly negative in all the forty-eight children tested with dilutions of from 1:200 to 1:10.

Rivista Critica di Clinica Medica, Florence

Oct. 25, 1919, 20, No. 43

*Tardy Osteoperiostitis with Inherited Syphilis. A. Varisco.—p. 505.

Tardy Osteoperiostitis with Inherited Syphilis.—The young woman had been apparently healthy, except for a few convulsions in infancy, until measles at 18. At 20 she complained of pains in the legs and large joints, and the latter began to enlarge in a few weeks, with a low continuous fever and drowsiness. The spinal fluid seemed to be normal. Not until the end of six months did the symptoms subside so she could leave the bed. After a few months of slight ups and downs, painful tumors developed in the crest of the tibia and other long bones and the clavicles, and numerous glands enlarged. After nearly a year from the first symptoms, a tentative course of mercurial treatment not only cleared up the diagnosis—the previously negative Wassermann reaction veering to positive—but resulted in practically a cure. There was nothing in the family history to suggest syphilis except the shape of the patient's teeth and a certain pigmentation of the face.

Nov. 8, 1919, **20**, No. 45

*True Infantilism. E. Bufalini.—p. 529. Begun in No. 44, p. 517.
Present Status of Cervical Ribs. Fornaseri.—p. 534.

True Infantilism.—Bufalini gives a detailed account of a case of true infantilism, the man of 20 presenting the complete physical and mental characteristics of a normal boy of 12. There was nothing to suggest endocrine disturbance or inherited taint. He theorizes to explain this type, ascribing it to an insufficiency of the primordial vital substance.

Nov. 15, 1919, **20**, No. 46

*Artificial Pneumothorax in Treatment of Pleurisy with Effusion. E. Riccioli.—p. 541. To be cont'd.
Epidemic Lethargic Encephalitis. Alesandri.—p. 545.

Artificial Pneumothorax in Pleurisy.—Riccioli comments on the prompt improvement in the six cases reported in which air was allowed to enter the thorax after evacuation of the effusion. The patients' ages ranged from 9 to 72.

Brazil-Medico, Rio de Janeiro

Dec. 13, 1919, **33**, No. 50

*Physiologic Section of Pneumogastrics in the Dog. M. Ozorio de Almeida.—p. 393.
*Postinfluenzal Intestinal Hemorrhage. A. Prado.—p. 394.

Experimental Blocking of the Pneumogastrics.—Ozorio has been studying the effects on the respiration from physiologic section of the pneumogastric nerves in the dog, by laving them with procain.

Postinfluenzal Intestinal Hemorrhage.—Prado has encountered cases of tardy hemorrhage from the bowel in persons who had been having the gastro-intestinal form of influenza. They resembled those of typhoid, but he does not know of any death from this cause.

Semana Médica, Buenos Aires

Nov. 20, 1919, **26**, No. 47

*Motor Plastic Amputations: Cinematization. G. Bosch Arana.—p. 621.
*Brain Tumors in Children. R. A. Rivarola.—p. 636.
*Influenza and Typhus. G. Sanguinetti.—p. 642.
*Endocrine Rheumatism. E. A. Lombardi.—p. 646
Fluorene as Reagent for Aldehyds. L. Guglielmelli and A. Delmon.—p. 653.

Motor Plastic Amputations.—Among Bosch's thirty-three illustrations are some which show the peculiar looking stump of the upper third of the thigh as remodeled for cinematization; then the details of the artificial leg provided to utilize the muscular force in the loops of the stump, and, finally, the movements of the foot as the patient flexes and extends the knee by control from the muscle loops. The foot can be swung through an arc of 30 degrees. The man thus walks by the natural bending of the knee, and in two months has already learned to manage his artificial leg quite well. Bosch urges others to continue work in this line, dwelling on the benefit to society and to the state, as well as to the individual, from this utilization of muscular energy hitherto lost by the old systems of mutilating surgery. The prosthetic appliances for leg and arm which he uses were constructed under his directions.

Brain Tumors in Children.—Rivarola's article is based on nineteen personal cases and 120 from the literature. He was impressed with the length of the interval in others' cases between the first examination and the diagnosis of the location of the tumor, and the further delay after this before the operation. Except syphilomas, all brain tumors, he declares, should be removed no matter what their nature may be. Lumbar puncture is of no use, and exposes to serious mishaps. Radiography is also no help in the diagnosis, except with tumors of the sella turcica. The tuberculin and Wassermann tests are also useless for determining the nature of the tumor. He suggests that there may be a field here for radium treatment. Tuberculomas form about 50 per cent. of the cases of brain tumor in children, while syphilomas form barely 0.3 per cent. The cerebellum is the preferential site of the tumor in children. Brain tumors in children are easily enucleated as a rule. The physiology of the child's brain differs from the adult; certain centers are not yet anatomically formed, and hence the manifestations of their

functioning are lacking from the clinical picture of brain tumors as we see it in adults; owing to this, diagnosticians are often misled. The first objective symptoms noticed by the family are very important for the diagnosis, besides the cardinal symptoms, headache, vomiting, constipation and edematous optic disk or optic neuritis. These symptoms combined point to a brain tumor, and the fundus findings are always pathologic. Mercurial treatment may be pushed but no more than two or three weeks should be wasted on it, while the child is being watched for other symptoms. The question then is whether the tumor is in the cerebellum or in one of the seven main areas of the brain. Greater precision is not necessary as the whole of one of these areas is exposed, and it is easy to detect symptoms traceable to such a large zone. The cerebellar, frontal, rolandic, parietal and pedunculocerebellar zones are responsible for fully 80 per cent. of all brain tumors in children, and these areas yield the most instructive symptoms. Perhaps this is because these zones are the better irrigated and most active functionally. Hemianopsia along with disturbances in gait, noticed by the parents before occipital symptoms developed, point to the cerebellum, disregarding the occipital manifestations as these are probably due to compression from a distance. If before the general convulsions developed, there were convulsive spasms of the muscles of the neck and shoulders, the frontal lobe should be suspected. If the child complained of its ear along with the intense headache, examine the temporal lobe. More than in surgery elsewhere, an early diagnosis and immediate operation should be the rule. He found only one case of syphiloma on record. This was in a girl of 9, and necropsy after a year of absolutely ineffectual specific treatment revealed the gumma which could easily have been removed during the eighteen months after the first symptoms.

Influenza and Typhus.—Sanguinetti presents arguments to show that dengue, influenza and typhus are linked together like measles and scarlet fever, or typhoid and colon bacillosis.

Hypothyroidism and Rheumatism.—Lombardi describes an extreme case of endocrine rheumatism in a woman of 53, with prompt recovery under thyroid treatment.

Siglo Médico, Madrid

Jan. 3, 1920, **67**, No. 3447

The Mechanism of Normal Digestion in Infants. E. Suñer.—p. 1.

Jan. 10, 1920, **67**, No. 3448

*Viscosity of the Blood. H. Rodriguez Pinilla.—p. 17.

*The Urine and the Wassermann Reaction. J. Arijón Gende.—p. 18.

Viscosity of the Blood.—Rodriguez discusses the viscosity of the blood and its bearing on a number of biologic problems.

The Urine and Hemolytic Tests.—Arijón tabulates the findings in a number of comparative tests made with the blood serum and the urine for deviation of complement. Nothing was found to indicate the presence of an antigen in urine even in cases with pronounced Wassermann reaction in the blood serum. It is theoretically possible, however, he admits, for certain urines to behave like an antigen in the Wassermann test; some of the colloids in the urine, when sufficiently concentrated, might act in this way.

Berliner klinische Wochenschrift, Berlin

Nov. 10, 1919, **56**, No. 45

Relations of Autonomic Nervous System to the Striated Muscle. E. Frank.—p. 1057. To be cont'd.

*A Third Form of Paratyphoid. F. H. Lewy and F. Schiff.—p. 1057
Fistulas of the Urinary Organs. M. Zondek.—p. 1060

*Autogenous Vaccine Treatment in Diplococcus Infection of the Urinary Organs. E. Pfister and W. Böhme.—p. 1063.

Apparatus for Exercising Cinematized Muscle Loops after Amputations. M. Blumenthal.—p. 1064.

Postbellum Campaign Against Tuberculosis in France. J. W. Samsom.—p. 1065.

A Third Form of Paratyphoid.—Lewy and Schiff described a third form of paratyphoid that they encountered in Asiatic Turkey. Neukirch, and, at about the same time, Weil, furnished the first information in regard to the causative agent (the Ersindjan bacillus) in 1915. Schiff first isolated the

bacillus in 1916 in Aleppo, Syria. Up to September, 1918, Lewy and Schiff had seen approximately eighty cases definitely established by bacteriologic examination. Very light infections were common among the native population. However, cases were observed, especially among the German soldiers in Palestine, that developed a protracted fever of a very irregular type and often ended fatally. The Ersindjan bacillus produces typically a septic infection that is characterized by remittent fever, bacteremia, a septic blood picture, embolic abscesses; hemorrhagic inflammation of the kidney, the intestine and the liver; minute abscesses and necrosis of the liver and kidneys, hemorrhages of the serous membranes, and a septic spleen. Accumulations of bacteria in certain parts may produce septic meningitis, septic pneumonia or pyelitis. While a septic course is not typical for paratyphoid A and B, it is the rule in the paratyphoid of which *B. Ersindjan* is the causative agent. Although this infection is very commonly associated with dysentery, influenza or malaria, it nevertheless seems to be a distinct morbid entity. The mode of transmission is probably by direct contact with infected persons, though it may possibly occur through eating certain foods. So far there have been no authentic cases of the infection in Germany. The Ersindjan bacillus received its name from the place where it was first isolated. Its resemblance to *Bacillus suispestifer* is marked.

Autogenous Vaccine Treatment in Diplococcus Infection of the Urinary Organs.—Pfister and Böhme give their experience with a micro-organism, a diplococcus, found in the urine of a patient who complained of headache and pain in the perineal region. The urine had a whitish tinge and albumin was present. The patient improved but the urine did not clear up. Following a "cold," the headache and back pains came on anew. In the urine sediment many red and white blood corpuscles were found; also an unusual number of gram-positive diplococci. A prostatitis was present, with many pus cells, but no bacteria. Functional tests of the kidneys revealed a diminished power of secretion and concentration. The Wassermann test was negative; also roentgenologic examination of the kidneys. Blood pressure was 110/70; albumin content, 0.1-1.0 per cent.; quantity of urine normal. The residual nitrogen in the blood was markedly increased. The diagnosis was chronic pyelonephritis (without casts), with aseptic prostatitis. An autogenous vaccine was prepared. The diplococcus was cultivated and a pure culture secured. In the blood of the patient agglutinins in the titer ratio of 1:500 were found. Immediately after the vaccine treatment was begun, the urine cleared up, the diplococci disappeared from the urine. The writers regard the case as interesting as showing that autogenous vaccine treatment may be successful in infections of the urinary organs other than those produced by *B. coli*. The identity of the diplococcus could not be fully established. It seemed to be a new invader.

Münchener medizinische Wochenschrift, Munich

Nov. 21, 1919, 66, No. 47

Graduated Exercises in the After-Treatment of Disease. H. Quincke.—p. 1339.
Statistical Showings in Consanguineous Marriages. F. Lenz.—p. 1340.
Direct Method of Testing Faradic Excitability. P. Erlacher.—p. 1342.
Rhythmic Pressure Massage (Cederschiöld). G. B. Schmidt.—p. 1343.
Contact Infection in Relation to Paratyphoid B. W. Schmid.—p. 1345.
Observations on the Sachs-Georgi Reaction. Felke and C. Wetzell.—p. 1347.
Generalized Emphysema in Influenza. A. Schwenkenbecher.—p. 1348.
Rachitis in Relation to Schlatter's Disease. Schlee.—p. 1349.
Tetany in War Prisoners. H. Bruns.—p. 1350.
Aut's Angina Treated by Rosenbach Tuberculin. C. Stuhl.—p. 1351.
Spontaneous Rupture of the Biceps Brachii by Direct Force. M. Schüleim.—p. 1352.
Water from the City Mains Used in Neo-Arsphenamin Injections. J. Katzenstein.—p. 1352.
Conditions Governing the Course of Tuberculosis. H. Hayek.—p. 1352. Conc'n.

Value of Physical Exercises in the After-Treatment of Internal Diseases.—Quincke emphasizes the great value of graduated physical exercises in the after-treatment not only of diseases affecting the joints and muscles but also in pleurisy, enteroptosis, chronic constipation, and in practically all internal diseases. Only a few patients need special exercises

adapted to their peculiar condition, but all convalescents will make more rapid and surer progress toward health if they are required regularly to go through such setting-up drills as are in use in the army and in the gymnasiums. Of course, the amount and the character of the exercise will depend on the condition of the convalescent. The first exercises after recovery and after rising from a sick bed should be taken alone, but after convalescents have partially recovered their strength there is added value in exercises carried out in groups or classes. Such exercises not only restore a normal blood circulation, but they are needed to give control of bodily movements, for long confinement to the bed will often have impaired the motor apparatus.

A More Direct Method for Testing the Faradic Excitability.—Erlacher gives a preliminary report of his investigations on the possibility of testing in a more direct manner the faradic excitability of paralyzed muscles. Instead of testing through the skin, as heretofore, he inserts about 2 cm. apart, two fine needles, previously immersed in alcohol, into the skin which has been disinfected with iodine or alcohol, and pushes them from 8 to 15 mm. deep into the muscle to be tested. The two needles are then connected with the respective poles of the faradic current by an uninsulated, soft copper wire, which is wound spirally around each needle and soldered to it. A simple form of interrupter is inserted. Weak currents such as are scarcely felt when applied to the tongue produce a distinct twitching of the muscle fibers lying between the two needles. Somewhat stronger currents cause a puckering of the area contiguous to the excited muscle. Still stronger currents—but not nearly so strong as are required in the percutaneous testing—produce a distinct contraction. As a rule, it is not necessary, when this method is used, to increase the current until a motor effect is produced, as the twitching of the muscle fibers will usually be sufficient. Muscles that by the percutaneous method were declared to be completely paralyzed were found to react when stimuli were applied by this direct method. It is evident that death of muscular tissue—from a faradic standpoint—does not take place so quickly nor so early as has been heretofore assumed. Erlacher claims, therefore, greater diagnostic value for his more delicate method of muscle testing.

Rhythmic Pressure and Release in the Cederschiöld Method of Massage.—Schmidt announces, after over ten years' experience, that the Cederschiöld method of manual massage is the most conservative and at the same time the most effective. He considers it the most conservative method because the soft parts that may have been injured are not exposed to further injury as is the case when they are kneaded, stroked and rubbed. It is effective because by the systematic application and removal of pressure as brought to bear on the periphery of a limb, a suction and pumping action is brought into play in the most excellent manner; congestion in the lymph glands and in the blood vessels is counteracted, and extravasated matter is more readily absorbed. By this method, in large cicatricial areas vascularization is stimulated and function is restored, whereas by frictional massage delicate tissues may be torn, and new, though slight, lacerations be produced. In applying rhythmic pressure to an upper extremity, the arm is encircled by the hand of the operator and the pressure is gradually increased until the arm is tightly grasped; the pressure is then slowly removed, and the operator advances a hand's breadth centrad, and proceeds as before until the whole arm has been thus massaged. In massage of the lower extremities and the trunk, both hands are used. The extensors and the flexors may be treated separately, and it is often convenient to use the bones as a base. Cederschiöld, following the example of Rosthorn, has found that rhythmic pressure massage may exert a favorable influence even in mental diseases and in depressive states.

Zentralblatt für Chirurgie, Leipzig

Jan. 31, 1920, 47, No. 5

*Blocking the Splanchnic Nerves. M. Kappis.—p. 98.
*Prevention of Caustic Strictures. F. Bonhoff.—p. 99.
*Wire Suture. A. Knoke.—p. 99.
*Access to Deep Phlegmon of the Axilla. W. Levy.—p. 101.

Blocking the Splanchnic Nerves.—Kappis remarks that Braun's method of injecting the anesthetic from the front confirms the ideal anesthesia of the viscera when the splanchnic nerves are blocked. Braun introduces the needle, through the laparotomy incision, along the lower margin of the liver, injecting 100 c.c. of a 0.5 per cent. procain-epinephrin solution, distributed on both sides of the aorta near the first lumbar vertebra. Kappis makes the injection from the rear, just below the twelfth rib, distributing the anesthetic by moving the tip of the needle 3 cm. upward and then 3 cm. downward, about 0.25 to 0.5 cm. from the spine, thus spreading the 50 c.c. on each side over a larger area than by his previous technic (mentioned in these columns, Feb. 21, 1920, p. 568).

Prevention of Strictures from Caustic Action.—Bonhoff relates that no stricture has developed during the two years since in a case of caustic injury of the esophagus in which he introduced at once a retention sound. It was worn until healing was complete, and it warded off cicatricial retraction of the walls. The caustic was ammonium chlorid (salmiak) in this case. Roux of Lausanne has recently reported similar success with this preventive catheterization.

Wire Suture.—Knoke has been using wire recently as other suture material is so scarce and poor. A method that has proved very satisfactory is to draw the wire through the two lips and cut it off, each end held with forceps. As many wires as are needed are introduced, the row of forceps on each side keeping them from slipping out. Then the ends of each wire are twisted together over a long roll of gauze by turning the corresponding forceps around each other.

Deep Phlegmon in the Axilla.—Levy expatiates on the difficulty of diagnosing these deep phlegmons which often prove fatal, as in two cases reported. There may be no local symptoms except a slight tenderness on the front of the shoulder, or a sensation of heaviness in the arm, or there may be nothing to call attention to the process except a history of some insignificant wound on a finger a week or two before, followed by high fever and general depression. If one operates on these findings alone, the results may be disappointing, but this should not deter from intervention when the general condition is grave. The chief danger is the possibility of the spread of the process. Some surgeons incise along the lower margin of the pectoralis major, but Levy found that the process, in one case described, could be fully exposed only by incising from the clavicle to and beyond the insertion of the pectoralis major on the upper arm, and cutting this muscle close to its insertion, and also cutting the pectoralis minor. These muscles heal readily without appreciable functional disturbance, he has found. This opens up the phlegmon, and its spread can be traced in three directions.

Zentralblatt für Gynäkologie, Leipzig

Jan. 31, 1920, 44, No. 5

- The Maternities and Illegitimate Children. E. Martin.—p. 121.
 *Ileus in the Pregnant. A. Hofmann.—p. 124.
 *Maceration of Living Child. H. Lorenzen.—p. 127.

Ileus in the Pregnant.—In the first of Hofmann's two cases, the woman developed ileus twice at the fifth month of a pregnancy, and prompt laparotomy corrected the obstruction from fibrous bands, each time, and also in the other case.

Maceration of Living Child.—The primipara of 26 in the case reported by Lorenzen seemed to be normal, and the child was spontaneously delivered. It weighed 3,210 gm. and the aspect was that of complete maceration, but by the end of a week the loose scraps of epidermis had been cast off, and the child thrived thereafter.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 20, 1919, 2, No. 25

- *The Language of Medical Writings. G. van Rijnberk.—p. 2009.
 *Sarcoma of Thyroid and Pancreas. E. C. Van Rijssel.—p. 2014.
 Will and Movement. A. A. Grünbaum.—p. 2025.
 Medical Inspectors of Schools and the Public Health. H. Aldershoff.—p. 2035.
 *Case of Quincke's Edema. H. Boltzen.—p. 2037.
 Embolism of Pulmonary Arteries. J. F. O. Huese.—p. 2040.

The Language of Medical Writings.—See editorial comment, page 893, on van Rijnberk's communication.

Sarcoma of Thyroid and Pancreas.—Van Rijssel found a tumor in the thyroid in 4 out of 650 cadavers; in another cadaver there was metastasis in the thyroid; in another the thyroid contained an adenoma and weighed nearly 73 gm. A seventh cadaver presented a rapidly growing primary giant-cell sarcoma in the thyroid with metastasis in the lungs. He has encountered another case of sarcoma in the thyroid in a woman of 61, inoperable within three weeks of the first signs of trouble, and death in less than six weeks, from multiple metastases. Both these cases confirmed the saying that a malignant tumor in the thyroid does not move with the trachea during swallowing, as simple goiter does. The cancer grows to adjacent organs. Among the total 6,400 cadavers examined there were 733 with carcinomas and 105 with sarcomas. The pancreas was the seat of the malignant disease in 25 cases, including only one of sarcoma. This was in a man of 25 and the sarcoma was of the giant cell type.

Quincke's Edema.—Boltzen reports a case in which attacks of migraine were accompanied with a set of symptoms which can be explained only as intra-abdominal angioneurotic edema appearing and subsiding with the migraine in a woman of 40.

Hygiea, Stockholm

Dec. 31, 1919, 81, No. 24

- *Spinal Cord Tumors. L. Ehrenberg.—p. 970.

Spinal Puncture Findings with Spinal Cord Tumors.—In Ehrenberg's eight cases the tumor was in the dorsal region in five and the cauda equina in the three others. He found in two cases moderate lymphocytosis accompanying the Nonne reaction; in another case both were absent. The findings indicated that the slight lymphocytosis, xanthochromia and large globulin content are a sign of grave obstruction of the fluid by the tumor. The pure Nonne reaction was observed only when the stasis was not very pronounced. It was found in the fluid the same above as below the tumor.

Ugeskrift for Læger, Copenhagen

Feb. 5, 1920, 82, No. 6

- *Prognosis with Influenzal Pneumonia. V. Bie.—p. 175.
 *Silver Salvarsan. H. Boas and A. Kissmeyer.—p. 191; Idem. A. Korsbjerg.—p. 196.

The Prognosis with Influenzal Pneumonia.—Bie states that 94 per cent. recovered of his 269 patients with unilateral pneumonia with a respiration rate of 34 or below, while only 54 per cent. recovered of those with a rate of 40 or above. With bilateral "flumonia," 74 per cent. recovered of the 28; with respiration of 39 or below and only 33 per cent. of the forty with a rate 40 or above. The total mortality in this group was 35 per cent. The respiration rate is thus an important element in the prognosis. The mortality was 33 per cent. in the pneumonia cases with albuminuria, but only 12 per cent. in those without albuminuria. The highest temperature noted was in a man who recovered; the lowest in one who died. These and other data mentioned show that the temperature has little value for the prognosis; the pulse is more instructive. All who died had a comparatively high pulse rate, 109 or 110. All the above records refer to the day the patient was brought to the hospital, or the next day. Bie's article is based on 1,653 patients, and he calls attention to the fact that not less than 15 per cent. of those receive in the hospital during the later months of the pandemic had the disease during the early months, and this was the third attack within a year in some.

Silver Salvarsan.—Boas and Kissmeyer relate that Kol presented them with 400 tubes of silver salvarsan, and they applied it in treatment of sixty-two syphilitics, with result that show it is at least the equal of old salvarsan, while is much more soluble. Korsbjerg reviews what others have published on the subject. His own experience with it thirty-two cases left a very favorable impression. He says that the drug contains 14 per cent. silver and 22.5 per cent. arsenic, and has a catalytic action.

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OPERATION AND REOPERATION FOR GALLSTONE DISEASE *

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WITH A REPORT ON PATHOLOGIC RESEARCH BY

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The question of recurrence of symptoms after surgical treatment of affections of the gallbladder and the biliary passages is one that has been much discussed during the past decade, and one which I believe will bear further consideration.

In 1916, reporting on more than a thousand operations on the gallbladder and the biliary passages in my service at the Lankenau (formerly the German) Hospital of Philadelphia, I found that 4.07 per cent. were reoperative cases (some of the patients having had three operations). Among 800 cases coming under my care in the same hospital since January, 1916, it appears that 8.5 per cent. (seventy cases) were secondary (there were also a few tertiary) operations. Confronted with this increase in recurrence, we naturally turn to seek the cause.

Of the recent series, fifty-one patients were originally operated on elsewhere by other surgeons, the remaining nineteen having been operated on by me at the Lankenau Hospital.

In thirty-six of the fifty-one, recurrence took place after a cholecystostomy and fifteen after a cholecystectomy. The longest interval between operations was seven years. This patient (reported in a previous communication), in fact, had been operated on twice before coming under my care. The first operation—cholecystostomy—for the relief of gallstones had been seventeen years previously, followed two years later by a choledochoduodenostomy and repair of an incisional hernia. At the third operation numerous adhesions were found about the anastomosis, the dilated common duct contained numerous stones as well as foul smelling grumous material, and the papilla of Vater was constricted.

The information regarding the condition found at the primary operation is not complete for all the cases of this group. Among those for which data are at hand, the shortest interval between operations was seven months. The symptoms in this case recurred seven months after the cholecystostomy. At the second operation, in addition to a mass of adhesions, stones again formed in the gallbladder, and stones were also found in the common duct. The gallbladder was

then removed, and the common duct emptied and drained. In another case—empyema—in which the colon bacillus was cultivated from the pus, the symptoms returned about seven months after the draining of the gallbladder. At the secondary operation—cholecystectomy—the pancreas was found chronically and markedly diseased.

The average interval between operations in this group was about five years and nine months, the average period of freedom from symptoms being about two years and three months.

In the fifteen "ectomized" cases, in addition to adhesions which were present in all but one, reoperation was necessitated by the presence of fistula in four instances, common duct obstruction, stone or stricture, nine, and pyloric obstruction three. Three of the patients in the group failed to derive any benefit from the primary operation; of the others, the longest interval of freedom from symptoms was four years, the average being about four months, and the average interval between operations about eight and a half months.

In considering my personal cases (those in which the primary and secondary operations were done by me), I find that in eight the symptoms recurred after primary cholecystostomy, one after choledochostomy, and ten after cholecystectomy, or 1.3 per cent. after removal and 10 per cent. after drainage operation.

Excluding the fifty-one cases of the first group (in which the patients were primarily operated on elsewhere), a primary cholecystectomy was performed in 611 and cholecystostomy in seventy-eight cases; other primary operations consisted of cholecystoduodenostomy, 27; choledochostomy, 11; choledochoduodenostomy, 1; exploratory, 16; pancreatostomy, 4, and duodenotomy, 1. The last represents a case of carcinoma of an aberrant pancreas found in the duodenum and excised.

The longest interval between operations in the drained cases was fourteen years, the shortest one month, with an average of six years and four months, while freedom from symptoms averaged three years, the longest period being thirteen years and the shortest one month.

Of the fourteen patients whose gallbladders were removed, five remained well for a period varying from two months to two years, two were not benefited by operation, and seven required secondary operation during convalescence.

Taking this recurrent series collectively, we find the pathologic condition most frequently noted after operation to be adhesions (noted thirty-nine times), while the most potent cause for return of symptoms after operation proved to be stone in the gallbladder and ducts (twenty-six), which coincides with our pre-

vious experience. Next in frequency, in the order named, were: persistence of infection, cholecystitis, seventeen; fistula, eleven—biliary, nine, duodenal, two; common duct obstruction, ten; chronic pancreatitis, eight; pancreatic lymphangitis, six; cholangitis, six; pyloric obstruction, five; dilatation of ducts, five—common duct, four, cystic duct, one; carcinoma, four—pancreas, two, gallbladder, two; stricture of the ampulla of Vater, two. Some of the cases presented one or more of the conditions mentioned.

ADHESIONS

It thus appears that adhesions were noted in 52 per cent. of the recurrent cases. The damaging and symptom-producing adhesions are principally those that form after cholecystectomy, and bind the duodenum, in some instances with the pylorus, the great omentum, and not infrequently, the hepatic flexure of the colon to the under surface of the liver. The symptoms caused by this deformity do not as a rule make their appearance for some time after the operation, or until they are in the process of organization and have reached the stage of contraction. There are exceptions to the rule, however, as for example persistent vomiting coming on from one to two weeks after operation, making it impossible to nourish the patient by mouth and where lavage demonstrates considerable gastric retention. I have seen this complication several times and for its relief have been obliged to do a posterior gastro-enterostomy, after which convalescence was rapid and uninterrupted.

It is generally admitted that gastro-enterostomy has its greatest usefulness in pyloric obstruction, and ulcer of the duodenum and stomach, but the operation also has a distinct place in a certain class of complicated gallstone cases. The very fact that gallstone disease, without operation, or after operation, can cause a condition requiring gastro-enterostomy should of itself be enough to do away forever with the expression "simple gallstones."

Ulcerative communication between the biliary passages, the stomach and the duodenum, not infrequently seen by those of us operating on patients previously operated on for gallstone disease, is a well-known phenomenon. That this can and does result in obstruction to the onflow of the stomach contents which, I am sorry to say, is not always recognized by the diagnostician, I know to be true.

Deferred action in these cases is inadvisable, and medication ineffectual. Rectal alimentation is a makeshift. Filling the rectum with sodium bicarbonate and glucose is not a very pleasant procedure, nor does it do any good except for the sorry consolation it may give of having done something for the patient, who usually dies.

In late cases of duodenal and pyloric obstruction I find it safer to do a posterior gastro-enterostomy than merely to separate adhesions, safer in that it is more permanent and less likely to require further operation. We all know that adhesions tend to recur and that nothing will prevent their formation if the raw surfaces cannot be covered with peritoneum. I have mentioned duodenal obstruction before pyloric, as in my experience the duodenum is more often obstructed than is the pylorus. In an old case of extensive adhesions in which the viscera normally in relation with the gallbladder are matted into an almost unrecognizable mass, the operation of separating and covering

the denuded surfaces is likely to be a very difficult procedure attended with great risk of tearing the duodenum and in some instances the colon. I have had this happen, and have had to resect the torn duodenum with the pylorus and make a posterior gastro-enterostomy.

The comparative ease with which the duodenum can be repaired so as not to expose the patient to the risk of a duodenal fistula, a most dangerous and difficult proposition with which to deal, reads well and sounds well, but the seriousness of it must ever be borne in mind. Occasionally after separating the adhesions and disentangling the viscera I interpose a portion of the great omentum between the liver, the duodenum and the pylorus, and have had no cause to regret the maneuver.

When the removal of the gallbladder is carefully and anatomically done, few adhesions should follow the operation. The gallbladder being fully exposed, the neighboring viscera well protected and kept out of the way by properly placed moist gauze pads, not gauze towels (held in place by retractors), with the gallbladder held taut, as it were, the first step in the operation is the opening of the right free border of the gastrohepatic omentum and the identification of the common, cystic and hepatic ducts and the cystic artery, which, with the hepatic artery, may be found anomalous. Anomalies of the ducts or arteries make little difference to the operator who knows his anatomy and does the operation in this manner. Lack of care in grasping the cystic duct with hemostatic forceps or the cystic artery, if perchance it has been severed is a frequent cause of injury to the common or hepatic duct with stricture or obstruction of the duct as a result. I refer to this later. For the occasional operator, therefore, I would suggest a drainage operation and not removal of the gallbladder. It is better for the patient to run the risk of recurrence of gallstones than be left with either a damaged common or hepatic duct, a condition I have had to deal with a number of times, and which warrants me in being very emphatic on this subject. In doing many hundreds of operations for gallstone disease, one becomes more or less familiar with the danger signals. I have never taken any stock in the theory of biliary duct angulation due to adhesions or the traction of a movable kidney as the cause of symptoms of gallstone disease, particularly jaundice, because I have not encountered any instances of the kind in my numerous operations.

That adhesions form after a drainage operation is true; but they are neither so dangerous nor so productive of serious trouble as are the adhesions that follow removal if the operation is not very gently and carefully done.

NEW STONE FORMATION

The second most common cause of recurrence of symptoms is the presence of stone or stones. With few exceptions the stones found at the second operation were probably present at the primary operation but were not detected. The time elapsing between the two operations, or perhaps a third one, has a bearing on the subject. Even though, at the first intervention all of the stones that were palpable to the finger or that could be removed with the scoop were taken out, subsequent stone formation occasionally takes place. It may happen that small granules of stone adhering to the mucosa of the gallbladder are present in the neck of the latter, or in the common or the hepatic duct, or

ramifications, and subsequently develop into one or more good-sized stones. Often after opening a gallbladder that has been removed I have seen such tiny stones adhering to or embedded in the mucosa. How long a time is required for these stones to develop cannot be definitely stated. Some of the patients returned in a few months, others remained well for thirteen years.

When a number of years have elapsed between the original operation and the reoperation there is every reason to believe new stone formation has taken place. And in nearly all cases, as before the first operation, a history of infection will in all likelihood be obtained for the interval between operations. The sequence of events in gallstone formation I believe to be: infection, inflammation, obstruction to drainage, retention—bile stasis—proliferation of epithelium, formation of cholesterol, etc. In recurrence after drainage operations we know that it is not uncommon to find stones. For the recurrences after removal of the gallbladder, with the subsequent presence of stone or stones in the common duct or the hepatic duct, the most plausible explanation is that a small stone located high up has descended and has lodged either in the hepatic or in the common duct and there increased in size until it is too large to be passed and has thus caused obstruction. I have observed this in a number of instances; in fact, I have seen it occur three times in the same patient before obtaining complete freedom from recurrence. In some of these cases I have been able to predict the probability of a return of symptoms, especially when I had been able to feel a stone high up in the duct, but could not remove it; or when, having brought the stone into the hepatic duct, it has slipped away and has been lost; or when I have found the ducts filled with sandy material, and when, after removing as much of the latter as possible, with the ducts laid open as far as possible, I have instituted prolonged drainage. Even in these cases it is no surprise to learn of subsequent common duct obstruction by stone.

CHRONIC CHOLECYSTITIS

The third most common cause of recurrence—persistence of infection—in the shape of chronic cholecystitis, I believe to be inexcusable. First of all, the frequency of recurrence from this cause lends support to the theory that noncalculous cholecystitis is a clinical entity distinct from the calculous gallbladder inflammation, and justifies removal of the gallbladder in such cases. Furthermore, it is inexcusable, in view of the fact that dyspepsia or chronic indigestion is not a clinical entity of itself, but the accompaniment or the result of a greater or less degree of a pathologic condition in one or the other of the abdominal viscera, and that next to appendicitis, the most common type of indigestion is gallbladder dyspepsia. The differentiation between the two is not always possible except by operation, and even then one cannot always tell whether or how far the appendix is also responsible for the symptoms, in those cases in which the gallbladder has undergone pathologic changes. Owing to this uncertainty, it becomes necessary in the majority of cases to remove both the appendix and the gallbladder. This brings up the question of priority of responsibility for the symptomatology. You are all, no doubt, aware of my conviction that the guilt for most of the upper abdominal ailments lies primarily within the appendix, although I may say in passing that I am

not unmindful of other possible sources of focal infection. How rarely do we find an appendix, removed as a routine procedure in our abdominal operations, that is not diseased, and markedly so, in most instances?

Chronic cholecystitis is not always difficult to diagnose; it can generally be recognized by a proper correlation of the history and the results of physical examination, especially local tenderness and more or less local rigidity. In cases of doubt we can call on the roentgen ray and various laboratory methods of examining the condition of the stomach, duodenum, pancreas, intestinal tract, etc. Having once arrived at the diagnosis, prompt action is essential. Dilly-dallying with medicines, in my experience, not only profits the patient nothing, but rather favors further visceral involvement and the possible extension of the process by way of the lymphatics or the blood stream to other important organs. This possibility is well illustrated by the researches carried on in the pathologic department of the Lankenau Hospital under the able direction of Dr. Stanley Reimann, whose investigations I have incorporated in this paper. This interesting work of Reimann, I believe, should settle the question of medical versus surgical treatment of persistence of infection in chronic cholecystitis and its responsibility for so large a percentage of recurrences after cholecystostomy.

OTHER CAUSES OF RECURRENCE

The recurrent series includes ten cases of noncalculous common duct obstruction. Six were due to stricture, three to scar tissue, and one to ulceration.

The principles involved in the treatment of obstruction of the common duct by stricture, scar tissue and ulceration are practically the same. In stricture of the common duct, whether annular or linear, the duct is laid open to the extent of involvement in the line of the duct, and drainage established by the T-tube; for annular stricture involving a wide portion of the duct resection and end-to-end anastomosis is best; or if the stricture is too near the duodenum to make this feasible, anastomosis of the proximal end into the duodenum and closure of the distal end can be done, this layer of suture being reinforced by the great omentum. These operations I have done a number of times with good result.

In ulceration of the duct, the treatment is practically the same as for stricture. Obstruction of the duct by scar tissue occurs where the duct has been cut away, and the scar tissue forms in the shape of a cord connecting the two ends. Under these circumstances the most difficult portion of the operation is to identify the lower end of the duct. The proximal end, unless well within the transverse fissure of the liver is, as a rule, not so difficult to identify if we aspirate with the hypodermic syringe. When the greater portion of the duct is destroyed, it is best to mobilize the duodenum and anastomose the proximal end to the duodenum. Sometimes the T-tube or a small piece of rubber tubing introduced into the end of the duct and the duodenum can be used to advantage in the anastomosis. I always reinforce the anastomosis with the greater and the lesser omentum. This, however, is difficult and trying surgery, calling for the greatest gentleness of manipulation, patience and utmost skill, ingenuity and judgment.

Biliary fistulas, of which there are nine in the series, are practically all the result of stone in the common duct, and can be obliterated only by relieving the

obstruction. This type of fistula rarely is due to malignancy, but when attributable to such cause is nearly always irreparable. Quite as serious is duodenal fistula, reported twice in the series. Resection, pylorotomy and gastro-enterostomy are the procedures indicated, but they are not always possible and not always successful, owing to the depleted condition of the patient.

It will be noted that chronic pancreatitis and chronic pancreatic lymphangitis were the cause of twelve recurrences. While pancreatic lymphangitis is frequently corrected by removal of the gallbladder, this does not apply to chronic pancreatitis, particularly in the long-standing cases. Although I have so often called attention to the importance of pancreatic lymphangitis as a forerunner of chronic pancreatitis, I cannot refrain from mentioning it once more as a factor to be seriously reckoned with in gallstone disease surgery. Drainage, of course, is the *sine qua non* in the presence of chronic pancreatitis, and, if, owing to diseased condition of the gallbladder and the cystic duct, cholecystotomy is not possible, drainage must be established through the common duct.

Duct drainage is also indicated in cholangitis, the result of gallstone disease, and must be continued for a number of weeks. I have known patients who have carried a drainage tube in the common duct for as long as four years; it is only in very obstinate cases, however, that such prolonged drainage is required. The simplest means of accomplishing this is by way of the gallbladder; but when this is not feasible, drainage through a cholecystoduodenostomy or by way of the common duct will be necessary. Incidentally, I may remark that biliary cirrhosis may result from chronic cholangitis if not given the benefit of radical surgery.

Dilatation of the common duct in the presence of an irremovable cause is best treated by a choledochoduodenostomy—not by any means a very difficult thing to do with the duct enlarged.

Benign stricture of the papilla of Vater, which is not infrequent, I have always been able to correct by dilatation through an incision of the common duct.

Carcinoma of the head of the pancreas, as well as carcinoma of the ampulla of Vater, or the common or hepatic duct cannot always be differentiated except by opening the abdomen; nor can the differentiation of obstruction of the common duct by a silent stone always be differentiated from malignancy. I have seen a number of confusing cases which were cleared up only by operation. Carcinoma of the gallbladder is another one of the uncertain diagnoses, except in the presence of a palpable swelling which can be identified, or perhaps by roentgen-ray demonstration. It is worth mentioning that the majority of cases of carcinoma in which I have operated have been associated with stone; furthermore, I have no hesitancy in saying that I believe persistent cholecystic infection is primarily the responsible agent in the causation of this most unfortunate condition. It may not be out of place for me to mention a case of carcinoma of the fundus of the gallbladder that had not metastasized, but was adherent to the hepatic flexure of the colon, indenting the colon to such an extent that the roentgen-ray seemed to indicate carcinoma of the bowel. This patient has remained well for more than two years since the operation (cholecystectomy).

The great variance between recurrences after radical surgery of the gallbladder and those that take place

after conservative surgery leads to the manifest conclusion that radical treatment gives the greater prospect of a permanent cure. Perhaps if the work recently reported by Vincent Lyon¹ of Philadelphia on the physiologic drainage of the gallbladder based on Meltzer's theory of contrary innervation can be developed into a more practical one—practical in the sense that any but the highly trained specialist can make use of it—we may obtain a valuable aid in early diagnosis and the possible prevention of the serious consequences of biliary stasis. For the present, however, radical surgery, although it falls short of being ideal surgery, is the best means we have of removing a pathologic condition and its pernicious effects. "If thy right hand offend, cut it off."

PATHOLOGIC REPORT BY DR. REIMANN ON RELATION OF STREPTOCOCCUS TO GALLBLADDER DISEASE

In classifying the pathologic histology of gallbladders, we have recognized an interstitial involvement of both acute and chronic nature in by far the large majority. Simple involvement of the mucosa was seldom encountered. The interstitial involvement, that is, infiltration of either acute or chronic inflammatory products into submucosa, muscularis and peritoneum, means only one thing—that organisms or their toxins or both are present in the walls of this organ. This picture makes plain the reasons for the frequent peritoneal adhesions, pancreatic lymphangitis and lymphadenitis, and chronic pancreatitis. Infection, of course, in the largest proportion of cases comes from within the lumen of the gallbladder.

A direct way of approaching this subject is afforded by the method developed by Rosenow and his associates. It consists of removing surface infection by either washing the organ, taken directly from the hands of the surgeon, in large volumes of saline solution, or dipping it momentarily in boiling water, then grinding it up in a meat grinder, and triturating with sand and saline solution. This procedure is carried out in a specially constructed box which allows of sterilization. The ground-up tissue is then planted in special mediums. Rosenow's results have indicated the presence of streptococci in the walls of the gallbladder as well as in other organs.

Forty-five gallbladders were treated by us in this way, and streptococci, all of the *S. viridans* variety, were found in nine instances, or 20 per cent. The pathologic examination of these gallbladders disclosed that all had a marked interstitial involvement. In more than half, there were acute changes engrafted on obvious preexisting chronic ones. Seven of the nine contained calculi. Other organisms were detected in many; but, since the discovery of streptococci was the main object, these were not definitely identified. In the other thirty-six specimens, practically half showed lesions that were confined entirely to the mucosa. The others showed more or less interstitial infiltrations of a chronic nature. Four showed acute involvement as well.

Surgical and pathologic experience demonstrates over and over again that in most instances the gallbladder in an operative patient has been the subject of at least several acute inflammatory processes. In a number, however, there has possibly been present a chronic, slowly progressing inflammation from the start.

1. Lyon, B. B. V.: Diagnosis and Treatment of Diseases of the Gallbladder and Biliary Ducts, J. A. M. A. 73: 980 (Sept. 27) 1919.

The clinical experience is that a gallbladder which is once given trouble and recovered without operative interference will, in a large majority of instances, make its presence known again, usually in a more unfavorable way. This is quite reasonable when streptococci can be so easily demonstrated in the walls of at least 50 per cent. (in Brown's series in 50 per cent.). The ability of streptococci to remain latent for long periods of time is too well known to require emphasis. A scheme of treatment based on the laws of contrary nervous innervation must take this infection of the gallbladder into very serious consideration. The instillation of magnesium sulphate and other such materials by means of a tube into the duodenum may cause the gallbladder to empty itself, and thus be of advantage in draining the infection from within the lumen of the organ. It seems unlikely, however, that infection within its walls can be removed by this means.

The question of elective affinity of these streptococci has been investigated, and careful examinations were made of the gallbladders of rabbits in which recovered human streptococci were intravenously administered. It was recognized that rabbits are, on the whole, somewhat resistant to streptococci. The organisms were isolated from the human gallbladders, were suspended in saline solution, and injected intravenously into a number of differently controlled animals. Two special tests were used: one was presumably normal, and in the other a point of lowered resistance was induced by clamping the gallbladder with a hemostat. None of the animals died from the injection of streptococci. They were killed at various intervals, and the organs and fluids examined and cultures taken. No streptococci were recovered from any specimen in any case after the second day after injection. They were recovered, however, as a routine, in all the organs and fluids in animals killed on or previous to the second day. These included the gallbladder, bile, liver, kidney, heart's blood and spleen. Cholecystitis was not present grossly or microscopically in any of the previously uninjured gallbladders. The time allowed to elapse between operation and injury of the gallbladder, and the injection of the streptococci, varied from immediately to two weeks. After several days, recovery from the operation, as evidenced by the behavior of the rabbit, was perfect. Microscopically, these injured gallbladders showed the usual processes of necrosis to fairly complete organization at the site of injury, but no especial lesion beyond this zone of reaction.

From the whole series of experiments, the conclusion must be reached that the particular streptococci recovered from human gallbladders and injected intravenously into rabbits showed no elective affinity for the gallbladders of the animals; at least not with one exception of what seemed an adequate number of organisms.

This conclusion in itself, however, does not negative the importance of the streptococci in the human gallbladder. It is only a fact in the biology of the organisms. Their importance in the particular human being from whom they were recovered cannot, of course, be positively evaluated; but the following points may well be remembered:

With streptococci in the gallbladder, a chronic toxemia may be present for long periods of time; a constant stimulus for lymphangitis and connective tissue proliferation is present, and an opportunity for general bacteremia is always at hand.

IDEALS AND THEIR FUNCTION IN MEDICAL EDUCATION *

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NEW YORK

The influence of the war on medical research, public health and medical education has been notable. Medical army officers of different nations have been in close association; research councils have exchanged suggestions and ideas; investigation has been stimulated; new possibilities of immunology have been discovered; important advances in surgical technic have been made.

Public health policies have been profoundly affected; camp sanitation has been carried to higher levels of achievement; the American army in Europe made a new record in the control of venereal diseases. The League of Red Cross Societies represents a movement in the interests of preventive medicine on an international scale. The work of the International Health Board in many countries has played an appreciable rôle. In all this, standards and methods of medical education have been necessarily involved.

Evidences of an almost universal interest in the training of physicians and public health officers accumulate. The British "unit" plan, which, with the opening of this year and under the auspices of the board of education, is being given a trial in four medical schools of London, is a significant experiment. In Belgium there is agitation for a reorganization of medical training under the auspices of the University of Brussels. Pathology and public health departments have been introduced in two medical schools in Brazil, and are influencing the other divisions of these institutions. A strike of medical students in Lima, Peru, against the alleged inefficiency of professors in the medical school is a symptom of the times. In China a modern medical school is being opened in Peking under American auspices. At Tsinanfu and Changsha, progress is being made. The University of Hongkong has a program for the modernizing and development of its medical department. The Chinese government medical schools are giving evidences of awakened interest and of improved methods. The Siamese government is seeking cooperation in the creation of a medical school in Bangkok. In the Near East there are several projects for new centers of medical teaching. Medical students are coming to the United States in increasing numbers from Japan, China, Czechoslovakia, Poland and Brazil.

IDEALS OF MODERN MEDICAL TEACHING

In order to measure achievement and to guide progress there is need of ideals or standards by which to appraise existing institutions and methods. Without tests of this kind there is danger that opportunism, provincialism, even a narrow nationalism, will prevent the development of medical education on a broad, international basis. To be of value, ideals must not be merely *a priori* and abstract aims: They must be rational projections of tested experience; they must combine, in one organic whole, elements each of which has somewhere proved its value. For example, the American type of medical education has incorporated features from the German laboratory institute, from the English clinical clerkship, and from other sources.

* Read before the Annual Congress on Medical Education and Licensure, Chicago, March 1, 1920.

The service which ideals and standards can render has been conspicuously illustrated by the Carnegie reports on medical education in the United States and in Europe, and by the activities of the Council on Medical Education of the American Medical Association. Thanks to these agencies, the main outlines of an efficient system of medical education have been worked out and generally accepted.

It is well to recognize the relativity of ideals. In human institutions there are no absolute standards. The highest ideal may be approximated in a few medical schools in which methods may be tested and leaders trained; but it would be a serious mistake not to recognize various degrees of achievement. The influence of local conditions, the possibilities of economic support, relations with other university units, must be taken into account. All that can be confidently affirmed is that some institutions fall below any standard that can be recognized as guaranteeing results which will safeguard the public and protect the profession. The number of such schools in the United States grows steadily smaller.

There is danger that the existence of a standard may force a formal rather than a real compliance with ideals. A premature effort to conform to an accepted standard may do positive harm. For example, there is reason to believe that in the case of medical schools in the South, where high school systems have had to be developed within a brief period, there has been an overstimulation of secondary and college education; that three-year high schools have changed to a four-year curriculum with little or no additional resources or increases in numbers and efficiency of teaching staff, and that colleges have offered courses which they are not prepared to give efficiently. Moreover, the "Class A" of the American Medical Association, having been accepted by state boards of medical examiners and thus become a part of the official machinery, has been extended in such a way as to produce serious anomalies. These will doubtless be largely removed as a result of the new survey which has recently been completed.

One of the ideals of modern medical teaching which needs constant emphasis is the provision of the best type of medical care for the sick. Laboratory and clinical methods must be thought of as a protection to the patient. Careful diagnosis, resourceful treatment, constant watchfulness are sources of safety and hope to those who come under the care of a modern university hospital. The prestige of the clinical teachers who are in charge is always at stake. The mutual scrutiny of members of the teaching staff, the alertness of students, together with unremitting search for new truth and its application to disease, make the teaching hospital the best place for the sick.

ESSENTIALS TO THE MAINTENANCE OF IDEALS

The widening conception of the physician as a social functionary, the enlarging theory of medicine as something which deals with the whole patient in his social environment, the demand for knowledge, insight and intelligent sympathy, the increasingly scientific nature of modern medicine call for a sound and broad training as a prerequisite for medical education. The demands made on the secondary schools and colleges are insistent and unrelenting. Attention has often been called to the serious situation which is created by this need of thorough preparation. Efforts must be made to improve and abbreviate the elementary and secondary

curriculum. Experts in the field of education are confident that time can be saved. By the frequent promotion of abler pupils, by the elimination of useless repetition, by concentration on fundamental things, by more intelligent methods of instruction it is reasonable to believe that two years could be saved and better results secured.

Medical education is so dependent on the general educational system that progress will necessarily be slow. This is especially true in the South. The Canadian plan for a six-year medical course so far as the better schools are concerned reflects a dissatisfaction with the preparation of students. It is to be hoped, however, that this policy will be temporary; for, as Dr. Colwell has clearly shown, there is great value in a nonmedical school preparation if this can be of the right sort.

Limitation of numbers is essential to the maintenance of ideals. There is a ratio between students and laboratory and clinical teaching facilities which cannot be safely ignored. The days of mass lectures are numbered. The constant use of microscope and culture tube by the individual student, the system of clinical clerkships, the reduction of bedside groups to a small number, the need of continual contact between teachers and students preclude the didactic, wholesale devices of earlier days. To admit a larger number of students than can be properly trained in accordance with scientific methods is vitally to impair the character of a school's work. It is a sacrifice of ideals. If it is desired to provide for larger classes, duplicate units of staff may be added and existing laboratory facilities more completely utilized. The corresponding duplication of hospitals, however, involves large additional costs.

In medical education the relation of the laboratory and the clinical years is organic. The antithesis which is often set up between these two aspects of medical education is most unfortunate. In the first and second years, the chief emphasis is laid on work in the laboratories; but this training ought to be extended right into the clinical phases of the curriculum. While it will usually happen that laboratory teachers will be graduates in medicine, many able laboratory men without the M.D. degree have demonstrated their capacity to develop cooperative and sympathetic team-work with clinical departments. The students in the laboratories should be frequently reminded of the bearing of their present work on their future responsibilities. The realization that the ideals of the laboratory are inseparable from rationalized clinical experience is equally essential. A few institutions are making systematic efforts to bring first and second year students in contact with dispensary and hospital problems, and into association with clinical teachers through occasional clinical lectures. The geographic separation of the laboratory work from that of the hospital and dispensary is a serious handicap to effective education.

In the clinical years it is essential to develop observation and reasoning power, to train students in the recognition of the early signs of disease. There is certain value in the extravagant statements of a man like McKenzie who, in the stress he lays on the importance of contact with patients and of observational methods, seems to discredit the diagnostic resources of the laboratory. The dispensary as a means of educating students in the recognition of disease in its early stages needs greater emphasis. It is time to reconsider the whole problem of dispensary organization. Fra

entary periods of service by busy practitioners, hasty diagnosis, sometimes by clerks, are not consistent with the best interests of the clientele and do not provide satisfactory conditions of medical instruction. One of the pressing problems of medical education is found at this point here. Instructors must be paid and be asked to give a better type of service under more favorable conditions. The student needs to assume responsibility under supervision. It is important for him, in connection with social service, to make domiciliary visits, and to recognize the environment of the patient as an essential part of the problem of disease.

As to the hospital, it is recognized that effective teaching can be secured only in an institution which is under the complete control of the medical school. The devices of clinical clerkships, the individual responsibility of students, close relations between bedside and laboratory, the proper organization of the teaching staff, permanence of tenure, team-work, necropsy conferences, case conferences with physicians and social service workers, are all factors in the development of clinical training of the right type.

The ideals of clinical teaching involve one of the moot questions of contemporary medical education. The analogy of the development of laboratory leadership from the practitioner to the professional teacher is being applied to the problem of clinical instruction. Perhaps in the discussion of the "full-time" plan too much stress has been laid on the word "time." It might be better to use other terms as, for example, vocational and avocational teaching. That leadership in clinical teaching should be in the hands of men whose chief concern is the care of hospital and dispensary patients, the teaching of students, and the prosecution of research is struggling successfully for recognition. In other words, it is increasingly obvious that the vocational rather than avocational principle is to prevail in this field.

Illuminating experiments are being tried with reference to this ideal. Johns Hopkins, Yale, Washington University and the University of Chicago are committed to a trial of the idea of full-time in the sense that heads of the chief department and their immediate staff concentrate on their university duties. Other proposals call for chief concentration on hospital teaching, with some opportunity for incidental consultation practice. In still other cases, young resident physicians and surgeons will give their whole time to the organization and administration of hospital services and instruction, while the practitioner or avocational teachers carry responsibility for a large part of the teaching. This situation is in harmony with experimental, scientific methods. Under varying conditions the different plans will be given a test. The results will be watched with interest.

THE UNDERGRADUATE CURRICULUM

The question of differentiation in the undergraduate medical course is raised in one or two important ways. The curriculum is now so overcrowded that the proposal to introduce new subjects is naturally and justifiably resisted. There is now no room for specialties except in a superficial way. Specialization in the ordinary sense is quite impossible. Differentiation, however, for various forms of preventive medicine, e. g., public health administration, industrial hygiene and mental hygiene, seems feasible to some degree. Elective courses, especially in the fourth year, are being offered. It seems well to secure sufficient flexibility so

that men who have definitely chosen careers in some form of institutional or public health work may combine with their technical preparation a fundamental and sound course in medicine.

In spite of the overcrowding to which reference has been made, there is an increasing demand for the introduction in undergraduate teaching of such subjects as preventive medicine, psychiatry, institutional administration and some knowledge of social amelioration through clinics, popular education, improved housing, better food, recreation and the development of community responsibility. The introduction of medical sociology in the premedical course would be of distinct value. Something may be accomplished through lectures, conferences and visits included in the regular curriculum. Washington University Medical School is inaugurating a plan of this kind. The case conferences with social service workers in the Massachusetts General Hospital have already been mentioned. Dispensary experience has an important bearing on this subject. It is desirable that more and more emphasis should be laid on the medical practitioner's social responsibilities and on the changing standards and ideas of the times with respect to medicine and public health. Such a spirit or attitude, however, will be a relatively slow growth. Chief reliance must be placed on the daily influence of the teaching staff. Unless instructors are in sympathy with these newer developments, the mechanism of extra lectures and other devices will accomplish little.

The advancement of medical science will be a conscious purpose of the ideal medical school. Research in such an institution is not an incidental by-product or merely a means of stimulating teachers. It is a definite and persistent aim. It involves constant conference and planning and cooperation by all the departments concerned. Independent institutions for research cannot be expected to assume the entire responsibility in this field. Most of the workers for such institutions must be trained in the medical schools themselves. This responsibility for research calls for large expenditure for buildings, equipment, supplies and, above all, for a staff capable of making significant contributions to medical science. Only a few centers, in the nature of the case, will be in a position to perform this function of investigation in a systematic way. It is a mistake for institutions without adequate resources in men and materials to deflect to research time and energy which should be devoted to the undergraduate teaching. This is not to imply that many individuals even in such schools cannot or will not find some opportunity for investigative tasks.

GRADUATE MEDICAL STUDY

The crowding of the undergraduate curriculum, which has already been mentioned, means that specialist preparation must become the subject of graduate study. Postgraduate short courses have their value, but genuine graduate study can be carried on only where the best opportunities for laboratory training and clinical experience under the right sort of leadership are available. The University of Minnesota-Mayo Foundation experiment is showing promise. More than 130 graduate students are pursuing courses which lead to higher degrees on a university basis. In other institutions, similar movements are under way. As in the case of research, only a few institutions can be equipped and manned for offering genuine graduate instruction.

The proposed one-year courses for the specialties under the auspices of the New York Association for Medical Education suggest interesting possibilities. The clinical resources of a great city, and the presence of a large number of men recognized as specialists, offer an opportunity for the organization of teaching facilities. Success would seem to depend on the degree to which qualified teachers can give sufficient time to the work under satisfactory conditions of laboratory service and of access to controlled clinical material.

Continuation courses for practitioners represent a need in medical education which deserves careful consideration. Modern medicine insists that access to laboratory and hospital is essential to the maintenance and growth of professional power. Yet a great majority of physicians have no contact with these agencies. These practitioners are dependent on journals and on short courses for keeping abreast of professional progress. A relatively few take full advantage of these opportunities. There is pressing need of a widespread movement to enable physicians to continue their medical education. Before the war the American Medical Association offered a postgraduate course, a combination of correspondence instruction with group conferences. The Wisconsin University Extension Division is now maintaining a system of clinical instruction throughout the state. The possibilities of continuation courses in connection with diagnostic laboratories, rural hospitals and public health centers are obvious. There seems to be an opportunity for the development of a country-wide system of medical education for practitioners.

TWO GROUPS OF MEDICAL SCHOOLS

Judged by the criteria which are suggested in this paper, existing medical schools fitting the present need fall into two general groups:

1. *University Centers for Teaching and Investigation.*—The chief characteristics of these institutions are: broad and thorough preparation; limitation of numbers in proportion to facilities and staff; well-rounded laboratory equipment with professional teaching corps; complete control of adequate hospital and dispensary facilities with vocational leadership in the clinical departments, which include the chief specialties; practitioner or avocational clinical teachers organized systemically into a unified staff; geographic concentration of all phases of plant and instruction; laboratories and clinics in close relations of cooperation and interdependence; research a conscious purpose; facilities for graduate study.

2. *Training Centers, Parts of Academic Institutions.*—Two-year college requirement; limitation of numbers; fundamental laboratory facilities with professional teachers; control of appointments to hospital and dispensary staff; practitioner clinical teachers well organized in long service periods, assisted by full-time resident and other assistants; concentration of buildings and work; cooperation between laboratories and clinics; some opportunity for research by staff members.

ASSISTANCE TO MEDICAL EDUCATION

As to the policy of the General Education Board and the Rockefeller Foundation with regard to assistance to medical education, it may be said that there is no one, inflexible type of organization which it is proposed to suggest to all institutions. Aid has been given and will continue to be given to a few centers of the higher

type, but assistance is also being considered with respect to a number of institutions less highly developed. The General Education Board cooperates with medical schools in the United States, while the Rockefeller Foundation falls the opportunity to work with medical centers in Canada and in other countries.

61 Broadway.

THE LARGER FUNCTION OF STATE UNIVERSITY MEDICAL SCHOOLS*

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IOWA CITY

Within recent years there has come about a changed conception in regard to the responsibility of the general public for welfare policies such as public education, public improvements, standards of living, and health. Within the last century we have seen America develop a great public educational system in which the state has undertaken to make provision for the education of persons of types of ability ranging from the subnormal to the keenest student in the land. As the years have gone by, each decade has shown a markedly increased willingness on the part of the state to provide for new variations in the educational needs of the public, until at the present moment it is hard to find a state that has not only assumed large responsibility for the training provided in elementary schools, high schools and ordinary collegiate institutions, but also made provision for the training in technical fields—agriculture, engineering, commerce, law, medicine. In fact, an analysis of the development of state education confirms the prophecy that as the years go by the public, operating through the state, will ultimately respond to any well thought out demand on the part of educational leaders.

Paralleling this development in education has come an ever increasing conception of public responsibility for the care of certain cases of defectives, the insane, tuberculous and others. States have vied with each other in the organization and development of elaborate systems for the care of these unfortunates.

In recent years there has come a growing consciousness of the importance of the period of youth in a scheme of life such as ours: witness legislation for compulsory education, continuation schools, and regulation of the hours of child labor.

It is but a step farther for the state to interest itself in the health of children. It is obvious that neglect in the care of children means not only an enormous economic loss in the matter of self help and production, but also untold suffering in succeeding generations.

This interest in the health of children has been expressed locally by provision for medical inspection and school nursing. Perhaps Michigan is entitled to the distinction of being the first state to provide a state-wide hospital service for children needing attention. Iowa quickly followed, and later Oregon made similar provision.

LEGISLATION IN IOWA

Five years ago the general assembly of the state of Iowa enacted the Perkins law, which made provision for the surgical, medical and hospital care of all children in the state under 16 years of age whose parent

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were unable to meet the expense involved. Four years later, further legislation was enacted extending this type of service to indigent adults, so that at present the state of Iowa makes provision for the surgical, medical and hospital care in all cases which are considered remediable. This service is provided through the State University of Iowa College of Medicine, and includes service given in a dozen different departments. Thousands of patients have taken advantage of this provision. There has been a steady stream of deformed and suffering humanity pouring into Iowa City week in and week out since the first enactment of the law. Practically all of the infantile paralysis patients of the state have come to this hospital as either indigent or pay cases. The demand for orthopedic service has been so large that the state has undertaken the task of manufacturing her own braces and casts. The speech defect cases have been so numerous as to necessitate a special school for training in speech after remedial operations have been performed. Special diet laboratory facilities have been provided in connection with the infant feeding cases.

No service undertaken so far by the state in connection with any of its institutions has received greater approval on the part of the public. After two years of experience with this service to the children, the state was asked to provide a children's hospital to care for these cases. Despite the fact that this appropriation was sought during the war, there was not an opposing vote registered in either branch of the legislature. Two years later, when the proposal was made to extend these provisions to adults, there was not a single vote in opposition. In other words, since inaugurating the service five years ago, the two general assemblies have expressed direct approval of the service rendered without an opposing vote—a remarkable record.

For many years the College of Medicine has been rendering special service to the wards of the state in the institutions for defectives. Hundreds of patients come each year from the state orphanage, and schools for the blind and deaf. The regular clinical service for which a charge is made has likewise attracted thousands from every part of the state.

Thus, with the addition of the indigent cases it can be seen that the hospital has really become a state hospital in every sense of the word. People in the most remote sections of the state think of this service constantly in connection with the problem of caring for children and adults who need remedial care.

The commitment laws have been drawn so as to provide for the cost not only of the remedial care but also for transportation of the patient, including the expense of a caretaker of the patient, when needed. The university makes its financial adjustment with the state authorities, thus simplifying the problem of collection on the part of the hospital. The conditions of commitment are made so simple and direct that there is the minimum of difficulty in getting patients into the service, as will be seen from a study of the first two sections of the law:

SECTION 1.—General Provisions for Free Hospital Service.—Whenever it shall appear to any physician, county supervisor, township trustee, public health nurse, overseer of the poor, policeman, priest or minister that there is any legal resident of his or her county over 16 years of age afflicted with any malady or deformity which can probably be remedied by proper care and medical or surgical treatment, if said person, or the parent, parents or guardian or other person having legal custody of said person, as the case may be, is unable financially to provide proper care and medical or surgical

treatment, it shall be the duty of such physician, county supervisor, township trustee, public health nurse, overseer of the poor, policeman, priest or minister to report the same to the judge of the district or superior court having jurisdiction in the county in which said person resides.

On the filing of such report with the judge of the district court or superior court as aforesaid he shall appoint some physician who shall personally examine said person with respect to the malady or deformity. Such physician shall make a written report to said judge, giving such history of the case as will be likely to aid the medical or surgical treatment of such deformity or malady, and describing the same, all in detail, and state whether or not, in his opinion, the same can probably be remedied. Such report shall be made within such time as may be fixed by the court and on blanks furnished as hereinafter provided. It shall also be the duty of said judge to have a thorough investigation made by the county attorney of his county regarding the financial condition of the said person, or of the parent or parents, guardian or other person having legal custody of said person, as the case may be.

SECTION 2.—Procedure for Admission to Hospital.—On the filing of such report or reports, said judge of the district or superior court, as aforesaid, shall fix a date for the hearing on the complaint and shall cause the person, or the parent or parents, guardian or other person having legal custody of said person, as the case may be, to be served with a notice of the hearing and he shall also notify the county attorney who shall appear and conduct the proceedings; and on such complaint, evidence may be introduced. If the judge finds that the said person is suffering from a deformity or malady which can probably be remedied by medical or surgical treatment or hospital care, and that the person, or the parent or parents, guardian or other persons having legal custody of said person, as the case may be, is unable to pay the expenses thereof, said judge may, with the consent of the said person, or parent or parents, guardian or other person having legal custody of said person, as the case may be, enter an order directing that the said person shall be taken to the hospital of the college of medicine of the state university of Iowa at Iowa City for proper hospital care and medical or surgical treatment; the expense of such hospital care and treatment to be met in the manner hereinafter provided.

Provided, that no such person shall be received into said hospital of the college of medicine of the state university of Iowa for care and treatment, unless, in the judgment of the admitting physician, there shall be a reasonable probability of such person's being benefited by such hospital care and medical or surgical treatment.

Emergency service is provided without waiting for the carrying out of this procedure.

Complete service is provided, including roentgen ray or radium, laboratory examinations, braces and even schooling for those of school age, and the best diagnostic and remedial care. The cost of everything exclusive of the salary of the staff is paid by the state on thirty-day settlements based on the number of patient-days.

The demands on the hospital have been growing steadily for many years. With the influx of more state patients it has been necessary to increase hospital facilities from 450 to 600 beds. The number of annual admissions is now around 15,000.

A few years ago the state board of health centered its laboratory work in the laboratories of the College of Medicine. The state epidemiologist is also a member of the staff of the College of Medicine. A public health nursing course has been authorized. The extension service in the field of follow-up work in the case of Perkins law children who have been treated in the university is proving to be one of the best forms of social welfare work. A part of the university's education program includes the distribution of thousands of bulletins on the feeding of schoolchildren, the care of infants, and the like.

In line with the general policy of coordinating the state wide service, the state has just authorized the creation of a psychopathic department at the university with a special hospital and adequate support for research work in this field.

This enlarged consciousness on the part of the public as to its responsibility in regard to health is by no means confined to a few states. Indeed, steps are being taken to secure the leadership of the federal government in assuming this responsibility. There is little doubt that within the next decade health service under some such general plan as outlined above will be provided almost everywhere. The states will have to determine whether or not they wish to establish this service in isolated hospitals as has been done in the past in the case of sanatoriums for the tuberculous, hospitals for the insane and the like, or whether they wish to coordinate this work with that of the training of physicians in the college of medicine.

While it is true that in some schools the supply of clinical material is so large that these patients would be of little value in connection with the training of physicians, yet in many states it would be disastrous from the standpoint of the teaching clinic for the state to establish such a hospital apart from the college of medicine, necessitating, as it would, constant duplication of the staffs of the two institutions. The waste would be calamitous. The experience in Iowa is such as to suggest that this type of work can most successfully be done in connection with the college of medicine.

CONCLUSIONS

Our experience leads to these conclusions:

1. In view of the great rapidity with which the demands on our staff and hospital have grown, it seems to us important to note that any state in attempting to provide this type of service should make very comprehensive plans on the material side, which should include liberal provision in space and staff not only for adequate service to the indigents but also for adequate provision for the ever growing number of pay patients.

2. It is very important that future plans include ample provision for the vigorous prosecution of medical research. Otherwise the teaching staff may easily be overwhelmed with routine, with a consequent slump in growth. Furthermore, the unusual clinical demands serve as a constant challenge to the student of medicine.

3. Since the success of the work is absolutely dependent on skill and devotion of the staff, it is essential that many adjustments in the conditions of teaching must be made. The problem of full-time teaching becomes more acute.

Satisfactory adjustments of these problems must be worked out if medical teaching is to be kept at the highest standard.

Other departments in the field of technical education have had to meet the same situation. Indeed, in the field of agricultural education a very large part of the function has been the providing of service for the public. So much is this true that it would be hard to conceive at the present moment of a college of agriculture without its elaborate organization in the direction of special agricultural service to the state. Within the next few years we may expect in many state universities just such close coordination in the problems of the training of physicians, furthering research that will contribute to the knowledge of the field and extending health service to the public.

To the degree that the colleges of medicine of the state universities are alert to these new demands and effective in their responses will these colleges become real leaders in this present movement looking toward the highest type of physical and mental efficiency.

CHANGES IN THE BLOOD IN
INFLUENZA *

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The tendency to nosebleed, the bloody sputum and the hemorrhagic character of the lesion in the lung, in an uncomplicated case of epidemic influenza, give rise to the inference that there are changes in the blood in this disease which predispose to hemorrhage.

TABLE 1.—EFFECT OF SODIUM CITRATE ON CLOTTING
TIME OF THE BLOOD

Name or Hospital Number	Date	Clotting Time, Minutes	Patient's Temperature, F.	Remarks
D.	2/ 6/20	15	100.6	Before receiving citrate
D.	2/ 6/20	7	.....	45 minutes after receiving 1 gm. sodium citrate intravenously
D.	2/ 7/20	7	.....	18 hours after foregoing dose of citrate
D.	2/ 7/20	3½	.....	1 hour after a second dose of 1 gm. sodium citrate intravenously
11278	2/ 6/20	10	105.0	Before receiving citrate
11278	2/ 6/20	5	.....	¾ hour after receiving 1 gm. sodium citrate intravenously
11278	2/ 7/20	7	.....	18 hours after the foregoing dose of citrate
11278	2/ 7/20	3½	.....	1 hour after a second dose of 1 gm. sodium citrate intravenously
11350	2/20/20	12	99.0	Before receiving citrate
11350	2/20/20	3½	.....	½ hour after receiving 1 gm. sodium citrate intravenously
11795	2/19/20	16	101.6	Before receiving citrate
11795	2/10/20	9	.....	½ hour after receiving 1 gm. sodium citrate intravenously
11795	2/20/20	9	.....	24 hours later
11795	2/20/20	9	.....	½ hour after receiving a second dose of 1 gm. sodium citrate intravenously
11844	2/20/20	14½	99.4	Before receiving citrate
11844	2/20/20	6¾	.....	½ hour after receiving 1 gm. of sodium citrate intravenously

It was for the purpose of inquiring into this point that the present study was undertaken, and this report is a preliminary summary of the results that were obtained.

The special features studied were the clotting time, the platelet count, the fragility of the red cells, and the number of leukocytes.

METHODS

For studying the clotting time, blood was drawn from the median vein into a syringe wet with physiologic sodium chlorid solution, and 1 c.c. was immediately inserted in tubes 1 cm. in diameter also wet with physiologic sodium chlorid solution. It was found that if the syringe was one of small capacity and the quantity of blood drawn only a little more than that necessary for the test, the clotting time was much shorter than if a large syringe was used and the quantity of blood drawn was several cubic centimeters more than necessary for the test. The cases in Table 3 were studied by the latter method. Care was taken to use exactly the same technic for test cases and the normal controls.

* From the Medical Clinic, City Hospital, St. Louis University School of Medicine.

For counting the platelets, the technic described by Wright and Kinnicutt¹ was used. Counts of normal individuals were made as controls.

For estimating the fragility of red cells, the method described by Hill² was employed.

TABLE 2.—EFFECT ON CLOTTING TIME OF ADDITION OF VARIOUS AMOUNTS OF SODIUM CITRATE TO BLOOD IN THE TEST TUBE

Before Intravenous Administration of Sodium Citrate						
Amount of Citrate Added to 1 C.c. Blood	Clotting Time in Minutes					
	Patient 11350	Patient 11795	Patient 11795*	Patient 11844	Normal 1	Normal 2
Plain blood; no citrate.....	12	16	9	14½	9	10
0.05 mg.	12	..	9	16	..	8
0.075 mg.	11½	..	11	14½	..	..
0.1 mg.	11	11	7	11½	..	11
0.25 mg.	11	..	10	11	..	9
0.5 mg.	12	..	15	14½	..	11
1 mg.	12	15	8	13½	9	11
5 mg.	17	19	10½	30	18	..
10 mg. (partial)...	45	Did not clot	Did not clot	Did not clot	Did not clot	20
10 mg.	Did not clot	Did not clot	Did not clot	Did not clot	Did not clot	Did not clot
10 mg.	Did not clot	Did not clot	Did not clot	Did not clot	Did not clot	Did not clot
Thirty Minutes after Administration of Sodium Citrate (1 gm.)						
Plain blood; no citrate.....	3½	9	9	6¾	..	..
0.05 mg.	3	..	7	7	..	..
0.075 mg.	3½	..	9	5	..	..
0.1 mg.	3½	16	13	7	..	..
0.25 mg.	3½	..	13	10	..	..
0.5 mg.	3½	..	6	11	..	..
1 mg.	3½	17	10	10	..	..
5 mg.	3½	17	16	45	..	..
10 mg.	30	Did not clot	Did not clot	Did not clot	..	..
10 mg.	Did not clot	Did not clot	Did not clot	Did not clot	..	..
10 mg.	Did not clot	Did not clot	Did not clot	Did not clot	..	..

* The two readings of Patient 11795 were taken twenty-four hours apart, and after the first test, 1 gm. of sodium citrate was given as was done in each of the other cases.

RESULTS

Clotting Time.—Forty patients were studied. In all, the diagnosis of influenza was clear from the clinical manifestations. All occurred during the height of the epidemic. Some were in the second or third day of convalescence. The majority were studied between the third and sixth day of disease. The normal clotting time with the method used was definitely shorter than that of the patients. There seemed no relationship between degree of delay and severity of disease. Moreover, the delay was present even when secondary infections with pneumococci or hemolytic streptococci had occurred. It was as though the delay in clotting time represented an influence essentially associated with the toxication of influenza, which persisted throughout the secondary pneumonia, and into convalescence.

Platelets.—The results are shown in Table 3. Counts were made in twenty-one cases. The reduction in the majority of the cases is very definite. As in the case of clotting time, the reduction of platelets was independent of the stage of the disease or of the presence of secondary infections. The reduction of platelets and the delay in clotting time occurred hand in hand. Both were apparently independent of the number of leukocytes present, as shown by Table 3.

Leukocytes.—In general, it may be said that influenza is attended by an absence of leukocytosis, often

extending to a degree of leukopenia. The presence of leukocytosis is good evidence of the presence of secondary infection.

COMMENT

As pointed out by Weil,³ intravenous injection of sodium citrate hastens clotting, although in the test tube the same salt in sufficient concentration will prevent clotting. Similar action is ascribed by Addis⁴ to sodium phosphate. To determine whether the same response to sodium citrate could be obtained in patients with influenza, possibly affecting the condition thereby, five patients were studied as shown in Table 1. The effect of intravenous injection was prompt. In one case (11278), the character of the sputum markedly changed from one of bloody appearance to one almost free from blood. It was thought, in the beginning, that patients improved after such treatment; but further tests made such a conclusion doubtful. In patients with streptococcus empyema, a peculiar reaction usually followed the injection of citrate, which consisted in a sudden, though transitory, gasping for breath. In the test tube, the addition of sodium citrate seems to inhibit the hemolytic action of serum of such patients on a suspension of sheep red blood corpuscles. Accordingly, the explanation of this clinical reaction was not found.

In seeking an explanation for the peculiar effect of sodium citrate on clotting time in vivo, it was thought that the salt might rapidly diffuse after entering the

TABLE 3.—COMPARISON OF LEUKOCYTE COUNT, PLATELET COUNT, CLOTTING TIME AND FRAGILITY OF RED BLOOD CORPUSCLES, IN INFLUENZA PATIENTS

Hospital Number	Leukocyte Count	Platelet Count	Fragility Test		Clotting Time, Minutes
			Complete Hemolysis, % NaCl	No Hemolysis, % NaCl	
10953	14,000	70,000	0.300	0.550	7½
11133	.....	.....	0.250	0.500	7
11149	3,000	38,000	0.250	0.500	6
11174	9,500	45,000	0.250	0.475	7
11250	11,000	66,000	0.300	0.425	11
11278	8,000	85,000	0.200	0.350	5
11405	9,000	78,000	0.300	0.425	12
11406	6,000	114,000	0.250	0.425	6
11420	7,000	89,000	0.325	0.425	11
11424	2,000	28,000	0.250	0.550	4
11428	3,000	47,000	0.300	0.475	7
11458	6,000	64,000	0.250	0.425	10
11469	10,000	67,000	0.250	0.400	10
11487	3,200	76,000	0.250	0.475	6
11367	4,200	34,000	0.300	0.475	4
11538	20,000	220,000	0.300	0.425	5
11546	4,500	20,000	0.300	0.425	9
11153	40,000	60,000	..	..	..
11566	2,000	52,000	0.350	0.475	8
11595	15,000	133,000	0.300	0.425	12
11596	18,000	66,000	0.300	0.425	14
D.	18,000	285,000	0.250	0.450	7
Normals					
H.	.....	.....	0.250	0.475	..
B.	8,000	258,000	0.250	0.450	4½
G.	.....	.....	0.250	0.475	..
K.	8,000	235,000	.....	.....	4½
A.	12,000	224,000	.....	.....	5
Miss A.	.....	.....	0.300	0.425	..

blood stream and be diluted so that only a minute amount remained after a few minutes, and that such a minute quantity might enhance the condition of "thrombin" and "prothrombin." Accordingly, tests were made of four patients and two normal controls, in which minute amounts of citrate in vitro seemed to have the effect of shortening clotting time, while the usual concentration of 0.2 per cent. prevented clotting. Further investigation must be made to substantiate this finding, shown in Table 2.

1. Wright, J. H., and Kinnicutt, Roger: A New Method of Counting the Blood Platelets for Clinical Purposes, J. A. M. A. 56: 1457 (May 20) 1911.

2. Hill, L. W.: The Resistance of the Red Blood Cells to Hypotonic Solution in the Various Anemias, Arch. Int. Med. 16: 809 (Nov.) 1916.

3. Weil, Richard: Sodium Citrate in the Transfusion of Blood, J. A. M. A. 64: 425 (Jan. 30) 1915.

4. Addis Thomas: Proc. Soc. Exper. Biol. & Med. 14: 1192, 1916.

SUMMARY

The clotting time of the blood of patients with influenza is delayed.

The number of platelets is reduced in such patients.

Neither of the foregoing conditions changes with the onset of secondary infection, although the number of leukocytes is usually greatly increased in secondary infection.

The fragility of the red cells is probably increased in influenza.

CAN THE TUBERCULOSIS TRANSMISSION RATE BE REDUCED?

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What are the possible avenues of tuberculosis transmission among individuals? Is it direct contact by the air route, though spray that is expelled by an act of coughing, or through dried sputum in public places? In answer to this question it may be said, that if the results of investigations of the influenza-pneumonia epidemic can be taken as a key to sputum-borne disease transmission, the transmission rate resultant from the distribution of tuberculosis by the air route among adults is of minor importance.¹ In the infant, however, another link may be added to this avenue of transmission: that of soiling the hands on a contaminated floor.

In contrast to direct contact, transmission may take place through several common routes by indirect contact: (a) through hand-to-mouth infection, the hands being soiled by contaminated inanimate objects, and (b) through inanimate object-to-mouth infection, the objects entering the mouth of the tuberculous as well as that of the nontuberculous. There are other ramifications in the routes of travel, but for the purpose of this paper the foregoing are the most important.

Here it might be said that our efforts to control the disease by the restriction of spitting and coughing have not given results that inspire a high degree of confidence. Should it be assumed that public spitting is a large factor in transmission, it is to be pointed out that this restrictive measure is of limited value because it is an attempt to deal with the individual. In this disease, as in all communicable diseases, a successful attack cannot be made through the individual—the animate—but must be made through the inanimate; or, as in insect-borne diseases, through insect destruction. It might be laid down as fundamental, from an epidemiologic standpoint, that the final solution in the eradication of any disease depends not on the control of the animate, but on the control of the inanimate through universal mass action.

On this basis there would be some encouragement in a plan of attack which could be universally applied to the most common *saliva*-contaminated inanimate objects. If this could be accomplished, the major avenue of transmission would be closed, the transmission rate would be immediately diminished, and on the basis of "the theory of case and source elimination" the majority of the tuberculous cases of the next human cycle of this organism would be eliminated as sources of infection. Likewise, by continuing this

blocking in subsequent cycles of the organism, the majority of cases and sources would be eliminated. Thus, it is only by application of this principle through its cumulative action that the disease will be ultimately eradicated.

What is the most common inanimate object which becomes sputum contaminated by one person and then, without being rendered aseptic, enters the mouth of another where the saliva and its organisms are deposited? The donor of the saliva may be tuberculous and the recipient nontuberculous. This exchange of inanimate objects with their attached organisms takes place three times a day between tuberculous and nontuberculous persons. These objects are eating utensils. Objection might be made to the possibility of any such transfer of tubercle bacilli, on the assumption that only the sputum contains large numbers of organisms, while the saliva of the oral cavity is comparatively free from contamination by this organism; also that eating utensils are washed, and furthermore that such utensils when used by the tuberculous, who have had hospital training, are boiled.

The saliva in the open case contains many tubercle bacilli; dishes when washed only in warm water are not rendered aseptic—the average removal of organisms is about 70 per cent.;² and the tuberculous who have had the advantages of training in a sanatorium are in the minority.

TRANSMISSION EXPERIMENTS

The field and laboratory investigations on the transmission of measles-pneumonia at San Antonio, as well as those on influenza-pneumonia at the port of embarkation, Newport News, Va., and in public institutions presented a lead as to the most likely major avenue of tuberculosis transmission.³ From these investigations it was deduced that direct contact through the air route played at best only a minor rôle in sputum-borne transmission, while indirect contact through hands and eating utensils was the major avenue of distribution.

The plan of the work was: (1) to determine the presence or absence of tubercle bacilli on eating utensils after they were used by tuberculous patients; (2) to determine the presence or absence of these organisms on eating utensils after these utensils were washed by the usual hand method in hot water; (3) to determine their presence on the hands of patients, and (4) to determine their presence in the air of tuberculosis wards.

In carrying out these researches it was recognized from the standpoint of tuberculosis transmission, that of all eating utensils, the spoon would be the most likely transmitting object. This is because the spoon actually enters the mouth; the fork does, too, but of the two the spoon has the larger surface area to which mouth organisms may adhere. The spoon was, therefore, chosen as the transmitting agent in these experiments.

Spoon Wash Water.—In the first group of experiments, which were undertaken, May 1, 1919, the spoon used in two open cases of tuberculosis were washed after each meal with a cloth in 150 c.c. of hot water. About 50 c.c. of this wash water were centrifugated and the centrifugate of eleven of these specimens was

1. Cumming, J. G., and Spruit, C. B.: Transmission of the Pneumonia Group of Organisms, to be published.

2. Observations as yet unpublished.

3. Lynch, Charles, and Cumming, J. G.: The Distribution of Influenza by Indirect Contact—Hands and Eating Utensils, *Am. J. Pub. Health* 9: 25 (Jan.) 1919.

njected subcutaneously into guinea-pigs. Of these eleven guinea-pigs, three died from generalized tuberculosis.

In the next group of experiments the procedure was the same except that a single spoon was used instead of two as in the previous experiments. Among twenty guinea-pigs so inoculated, eight died from tuberculosis. Of the thirty-one injected animals in this group, eleven, or 35 per cent., died from tuberculous infection.

Spoon Rinse Water.—In these experiments, spoons were first washed by hand in hot water. They were then placed in a large mouth bottle containing 50 c.c. of hot water and shaken for five minutes. This rinse water was then centrifugated and the centrifugate injected. Twelve guinea-pigs were injected with the cooled rinse water centrifugate from the spoons used in two cases of open tuberculosis. The same two patients were rarely used in successive experiments. Of the twelve animals so injected, three died from tuberculosis. Of twenty-four guinea-pigs injected with the rinse waters from single spoons, six died from tuberculosis.

Of the thirty-six injected animals in this group of experiments, nine, or 25 per cent., died from tuberculous infection.

Hand Scrapings.—The hand scrapings from tuberculous patients were obtained by first soaking the

the wash water injections. It is believed that the hand washing of the spoons in this series of experiments can be taken as representative of the usual method of washing eating utensils. If this is so, the difference in the percentage of deaths between the animals injected with washings and rinsings indicates that only about 30 per cent. of the spoons used by tuberculous patients are rendered free from the organism by the usual hand method of washing.

This group of rinse water injections, with its 25 per cent. mortality, demonstrates the facility of tuberculosis transmission and indicates that in families the eating utensil is the *major* avenue of distribution.

Imagine a family of six in which there is one open case of tuberculosis. What are the chances of introducing tubercle bacilli from the patient in this open case through the spoon route into the mouths of the remaining five members of the family? I do not wish to convey the idea that only the spoon is responsible for transmission; but among all eating utensils, it is the chief conveyer. Since there are six persons in the family, the chances are five to one that at each meal the contaminated spoon is used by one of the well members of the family. But there are three meals a day, and of all eating utensils there are three which actually come in contact with the mouth or lips: the spoon, fork, and cup. As there are three contaminated conveyers, three meals a day, and six persons in the family, the chances are that each well person during the day uses approximately two conveyers contaminated by the tuberculous person. These chances of exchange increase with a decrease and decrease with an increase in the number composing the family.

In view of this exchange of eating utensils in a family group, and in view of the fact that the majority of eating utensils are hand washed, by which method they are neither freed from all organisms nor rendered aseptic, and in addition, that the eating utensil is the most common inanimate object which enters the mouth of the tuberculous as well as that of the nontuberculous, is it not obvious that the eating utensil is the major avenue of tuberculosis transmission?

The primary infection, then, is not the result of airborne transmission, nor is it in the lung as is generally maintained; but it is saliva-borne and in lymphoid tissue. The primary focus might be either in the tonsil or in a mesenteric lymph node. From these primary foci, tubercle bacilli are subsequently passed into the lymph channels and thence to the blood stream. Since the first network of small vessels through which the blood passes is in the lung, the organisms are filtered out, just as in hookworm infection, and here their multiplication produces a secondary focus. In the lung, the evidence indicates that extension again takes place through lymph channels, resulting in multiple foci. From an epidemiologic standpoint the breaking down of these multiple foci, the liberation of tubercle bacilli, the contamination of saliva, the soiling of eating utensils by saliva, and the use of these without being rendered aseptic by boiling water, results in the introduction of repeated small doses, one or more of which are finally carried through the barrier and involve lymphoid tissue of the newly infected person; thus there is completed the cycle of transmission. It is not the large dose of tubercle bacilli that is usually responsible for infection, but it is the repeated small doses.

Although the hand scraping injections gave the highest mortality among the several groups of injected

RESULTS OF INJECTIONS IN GUINEA-PIGS

Injections	Number Injected	Number Dead	Dead from Tuberculosis	
			Number	Per Cent.
Wash water.....	31	21	11	35
Rinse water.....	36	22	9	25
Hand scraping.....	7	4	3	43
Air washing.....	11	1	0	0

hands in warm water for a few minutes and then scraping off the epithelium with a scalpel. Of seven animals injected with the scrapings so collected, three, or 43 per cent., died from tuberculosis.

Air Washings.—The specimens of air dust were obtained by drawing air through water by means of a suction pump. The inlet was 3 feet from the floor, the washing process was in each test continued throughout a twenty-four hour period, and there was a total of 2,280 liters of air washed. About 50 c.c. of the 2,280 c.c. of water used for each twenty-four hour run were centrifugated, and the deposits of eleven of these specimens were injected into guinea-pigs. During an observation period of nine weeks, only one of the injected animals had died; its death, however, was not due to tuberculosis.

COMMENT

Since tuberculous sputum passes through the oral cavity on its way from the lungs of the tuberculous to the exterior, this cavity becomes contaminated. Objects that enter the mouths of these patients become contaminated with the specific organism. As eating utensils are the most frequent inanimate objects which come in contact with the mouth, it is to be expected that guinea-pigs injected with the wash water from eating utensils of the tuberculous patient would die from tuberculosis. It will be noted that 35 per cent. of animals so injected died from the infection.

But the outstanding feature of this series of experiments is that the percentage of deaths, 25, from the rinse water injections was almost as great as that from

animals, it is not to be concluded from this result that the hand-to-mouth route of travel is the most frequent mode of tuberculosis transmission. The hands of the tuberculous are contaminated with tubercle bacilli, but our hands only handle objects in common with those of others, and do not enter the mouths of other persons as do eating utensils. The hands are dry, which makes transfer to objects difficult. In addition there is a five-link chain in hand-to-mouth transmission, while through eating utensils there is only a three-link chain, and the two end links are moistened by the saliva which makes for facility of transmission. From a general consideration of tuberculosis transmission it appears that hand-to-mouth spread is second in importance to eating utensil distribution.

None of the animals injected from air washings died from tuberculosis, and although these animals were under observation for only nine weeks there were no indications of infection—no nodules at the point of injection. This result, in conjunction with our reports of former research¹ on the air dust of streptococcus wards, where it was found that hemolytic streptococci were practically never found, might well lead one to conclude that the air route of travel of the tubercle bacillus, as well as that of the hemolytic streptococcus, is a remote possibility. It might be well to consider that there is an exception to this in the creeping infant. In this case, the first link in the chain is from the adult through the air, directly to the floor, and thence to the infant by the hand-to-mouth route. But this is indirect contact and not direct contact transmission, nor is it the major avenue of distribution among persons.

It might be well to add here that there is no disease which man will not be able to control; and so long as he regards any disease or group of diseases as transmitted by the air route, successful control is impossible. In general, we have little or no control over the air that we breathe; consequently we have little or no control over this as a transmitting avenue. This is not so in the case of inanimate objects, through which the major avenue of transmission can be readily closed.

The findings here presented in no way influence the teaching that promiscuous spitting and careless coughing should be heartily discouraged, not only from the standpoint of common decency, but also from that of disease prevention.

CONCLUSIONS

1. The attack against tuberculosis has not resulted in a marked reduction in the transmission rate, because this attack has been made chiefly against the minor avenues of distribution.

2. A communicable disease can be successfully controlled and eventually eradicated only by an attack against the major avenue of spread.

3. The group of rinse water transmission experiments here presented gives a high mortality from tuberculosis and affords striking evidence of the importance of indirect contact transmission in this disease.

4. The results of the rinse water experiments, in conjunction with epidemiologic information, indicate that the major avenue of tuberculosis transmission is through eating utensils.

5. Eating utensil transmission is a three-link chain; the two end links are moist, and this makes for facility of transmission.

6. On the basis of "the theory of case and source elimination," by making the attack through the major

avenue of transmission, tuberculosis is as controllable as is typhoid fever.

7. It should not be assumed that we should learn to live with tuberculosis, but rather that we should learn how to reduce the transmission rate.

8. Just as a 99 per cent. removal of organisms from a polluted water supply controlled the intestine-borne infections, so, likewise, will a similar reduction of organisms on eating utensils control the saliva-borne infections.

9. The universal application of the principle of eating utensil asepsis will accomplish more in the control of tuberculosis than will any other single measure of practical application.

10. In the control of tuberculosis, the adoption of the principle of using boiling water as a cleansing and a pasteurizing agent of eating utensils applies especially to the small messing group—the family—and also, but to a less extent, to the public eating place.

TYPHOID FEVER IN THE AMERICAN EXPEDITIONARY FORCES

A CLINICAL STUDY OF THREE HUNDRED AND SEVENTY-THREE CASES *

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DETROIT

This clinical study of typhoid fever as it occurred in France among the troops of the American Expeditionary Forces has been made under the direction of Col. J. F. Siler, chief of the Division of Laboratories and Infectious Diseases, Office of the Chief Surgeon, A. E. F. It is based on a personal investigation of the cases of typhoid fever, of paratyphoid, and of clinical typhoid as they occurred in the various army hospitals, supplemented by a statistical study of detailed reports on 373 cases.

As a result of the system employed at the ports of embarkation in the United States, nearly all soldiers leaving for France received preventive typhoid inoculations prior to leaving this country. A study of this disease as it occurred in France becomes, then, a study of typhoid fever in the "immunized" individual. The aim of this investigation has therefore been to determine the clinical difference, if any, between typhoid fever in the vaccinated and in the nonvaccinated, and the effect of vaccination on the course of the disease as well as on the severity and the mortality. Investigations from the point of view of laboratory work and epidemiology have been touched on only as they affect the clinical aspects of the disease.

INCIDENCE

Chart 1, prepared from weekly reports of the sick and wounded to the Surgeon General's Office, shows that the typhoid group of diseases had been present in isolated cases since the autumn of 1917. The rise in the curve for November, 1917, while nearly as high as for that of December, 1918, must not be understood to indicate as great a number of cases. Showing, as it does, the annual death rate per thousand for each week, the curve for November, 1917, is based on a very much smaller total number of men in the American

* Because of its length, this article is published in two parts. The second part will appear next week.

† Dr. Vaughan died, June 4, 1919, at St. Aignan-sur-Cher, France.

Expeditionary Forces than for the fall of 1918. The pronounced rise in the curve for August, 1918, was due in great part to disease at the front. With the men in action and forced at times to drink from polluted streams and rivers, to drink even from the water lying stagnant in the shell holes, it is but natural that the incidence of enteric diseases should take an upward leap. The effect of this is shown in the curve for dysentery in the same chart.

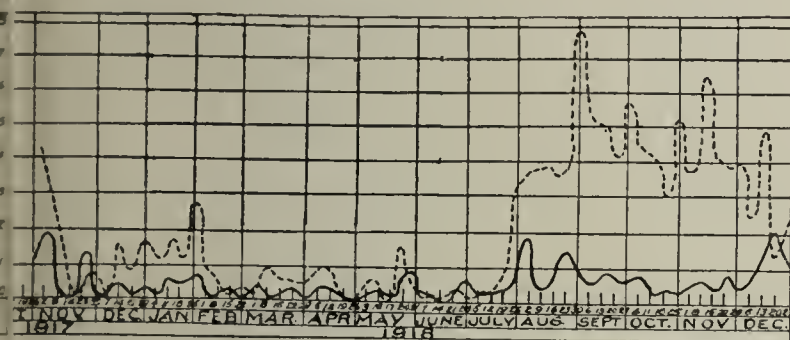


Chart 1.—Morbidity among troops in expeditionary forces during 1918; annual rate per thousand: solid line, typhoid and paratyphoid; dashed line, dysentery.

Since the armistice there have been two or three small epidemics of typhoid fever. In December, 1918, there was a rise in the incidence of the disease in the Twenty-Seventh and Seventy-Ninth Divisions which continued for more than three months. Investigation revealed that in the Seventy-Ninth Division typhoid infection had occurred while the troops were in action near the Argonne, since which time it had been endemic, the source of infection being apparently healthy or convalescent carriers.¹ We had no opportunity in connection with our studies of investigating the infection in the Seventy-Seventh Division, but presumably the pathology was the same.

In March, 1919, a small outbreak occurred among troops stationed in the vicinity of Marseilles. Here the disease originated from two sources: (1) polluted water at times improperly chlorinated, and (2) carriers of typhoid cases passing through the camp, especially combat troops and other organizations previously stationed in infected areas in the former zone of the offense.

Cases providing material for this paper date from November 1, 1919.

TYPHOID FEVER

This paper will be divided into a consideration of light typhoid fever and of the two paratyphoids, A and B, and of so-called clinical typhoid fever, a condition in which the clinical findings were quite characteristic of the disease but in which the causative organism was not isolated. No case has been accepted in our statistical study as being undoubted typhoid or paratyphoid fever unless the causative organism has been isolated either from the urine or feces or preferably from the blood. I recognize that the finding of typhoid or a paratyphoid bacillus in the feces alone does not establish a diagnosis, but have assumed that this finding, together with the presence of characteristic clinical symptoms of the disease, and with negative blood cultures, form sufficient evidence on which to base a diagnosis.

The clinical and laboratory findings in 270 cases reported with *Bacillus typhosus* form the basis for this portion of our report.

Blood Cultures.—In summarizing the results of the blood examinations, I here include for convenience the results in the paratyphoid cases. Of 331 cases studied with a view to isolating the causative organism, blood cultures were made in 274. In the remaining fifty-seven, no blood cultures were made, but diagnosis rested on the isolation of *B. typhosus* or *paratyphosus* from the stool or urine. Of these 274 cases, 180 were positive and ninety-four negative for the organisms in question. These results, representing cultures taken at all stages of the disease, show that the organism was isolated from the blood in 65.7 per cent. of cases of true typhoid and paratyphoid fevers (Chart 2).

Table 1 gives the actual number of cultures taken in each case. The fact that in one case of proved typhoid six blood cultures were negative illustrates the value at times of taking cultures of the excreta.

In Chart 3, which gives the actual number of positive and negative blood cultures on successive days of the disease, the greatest number of positive cultures is recorded between the tenth and the fourteenth days of the disease. This is because the greatest number of cultures were also taken during that period. At the end of the first week of the disease and at the time when rose spots were appearing and the spleen was becoming palpable, typhoid was suspected and blood cultures

TABLE 1.—BLOOD CULTURES IN CASES OF PROVED TYPHOID AND PARATYPHOID FEVERS

No. of Cultures per Case	Total	Positive	Negative
Cultures taken once.....	203	143	60
Cultures taken twice.....	48	25	23
Cultures taken three times.....	10	3	7
Cultures taken four times.....	12	9	3
Cultures taken six times.....	1	0	1
Total.....	274	180	94

were first made. The average date of diagnosis was the eleventh day of the disease. Chart 4 gives the same information as that given in Chart 3, on a percentage basis. It shows that during the first week of typhoid fever the organism was isolated from the blood in 65.7 per cent. of trials, and during the second week in 54.7 per cent. During the third and fourth

BLOOD	100	200	300
Total Cases Cultured 274			
Total Positives 180			
Percentage 65.7			
URINE			
Total Cases Cultured 109			
Total Positives 37			
Percentage 33.9			
STOOL			
Total Cases Cultured 270			
Total Positives 193			
Percentage 70.2			

Chart 2.—Percentage of cases showing positive blood, urine and stool cultures in proved typhoid and paratyphoid.

weeks, blood cultures were positive, but in diminished frequency. (Relapses shown in Chart 3 are not included in Chart 4. It is possible that some of the other positive blood cultures obtained late (Chart 4) were also in relapse, although not reported as such.)

Urine and Feces.—Of 109 cases in which urine cultures were made, thirty-seven, or 33.9 per cent., gave positive results. Of 270 in which cultures of the stools were taken, 193, or 70.2 per cent., were positive for *B. typhosus* or one of the paratyphoid organisms (see

Chart 2). In Chart 5 it is seen that urine cultures were most frequently positive during the second and third weeks of the disease, and that stool cultures were positive in as high as 57 per cent. of cases in the first week, from which high point the percentage gradually

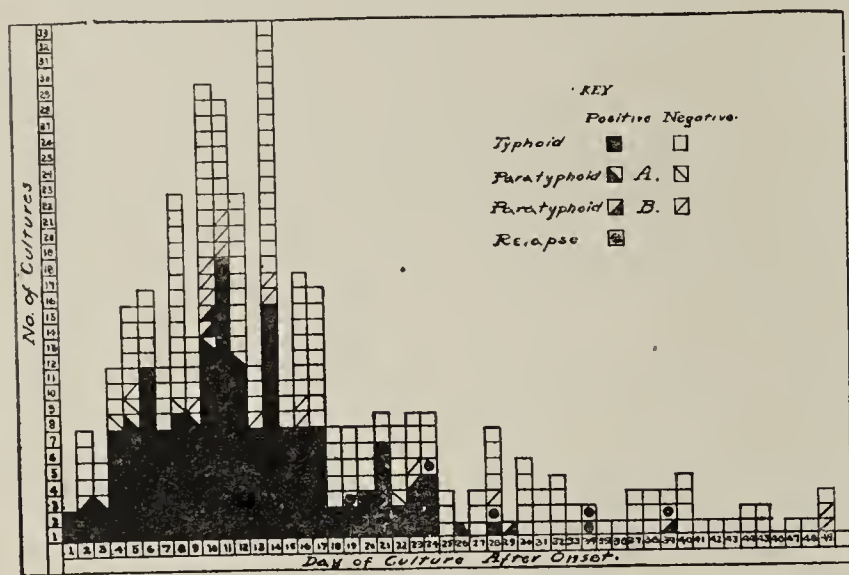


Chart 3.—Actual number of positive and negative blood cultures in proved cases of typhoid and paratyphoid by days after onset of disease.

decreased so that by the sixth week they were positive in only 9 per cent. Figures for later weeks both in the urine and the feces curves, are based on smaller numbers of cultures and are therefore less reliable.

Simultaneous blood and feces cultures made in 150 instances in successive weeks of the disease (Chart 6) showed that during the first week the likelihood of making positive diagnosis by stool culture was two thirds as great as by blood culture, whereas in the second week the chances were about even, the advantage still resting slightly with the blood method. During the third week the opportunities for obtaining the organism were somewhat better by the stool examination. After the third week the possibility of obtaining the organism decreased by both methods, the stool method remaining the better. In fifty out of the 150 cases, urine cultures were also made. Perhaps the most important fact to be brought out in this analysis is the persistence of positive blood cultures into the third week in a certain proportion of cases.

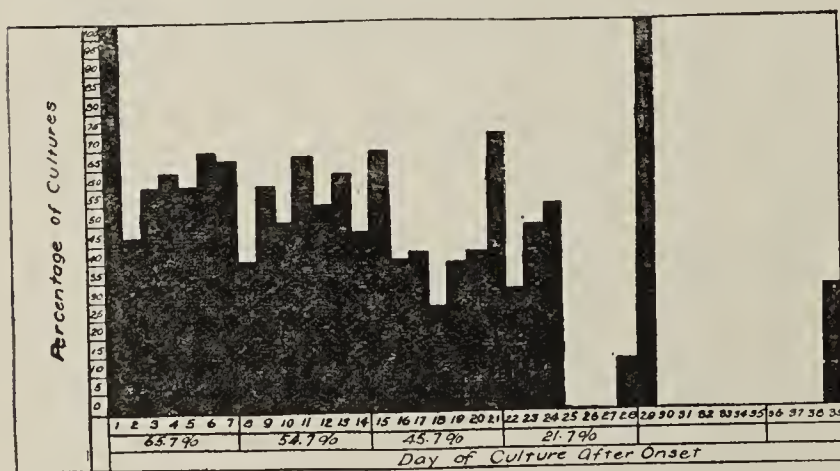


Chart 4.—Percentage of positive blood cultures in cases of proved typhoid and paratyphoid by days after onset of disease.

Serodiagnosis.—Serodiagnosis, particularly by the use of the Widal reaction, has not been relied on in the diagnosis of these infections. In individuals inoculated with the triple vaccine the Widal as usually performed is valueless.² The well known tendency of the para-

typhoid B bacillus to be agglutinated in much higher dilutions than *B. typhosus* and particularly than the paratyphoid A bacillus, together with the presence of group agglutinins or coagglutinins, further tends to vitiate the results. Antibody titration by the Dreyer method promises better results in the vaccinated, but time and equipment did not permit its use in this clinical study.

SYMPTOMATOLOGY

Antityphoid inoculation as an auxiliary to sanitary measures has diminished the occurrence of typhoid fever but has not freed us entirely from the disease. In the United States Army in 1914, two years after vaccination had been made compulsory, there occurred 7.5 cases per hundred thousand. Vaccination confers only a relative immunity, and in France, where the sanitary conditions could not always be ideal, we had expected a moderate increase in the number of cases.

We had been led, however, to expect that the clinical condition encountered in the inoculated would be quite different from that in the nonvaccinated. Gay,³ in quoting foreign workers, remarks that the mortality among the vaccinated, as compared with the nonvaccinated, decreases even more rapidly than does the morbidity. He says: "Not only is the mortality rate decreased, but the disease itself is found to undergo a very distinct modification when it does occur in the vaccinated. It has frequently been found to be so mild as to offer great difficulty in its classification."

We have analyzed the clinical symptomatology in 270 cases of proved typhoid fever, in all of which the patients had been vaccinated previously. The result of our analyses are given in Chart 7, on which are shown the incidence and average day of appearance of the symptoms and the more frequent complications. The ordinates represent the total percentage of cases in which any one symptom was observed, while the abscissas indicate the average day of the disease on which each symptom was noted. Thus, one may read that diarrhea occurred in 45 per cent. of the cases and that the average day of appearance was the fourth day or that rose spots were noted in 62 per cent. of the cases, usually first recognized on the twelfth day. From this chart, then, the entire clinical symptomatology may be reconstructed.

The most striking feature of the disease in the inoculated, as here graphically shown, is its almost classic resemblance to the old typhoid as we knew it in the unvaccinated. The chill in nearly one fourth, the early bronchitis in well up toward one half, the initial constipation in about one fifth of the cases, followed a few days by diarrhea in one half, meteorism, re-

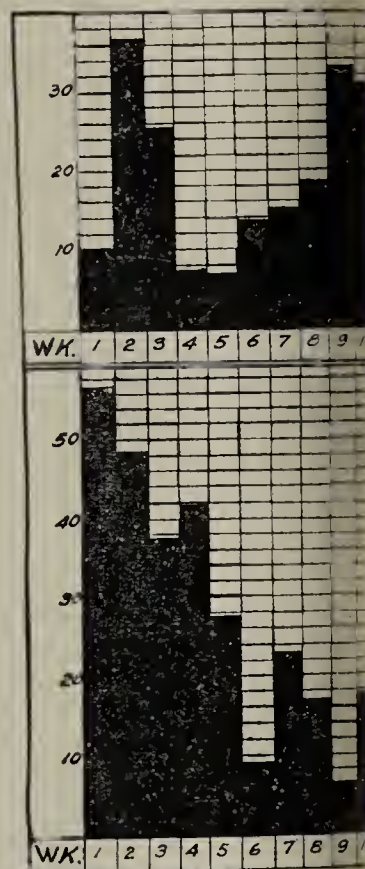


Chart 5.—Above, percentage of positive urine, cultures in successive weeks of the disease in 109 cases of proved typhoid; below, percentage of positive feces cultures in successive weeks of the disease in 270 cases of proved typhoid.

2. Rist, E.: J. Lab. & Clin. Med. 3:1 (Oct.) 1917.

3. Gay, F. P.: Typhoid Fever Considered as a Problem of Scientific Medicine, New York, the Macmillan Company, 1918.

ots and enlarged spleen in the second week, complications in the third week, and cessation of the fever averaging around the end of the fourth, form a clinical picture in no wise differing from that of typhoid in pre-inoculation days.

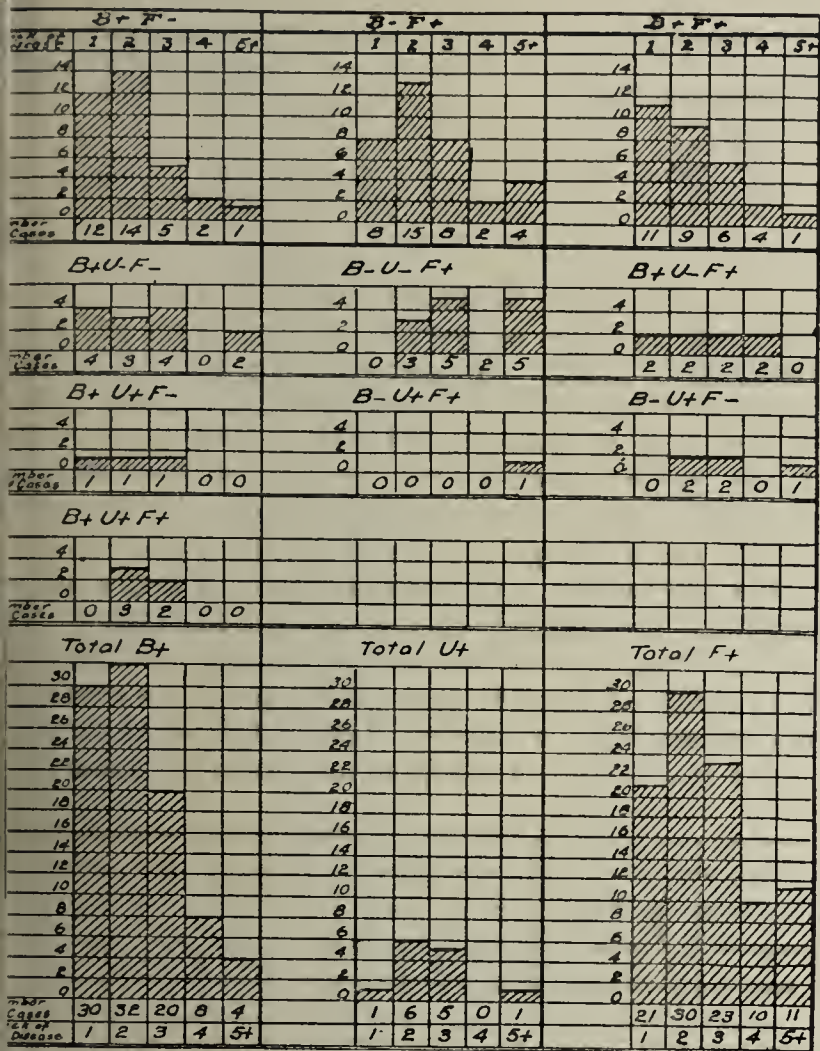


Chart 6.—Comparison of simultaneous blood, urine and feces cultural ults, by weeks of disease, in 150 cases of proved typhoid.

Not only was this resemblance true on paper, but it is likewise true at the bedside. In the majority of the cases in which the typhoid bacillus was isolated there was no difficulty in the clinical diagnosis. Typhoid facies, coated tongue, rose spots, palpable spleen, rigid, slightly tender abdomen and dicrotic pulse were the rule rather than the exception. Just as in the unvaccinated, all gradations of the disease were found. We have long been acquainted with the mild and ambulatory cases, difficult of diagnosis because of the mildness and frequent absence of many of the symptoms. Many such have probably occurred among our troops and remained undiagnosed. It is further possible that the number of cases that would fall into this class has been greatly increased by preventive inoculation. But even those numerous patients whom we have seen sick in hospital, there could be no doubt as to the clinical diagnosis.

Leukopenia.—White blood counts failed to detect a leukocytosis. On the other hand, the leukopenia was not so marked as it is described in the classical typhoid (Charts 8 and 9). The average white counts on successive days of the disease stood around 7,000. Some were higher and some were lower, but not a few are reported of from 2,000 to 4,000 per cubic millimeter. Realizing that our reports were being received from seventeen different laboratories and that the high counts might be due to variations in technic, we grouped all the reports from a single hospital in which cases of typhoid fever were unusually frequent. Here the average white counts on different days of the dis-

ease, as compared with the average for all hospitals, was lower, but not remarkably so (Chart 10).

In uncomplicated typhoid the white count averaged around 7,000. This figure agrees with that reported by Hawn, Hopkins and Meader.⁴ Whether this is due to a change resultant on vaccination or to other causes, it is hard to state. The presence of several real instances of leukopenia prove the possibility of such occurring in the antityphoid inoculated. The average white count during hemorrhage was 4,500; in perforation, 6,000; in lobar pneumonia complicating the disease, 12,000, and in bronchopneumonia, 9,000. These, again, are figures that agree with those for typhoid in the unvaccinated.

Fever.—Chart 11 shows the case of a man in hospital with an acute febrile disturbance who in the second week had the onset of a typical typhoid fever with steplike rise in the fever curve and a slow pulse; the fastigium starting in the second week of the disease, becoming definite in the third and fourth with increased rapidity of the pulse, and followed in the fifth week by lysis. In Chart 12 B is seen again the steplike rise and the tendency to a continued high fever during the

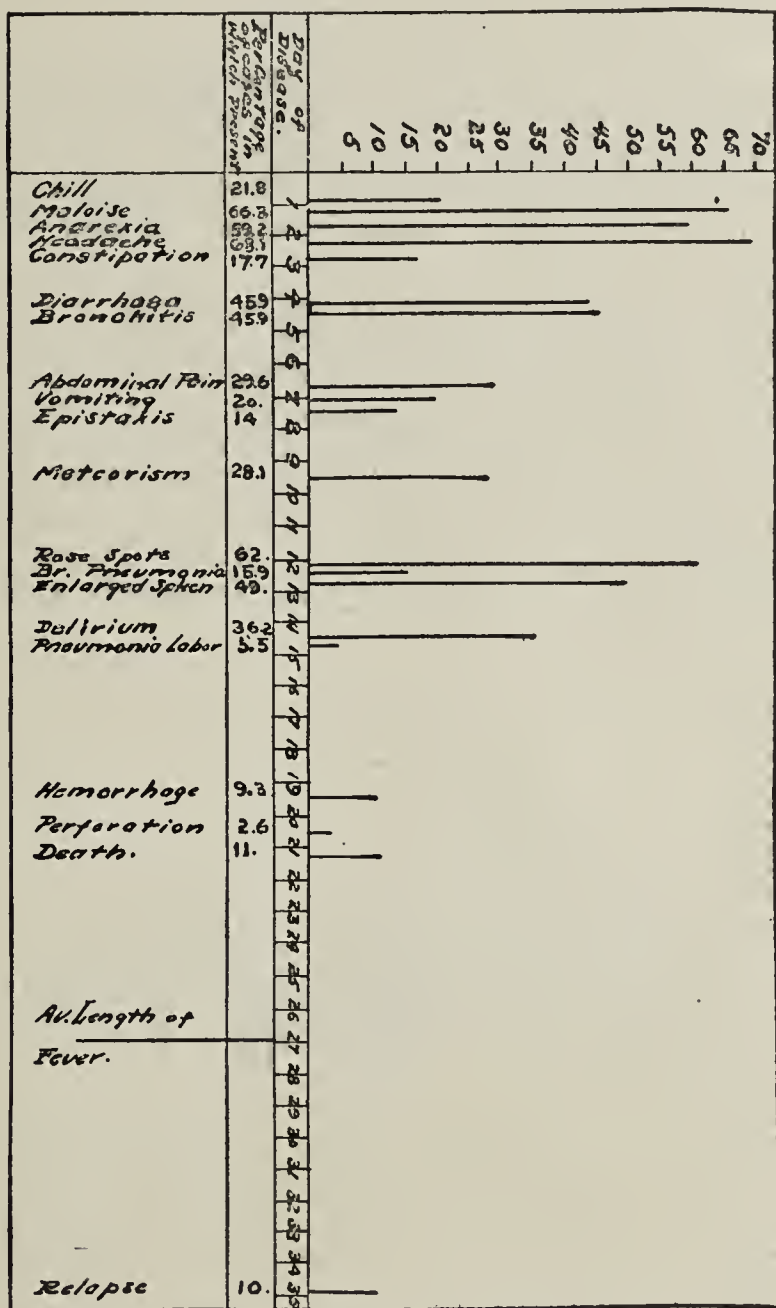


Chart 7.—Incidence and average day of appearance of symptoms and frequent complications in 270 cases of proved typhoid.

succeeding ten days. C, on the same chart, begun during the fastigium, shows that period and the following decline by lysis. Chart 13 G and I show relapses following rather mild initial courses.

4. Hawn, C. B.; Hopkins, J. D., and Meader, F. M.: Outbreak of Typhoid Fever Among American Troops in England, J. A. M. A. 72: 402 (Feb. 8) 1919.

The type of fever in vaccinated typhoid patients did not differ remarkably from that in the unvaccinated. The average day of cessation of fever was 26.9. Relapses occurred in 10 per cent. of the cases, and the average date of onset was the thirty-fifth.

Atropin Test.—This was performed in a small number of cases, and was usually found to be positive (no pulse increase over 20 beats a minute after 2 mg. of atropin subcutaneously). This was particularly the

appear in the same order. The onset is not marked by special symptoms. . . . During the fastigium the diarrhea is neither more nor less frequent. . . . At most, one could say that the abundant diarrheas are a little less frequent among the vaccinated.

TABLE 2.—OCCURRENCE OF ROSE SPOTS

Nature of Eruption	Vaccinated, per Cent.	Nonvaccinated, per Cent.
Absent.....	6	10
Discrete.....	18	15
Average.....	40	53
Heavy.....	28	13
Very profuse.....	8	9

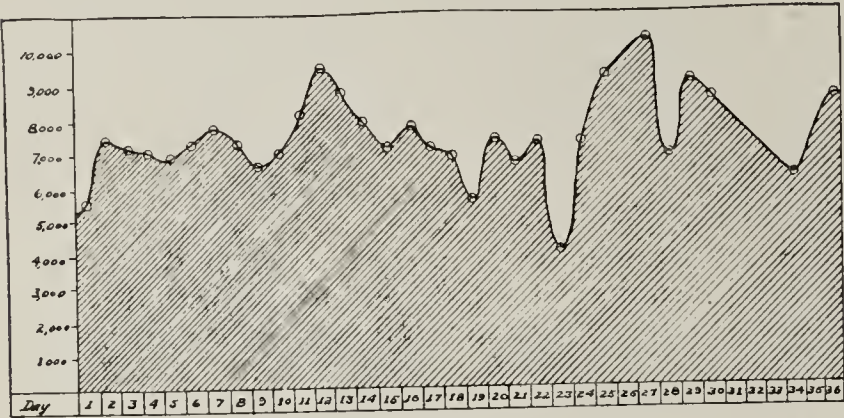


Chart 8.—Average white blood counts in “uncomplicated” cases of proved typhoid arranged according to day of disease.

case during the first week, when the pulse was slow. It was often negative after the pulse rate had increased. We regard this test as of confirmatory value similar to such findings as a palpable spleen, which may be absent, and which again does occur in other diseases than typhoid.

Preliminary Diagnoses.—A word should here be given to the admission diagnoses of these cases of proved typhoid (Chart 14). Of 206 cases in which the entrance or provisional diagnosis was noted, 120 bore a diagnosis of respiratory disease, while only forty-nine were diagnosed as gastro-intestinal. This, again, is in accordance with our previous knowledge of the disease, the initial symptoms being not local but the general symptoms of acute infection with frequently a concomitant bronchitis.

He suggests that the exanthem may be more profuse. His figures for the occurrence of rose spots are reproduced in Table 2. In summarizing these figures he states that the eruption was unusually intense in 36 per cent. of the vaccinated and in but 22 per cent. of the nonvaccinated, and concludes that although unusually intense eruptions also occur in the unvaccinated and although it is not an exclusive phenomenon of the vaccinated, the unusually heavy and confluent eruptions are more frequent among the latter. This may be true, as we have not made examinations with this particular point in view; but I would call attention to the fact that in Labbé’s figures the percentages of absent and discrete rose spots are about the same in the

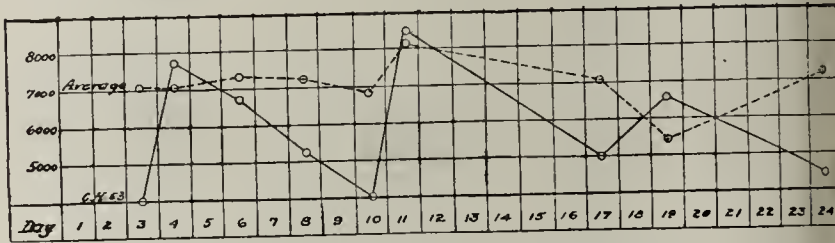


Chart 10.—Comparison of average white blood counts for entire series with average blood counts reported from Camp Hospital 53.

two columns, as are also the percentages for the very profuse. The difference occurs in the two intermediate stages. It is frequently difficult to distinguish between two gradations so close together. Were the variations farther separated in the columns, the evidence would be more convincing.

Labbé, in discussing the rose spots, also states that they are frequently quite persistent, lasting as long as fifteen or twenty days. They may occur as early as the fourth day. Blood cultures in his experience are negative after the fourteenth day, although in the nonvaccinated they may be positive as late as the twenty-eighth. He further asserts that the febrile period is notably shortened in the vaccinated. Patients during the pyrexia are fully as sick and as toxic as are the unvaccinated; but instead of three or four weeks of fever, there are usually only two or three. After the defervescence there is no subsequent rise, but the gastro-intestinal symptoms persist. Relapse is decreased in frequency from 10 per cent. in the nonvaccinated to 3.5 in the inoculated. In the mortality he reports the greatest results. A death rate of 21 per cent. among the nonvaccinated is decreased to 2 per cent. among those who have received two or more injections.

How are we to reconcile these reports with our findings of a febrile period averaging twenty-seven days, positive blood cultures into the fourth week, 10 per cent. of relapses, and a mortality of 11 per cent.? It is true that we have many cases with short febrile periods but the figures clearly show that for these short cases

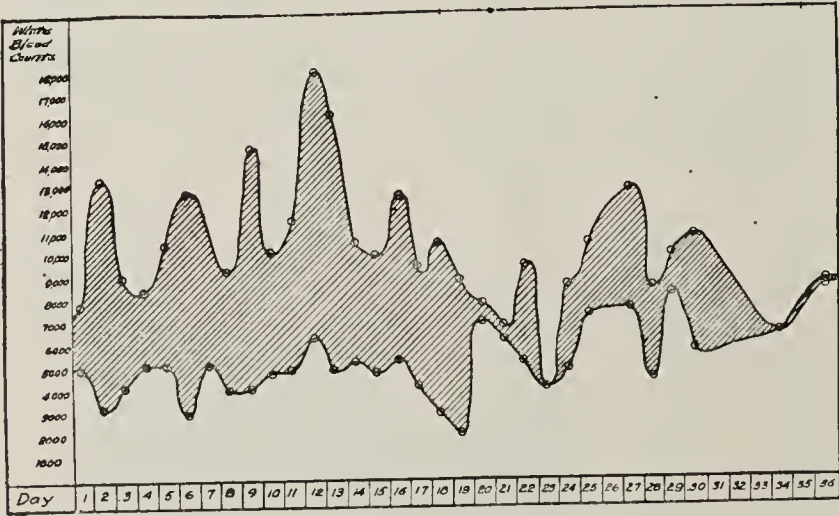


Chart 9.—Maximum and minimum blood counts in “uncomplicated” cases of proved typhoid arranged according to day of disease.

Mortality.—Death occurred in 11 per cent. of the 270 cases studied, and the average day of death was the twenty-first.

LITERATURE

The foregoing clinical findings in typhoid fever are in accord with the observations of others. Labbé⁵ remarks:

The symptomatology has nothing characteristic. The same elements are present as among the unvaccinated, and they

5. Labbé, Marcel: Ann. de méd. 3: 13, 1916.

had a similar number with long duration, and that the average was as in the nonvaccinated. A positive blood culture is an absolute finding, whereas a negative culture proves nothing. I can only state that we had positive cultures after the second week. Our true mortality may well be under 11 per cent. I assume that it will be too high rather than too low. Practically all severe cases of typhoid, especially in those who died, must have been recognized as such, whereas in hospi-

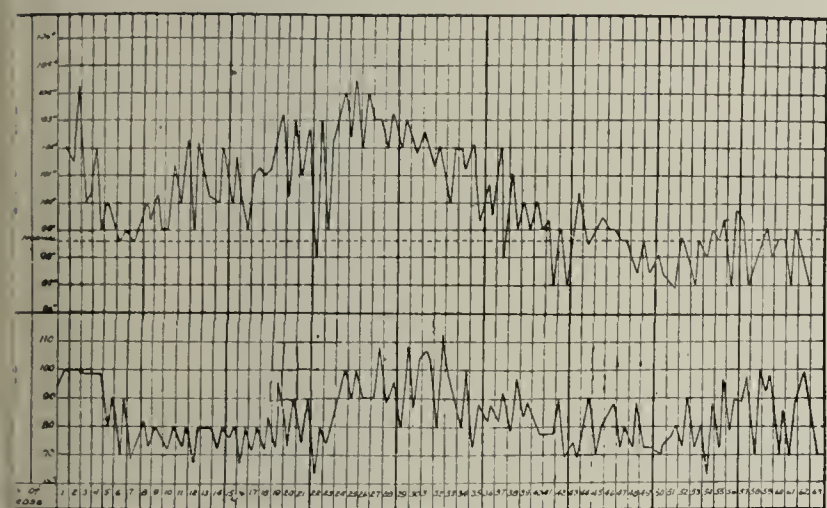


Chart 11.—Pulse and temperature in acute febrile disturbance; onset typical typhoid in second week.

where there was no epidemic many lighter cases probably remained undiagnosed. Our true mortality is presumably below 11 per cent., but there is a wide interval between that figure and the 2.4 per cent. of Labbé, which requires further interpretation.

The reason for this discrepancy between figures is recognized as a possibility by Labbé. His report comprises a study of 154 individuals who had received from one to four inoculations of antityphoid vaccine. Practically none had received triple vaccine. Immunized against *Bacillus typhosus*, these men had become infected with one of the two paratyphoid organisms. Among these only fifteen were infected with the organism against which they were inoculated, and among them the mortality was 26.6 per cent., more than twice as high as our own mortality. These fifteen were diagnosed by positive blood cultures. The well known lower mortality in the paratyphoid infections has lowered Labbé's total mortality figures.

The clinical symptomatology among French troops, as described by Bernard and Paraf,⁶ unlike that of Labbé, is definitely divided into that of straight typhoid infection and of paratyphoid. Concerning the former, my remark:

Typhoid fever (among the vaccinated) has no peculiar characteristics which might indicate a modification of the disease resultant on a modification of the soil. The different clinical forms are found with their usual characteristics. The mild forms present the usual appearance and evolution; few symptoms; no typhoid mental state; duration ten to fifteen days without complication, and simple convalescence. The moderately severe forms, common here as always, are the most frequent. They show nothing special, either in appearance of the symptoms, in the temperature curve, or in the progress or length of the disease. We remark that in four cases we found an unusually abundant eruption of rose spots and in one total absence thereof. . . . The more serious cases showed meteorism, a thick, dry tongue, and lessening of the heart sounds, as they are among the nonvaccinated. It is worth while, however, to mention the extreme rarity of the serious complications.

The mortality in the twenty-six cases studied by these authors was 0 per cent., and the average severity (severe and fatal cases) was 26.9 per cent., as contrasted with 37.5 per cent. severity among the nonvaccinated. There is in their series a diminution in the gravity of the disease.

Campani and Gallotti,⁷ working on the Italian front, found in a study of 144 nonvaccinated civilians and 341 vaccinated typhoid and paratyphoid soldiers that the mortality in the vaccinated straight typhoid patients was 8.6 per cent. and in the paratyphoid A and B, 4.6 and 7.8 per cent., respectively, as compared with 20 per cent., 0 and 0 per cent. in the unvaccinated. They found that in both groups about 42 per cent. of the patients had febrile periods lasting into the fourth week, and that the average duration of fever was, in the soldiers, 24.5 days, and among the civilians, 28 days. They state that the febrile curve, instead of being irregular and low in the vaccinated, was high and decidedly more regular than among the nonvaccinated, and that relapse occurred more frequently among the former. Splenomegaly and nervous phenomena were more frequent among the vaccinated. They conclude that vaccination has lessened both the mortality and the severity of the disease.

Bourges⁸ reports in detail the case histories of five vaccinated men infected with *B. typhosus*, all of whom recovered. The descriptions are those of cases of classical typhoid.

Freund,⁹ reporting typhoid infection in the German army, concludes that among the vaccinated there are more remissions and intermissions, and a greater proportion of mild cases. The fever is milder, but the total duration of the disease is not shortened. There is no change in the frequency of complications or relapses resultant on vaccination. The mortality among the vaccinated is given by him as 8.3 per cent.

Hawn, Hopkins and Meader,⁴ describing thirty-eight cases studied in an outbreak among American troops

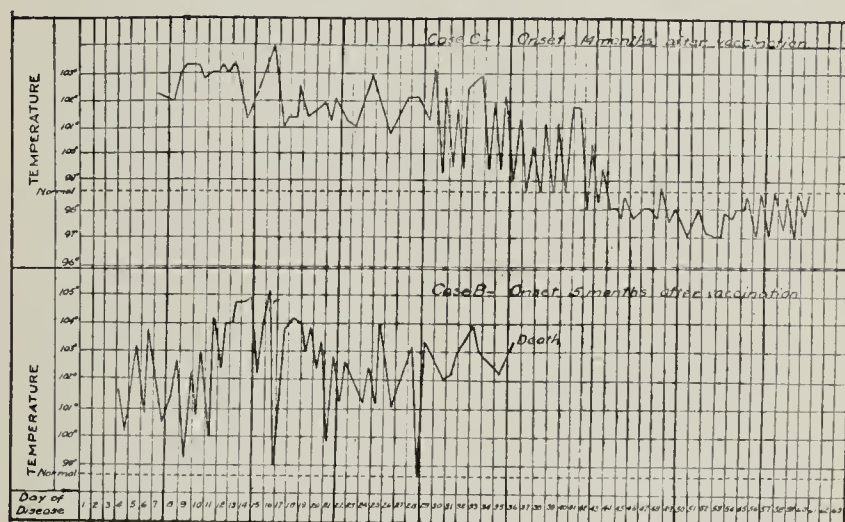


Chart 12.—Temperature in two cases.

in England, found clinical signs similar to our own. They described initial chills in 16 per cent., diarrhea in 58 per cent., constipation in 21 per cent., abdominal pain in 6 per cent., and epistaxis in 2.6 per cent. Among their thirty-eight cases rose spots were described in nineteen, palpable spleen in fifteen, and abdominal distention in nine. The average white counts ranged around 7,000 or less, and blood cultures were positive in twelve cases. The average duration

7. Campani, A., and Gallotti, A.: Gior. di med. mil. **66**: 614, 1918.
8. Bourges, H.: Arch. de méd. et pharm. nav. **105**: 224, 1918.
9. Freund, Ernst: Wien. klin. Wchnschr. **29**: 1232, 1916.

6. Bernard and Paraf: Ann. de méd. **2**: 443, 1914.

of the fever was thirty-five days, and the mortality in their series was 13.15 per cent. These findings among American troops in England corroborate ours for those in France.

Finally, the mortality for all troops in the American Expeditionary Forces from straight typhoid, between July 1, 1918, and May 31, 1919, was, for 1,242 cases, 13 per cent.

MORTALITY

Numerous observers have reported mortality results in the vaccinated. In Table 3 are given records of true typhoid in individuals immunized against *B. typhosus*.

It follows from a perusal of these varied results that

TABLE 3.—TYPHOID MORTALITIES IN THE VACCINATED

	Cases	Inoculations	Mortality, per Cent.
Bernard and Paraf.....	26	.....	0.0
Hunermann*.....	4	.....	2.6
Hunermann.....	2	.....	6.6
Crossonini†.....	28	3	7.1
Crossonini.....	50	1-2	8.0
Campani and Gallotti.....	.....	.....	8.6
Hawn, Hopkins and Meader.....	38	.....	13.1
Bonnell.....	15	3-4	13.3
Vaughan.....	270	.....	11.0
Total A. E. F., 11 months (as above).....	1,242	.....	13.0
H. Bourges.....	5	.....	0.0
Freund.....	.....	.....	8.3

* Hunermann: Verhandl. d. deutsch. Kong. f. innere Med., 1916, p. 192.

† Crossonini, E.: Sperimentale 71: 191, 1917.

‡ Bonnel, F.: Arch. de med. et pharm. mil. 65: 687, 1916.

the final determination of the mortality in inoculated typhoid patients is yet to be made. Many of the figures quoted above are much lower than our own, and yet the average is not lower than the mortality of 7.6 per

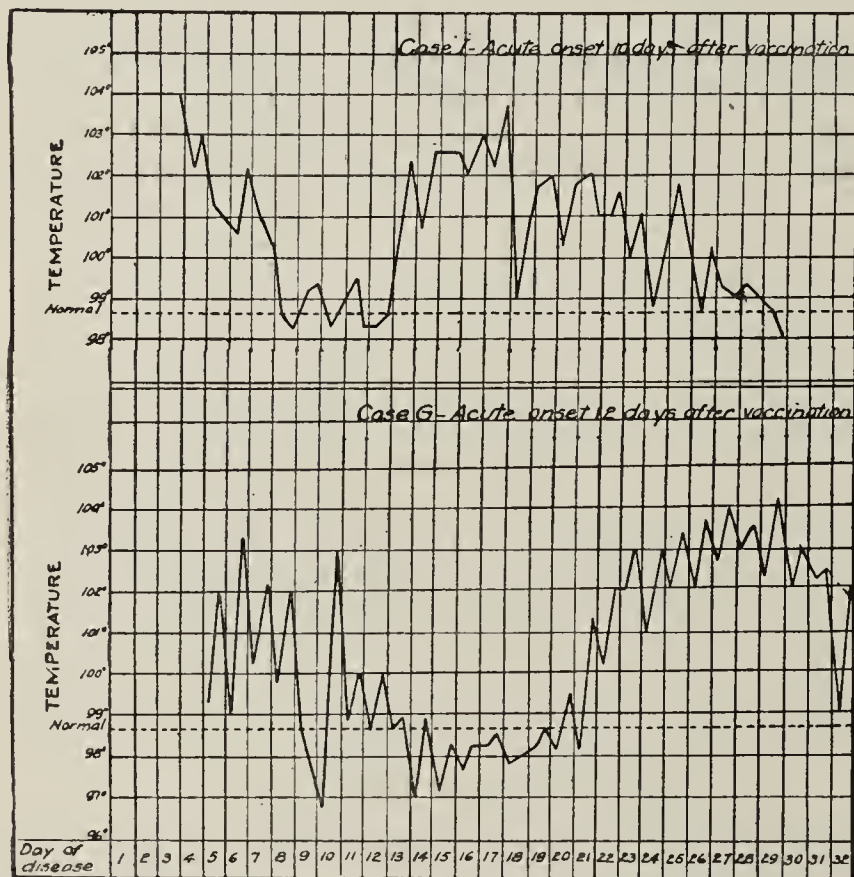


Chart 13.—Temperature in two cases with relapses following rather mild initial courses.

cent. among 20,000 men as reported by Reed, Vaughan and Shakespeare¹⁰ in the Spanish American War, or of that of 9.1 per cent. in 1,500 unvaccinated patients treated under Osler.¹¹

10. Reed, W.; Vaughan, V. C., and Shakespeare, E. O.: Report on Origin and Spread of Typhoid Fever in U. S. Military Camps During the Spanish War of 1898.

11. Osler, Sir William: The Principles and Practice of Medicine, New York, D. Appleton & Co., 1918.

The various and varying factors that influence the death rate in disease, and particularly in a disease like typhoid fever, can never be mathematically eliminated, and can be rendered negligible only when the mortality figures from all sources have become so great that they include numerous cases touched by every one of these factors and by all of their variations.

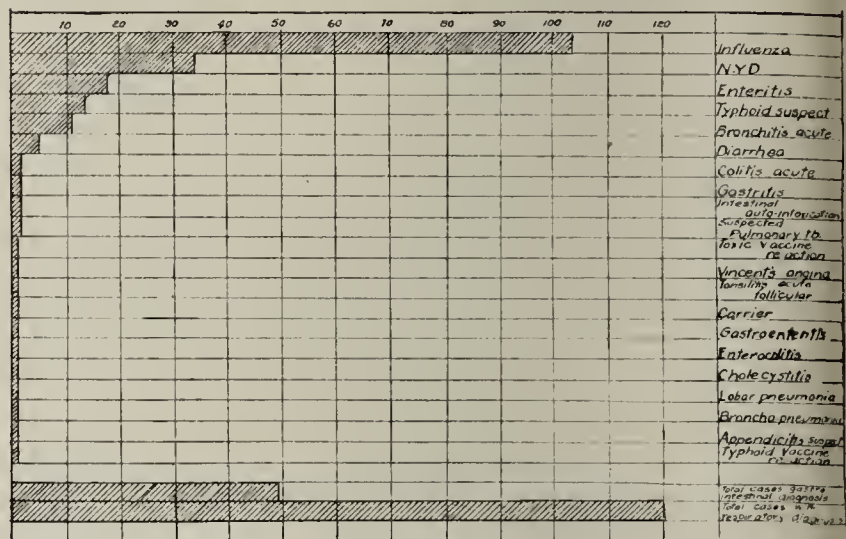


Chart 14.—Preliminary diagnosis in 206 cases of proved typhoid.

TIME RELATIONSHIP TO VACCINATION

Having ascertained that vaccination did not change the essential characteristics of the disease as it was found in the hospital and that it produced no such marked alteration in the incidence of complications or in the mortality as to be termed decisive, let us examine the other phase of the situation, the effect, if any, produced by varying intervals of time after the inoculations.

TABLE 4.—RELATIONSHIP BETWEEN TIME INTERVAL SINCE VACCINATION AND SEVERITY OF THE DISEASE IN TWO HUNDRED AND SEVEN CASES OF PROVED TYPHOID

Months Since Inoculation	Mild Course, per Cent.	Moderately Severe, per Cent.	Severe (Recovered) per Cent.	Died, per Cent.	Total Cases
1.....	57.6	24.2	3.0	15.2	33
2.....	12.5	62.5	12.5	12.5	8
3.....	57.2	28.5	0.0	14.3	7
4.....	11.1	44.4	22.2	22.3	9
5.....	32.0	52.0	8.0	8.0	25
6.....	31.5	47.4	10.5	10.6	19
7.....	40.0	40.0	20.0	0.0	20
8.....	66.6	26.7	0.0	6.7	15
9.....	31.2	31.2	18.8	18.8	16
10.....	0.0	33.3	66.7	0.0	3
11.....	12.5	62.5	25.0	0.0	8
12.....	40.0	40.0	20.0	0.0	5
13.....	16.6	66.7	16.7	0.0	6
14.....	20.0	60.0	20.0	0.0	5
15.....	18.2	36.3	18.2	27.3	11
16.....	0.0	66.7	33.3	0.0	6
17.....	0.0	50.0	25.0	25.0	4
18.....	25.0	50.0	25.0	0.0	4
19.....	0.0	0.0	0.0	100.0	1
20.....	50.0	50.0	0.0	0.0	2
Total.....					207

First, as regards the severity of the disease: In 207 cases of *B. typhosus* infection in which the date of inoculation was obtainable and the severity of the disease could be determined, we were able to tabulate the data presented in Table 4.

More instructive information is obtained on computing the average severity of the disease (severe percentage combined with fatal percentage) for six month periods following inoculation (Table 5).

There is seen a small but progressive increase in severity with lapse of time after inoculation. If we accept only those months that show ten or more cases

s being sufficiently large numbers to give reliable information, we find for one month periods the following:

It appears that the average severity of the disease remained fairly constant throughout the first eight months following inoculation, after which it increased gradually.

The incidence of relapses during this period is not notably changed. During the first month relapses occurred in 10 per cent. and during the first eight months in 11.9 per cent., as compared with 10 per cent. for the total series. Likewise, complications occurred in 21.5 per cent. during the first month, in 23.2 per cent. during the first eight months, and in 33.5 per cent. during the entire period. The last figure becomes higher because in the nineteenth month two complications occurred in one case, giving a resultant percentage of 100.

The type of onset of the disease appears to be influenced by the lapse of time after vaccination. Acute onset predominated in the first month, when it occurred in eighteen out of twenty-nine cases. During all other months the onset usually was gradual. Sixteen out of the twenty-nine cases showed onset between the

TABLE 5.—AVERAGE SEVERITY OF THE DISEASE

Months after Inoculation	Severity Percentage
From 1 to 6.....	11.6
7 to 12.....	14.7
13 to 18.....	15.9

TABLE 6.—AVERAGE SEVERITY BY MONTHS FOLLOWING INOCULATION

Month	No. of Cases	Severity Percentage
1.....	33	9.1
5.....	25	8.0
6.....	19	10.5
7.....	20	10.0
8.....	15	3.3
9.....	16	18.8
15.....	11	22.7

eventh and the twelfth days after inoculation—the recognized usual incubation period for typhoid fever. Imperfect vaccine with unkilld organisms as a cause of these cases is a possibility, but in our opinion a very remote one. Results of laboratory accidents, both reported and some unreported but with which I am personally acquainted, incline us to the belief that if living typhoid organisms were inoculated through the skin into a healthy adult, the chances are that he would not develop typhoid fever. We are particularly convinced of this as regards attenuated cultures. Most cases of laboratory infection appear to be due to hand to mouth contagion.

We know that about ten days are required after the introduction of antigen, be it living organism or killed vaccine, before antibodies appear in abundance and, in the case of the former, before disease symptoms become manifest. We also know that until the reactive period the organisms multiply freely in the body. If a man is inoculated on the first day with reliable vaccine and on the fourth or fifth becomes infected through contaminated drinking water, the organisms will grow abundantly within the body for a time. But this time will not be as long as it would were he not vaccinated. In the latter case it would be from seven to fourteen, usually ten days, after infection. In the former it would be that interval after inoculation, when the anti-

bodies called out by the artificial antigen would be present in numbers and would act on the living, growing virus. This we postulate to be the explanation for the larger number of cases occurring in post-vaccinated at the end of the incubation period. Patients in this group with onset preceding the seventh day were probably infected before inoculation. All patients who fell ill with the disease during the first month after inoculation were in a camp where there was a small epidemic of typhoid at the time, and all were vaccinated with the lipovaccine.

(To be continued)

Clinical Notes, Suggestions, and New Instruments

BLOODLESS THORACOSTOMY

R. J. BEHAN, M.D., PITTSBURGH

There are so many methods of trocar drainage of empyema cavities that I have hesitated to suggest another. However, since most of these methods have certain defects and are cumbersome and difficult of application, I thought it would be wise to describe a method minus such difficulties that I have used for the last four years.

At present there does not exist much antagonism to puncture drainage of an empyemic cavity; but four years ago such a procedure was radical, and was regarded with a good deal of skepticism. It was contended that a wide hole in the chest wall was necessary for empyema drainage, and it was held that drainage could not be thoroughly established through a small opening. It was also held that if a small opening should be made into the chest wall and a drainage tube inserted through this opening, the impinging of the ribs against the tube would block the tube and cut off the drainage.

So many of the patients having either acute or chronic empyema are in such bad condition and are so feebly resistant that any operative interference is very dangerous, especially operative interference that entails shock. The removal of a rib, with the cutting, etc., that is associated, causes some shock and has an operative risk; but the pushing through the chest wall in an intercostal space of a trocar and a cannula, after the area has been thoroughly anesthetized, causes little shock and is associated with hardly any risk.

It was with the idea of developing an instrument which could be easily used, which would not collapse with rib pressure, and which could be obtained at a reasonable cost, that I devised an apparatus, and had Harvey Pierce & Co. of Philadelphia make it for me in 1915.

The apparatus consists of three essential elements.

First, a very long aspirating needle (*a*) with a detachable nipple (*b*) which will fit a record syringe (*c*). This needle is calibrated from the tip to the hilt in centimeters and has a large lumen.

Second, a trocar (*d*) and a cannula (*e*). The trocar is of the shape shown in the illustration. It consists of a blade portion with a handle bent almost at right angles. At the upper part of the trocar blade is a groove, made so that it will accommodate the long aspirating needle. Over the trocar can be sheathed a cannula, which is calibrated in centimeters from the tip to the hilt. Over this cannula is drawn a shoulder-piece or sleeve (*f*), which can be tightened and firmly fixed at any point on the cannula. This shoulder has on it, on each side, a slit through which a tape can be threaded. This tape is passed around the body of the patient and tied so that the cannula is held firmly in place. At the end of that part of the cannula which is external to the patient is a small hole through which a suture, which has been passed through a rubber retention catheter, (*g*), introduced through the cannula (after the trocar has been removed), may be threaded and tied.

This self-retaining catheter (*g*), with its obturator (*h*), is the third essential constituent of this apparatus.

The trocars and cannulas are in various sizes and lengths to allow for different widths of the intercostal spaces and the varying depths at which pus is found. The depth to which a cannula may be inserted may be so regulated by the adjustable sleeve or shoulder-piece on the cannula that an abscess of the lung, even some distance from the surface, may be drained without danger.

OPERATIVE TECHNIC

The empyema or abscess cavity is localized by physical examination and the roentgen-ray. Then the skin over the lung abscess or empyema is sterilized by tincture of iodine, and is anesthetized by procaine 1 per cent., so that the tissues down to and including the pleura are desensitized.

The large needle attached to a record syringe is now inserted. As soon as the tip of the needle has passed through the skin, the piston is drawn up in the barrel so that there is a constant negative pressure in the needle. The needle is now inserted directly toward the supposed location of the empyema or abscess.

As soon as the needle enters the pus cavity, pus is aspirated into the syringe by negative pressure. The syringe is detached and the needle is left in place. The depth at which pus is found is noted on the needle. The nipple of the needle is now removed.

Then the trocar with its cannula, the shoulder of which has been set at a little more than the depth indicated on the needle, is threaded on the obturator (shown in the illustration) and is pushed down over the needle into the cavity. The needle and trocar are now removed, the cannula being held in place by the fingers of the left hand of the operator. A rubber self-retaining catheter of a slightly larger size than the lumen of the cannula is now threaded on the obturator and is put on the stretch so that the portion which is to enter the cannula

is of considerably less diameter than when in its normal state of tension. It is then pushed through the cannula into the pus cavity.

During these procedures a slight amount of air may enter the pleural cavity. Such entrance may be unavoidable, but is of no consequence. I have never found any ill resulting from it. However, aspiration of air generally does not occur, as the pus is at a greatly increased pressure and immediately drips out of the needle, or will run out of the catheter after it has been inserted. Immediately on the insertion of the catheter, after the obturator is withdrawn, I block off the catheter by placing on it a hemostat.

The tape, attached to the shoulder of the cannula, is tied around the chest of the patient. A piece of very thin gauze, well coated with petrolatum, is wound around the cannula beneath its shoulder. A suture is then passed through the catheter, which is held fixed in place at the proper depth. This suture is generally of linen or silk. As a further protection, the shoulder of the cannula may be sutured with silkworm gut or with linen to the skin.

On the catheter itself a two-way cock may be inserted. Most frequently we insert a rubber tube connection and drain into a bottle alongside the patient's bed, as is done for empyema of the gallbladder. It is also common with us to use the so-called Woulfe bottle drainage, and at the same time we have the patient blow the water from one of the bottles to another. If a rubber or glass Y has been placed on the tube, surgical solution of chlorinated soda (Dakin's solution) may be instilled through one of the arms of the Y, if it is necessary, or the solution may be run directly into the cavity through the catheter.

As a final dressing, gauze is applied around the tube and cannula, and the tapes passing around the chest are covered with adhesive plaster which has been moistened with ether, in order to make it stick.

RESULTS

I have used the foregoing method in numerous cases, and have invariably found it satisfactory. It has been adopted by my colleagues in the hospital, one of whom used it extensively during the influenza epidemic of 1918, and he states that in no case did he have any difficulty.

The entire method is very simple and causes absolutely no shock to the patient. Little patients who have been brought to our institution almost moribund have improved wonderfully from day to day with the trocar-cannula drainage inserted under a local anesthetic. I have used this method also in cases of lung abscess. In one case, that of a child, the abscess had communicated with a bronchus, so that for some time he had been coughing up pus. The abscess cavity was definitely located by the roentgen-ray. It was about 2 inches from the surface of the lung, in the third interspace in the anterior axillary line on the right side. The needle was inserted and pus was found. The drainage was then introduced, according to the technic described above. Considerable foul pus was evacuated. Immediately after drainage had been instituted, the disagreeable, foul sputum ceased.

The temperature dropped, and the child made a quick recovery, except for a persisting sinus, which was finally healed by the injection of Beck's paste.

In another case of lung abscess the patient inside of a week, after drainage had been instituted, began to take on flesh. The cough had ceased and there was no more foul sputum.

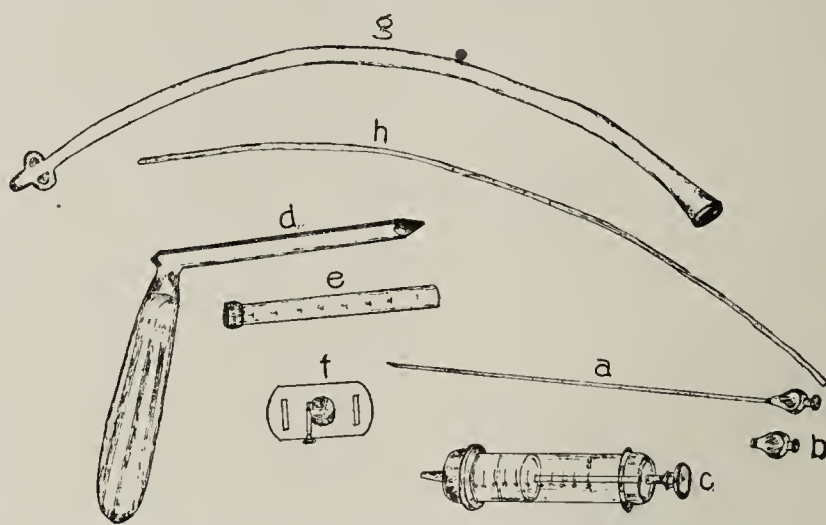
The apparatus is such that it enables us to reach deep-seated abscesses of the lung which, otherwise, would be inaccessible.

So far, I have had no hemorrhage, although I always, of

course, follow the needle which has localized the pus and has been left in place. I have allowed the cannula to remain in the chest wall for long periods. It does not seem to produce any necrosis of the surrounding tissues or of the adjacent ribs. The opening remains absolutely air-tight for at least eight or ten days; then if it leaks air somewhat, the leakage may be controlled for another week or ten days by smearing over and around the cannula large quantities of petrolatum.

As I have said, in no case have I encountered disagreeable or unsatisfactory after results.

Suite 6079, Jenkins Arcade Building.



Apparatus for performing bloodless thoracostomy: *a*, puncture needle; *b*, nipple (detachable); *c*, record syringe; *d*, trocar; *e*, cannula; *f*, sleeve; *g*, catheter; *h*, obturator.

Tobacco Smoking in Pulmonary Tuberculosis.—There is some conflict of opinion about the harmfulness of tobacco smoking in pulmonary tuberculosis, and at least one writer has tried to prove that it is actually beneficial. Most sanatoriums limit the time for smoking to half an hour after meals. Certainly, smoking before meals is definitely harmful in that it satisfies by numbing the appetite at the time when this ought to be keenest. Quite apart from the action of tobacco on the circulation, it is generally acknowledged that it is an irritant to the upper air passages. Many a patient will admit that he has more real sputum (not merely saliva) when he is smoking heavily than when he gives it up. Nevertheless, the psychologic factor is again so strong as to decide policy in this respect; and where men become miserable or restless when they are deprived of their tobacco, it is better to allow it in moderation after meals. Patients with laryngeal tuberculosis should be forbidden the use of tobacco altogether.—James Watt, *J. State Med.*, March, 1920.

STATE BOARD STATISTICS FOR 1919

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1084 to 1091 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1919. All state licensing boards sent in reports and the figures have been carefully verified.

Tables A and B, when read from left to right, show for each medical college named (a) the number of graduates appearing for examination in each state, (b) whether they passed or failed, (c) the total number examined during the year, (d) the number who passed, (e) the number who failed, (f) the percentage of failures, and (g) the number of states in which graduates of that school appeared for examination. Read from above downward, they give the results by states, showing (h) the number registered and rejected from each college, (i) the total numbers examined, registered and rejected, and (j) the percentage of rejections. The majority of graduates take the license examination in the state in which the college is located, as shown by the dark diagonal zone of figures passing from the upper left to the lower right corner of each table. These tables are worthy of careful study, since important deductions are possible. The marginal numbers will enable one to follow readily the line for any college.

GRADUATES OF ALL YEARS EXAMINED IN 1919

Table A shows the results for all candidates who took examinations in 1919, regardless of the years in which they graduated. This shows that altogether 4,736 candidates were examined last year, as compared with 3,637 in 1918, 4,730 in 1917, 4,850 in 1916 and 5,313 in 1915. This year shows an increase of 1,099. Previously, there had been a steady decrease since 1906 owing chiefly to (a) the larger registration through reciprocity, and (b) the general diminution in the number of medical colleges, students and graduates. The marked decrease last year was due to the enlistment of many physicians for military medical service. Of those examined this year, 14.3 per cent. failed, as compared with 13.3 in 1918, 14.1 per cent. in 1917, 15 per cent. in 1916 and 15.6 per cent. in 1915.

There were 79 medical colleges in the United States granting degrees in 1919 which had graduates examined, as compared with 80 in 1918, 89 in 1917 and 1916 and 93 in 1915. There has been a decrease of 74 since 1905, when graduates from 153 medical colleges were examined. The statistics covering schools which have ceased to exist are included in the line for "miscellaneous colleges."

Graduates of Canadian schools were examined in 22 states. The largest number, 23, were examined in New York, the next largest number being 8 examined in Massachusetts. The figures are given separately in order to show the number of candidates coming from each, and to show the successes of their graduates at the examinations. Altogether, 71 candidates from Canadian colleges were examined, of whom 22, or 31 per cent., failed.

Foreign graduates were examined in 17 states, the total examined being 67, and of this number 30, or 44.8 per cent., failed. In 1918, 45 foreign graduates were examined. The largest number of foreigners examined in any state in 1919 was 21 in California, where 9, or 42.9 per cent., failed.

CAUTION IN FORMING CONCLUSIONS

In making comparisons on the basis of these statistics, the reader must keep in mind (a) the number examined, since the larger the number of graduates examined, the more accurate is the finding; (b) the number of states in which a school's graduates have been examined, since the larger this number, the more accurate will be the conclusions; (c) the character of the board making the examination and the methods employed, since some boards refuse to examine graduates of inferior medical colleges, while others (see Table H) not only examine graduates of all medical colleges but also

admit osteopaths to the physicians' and surgeons' examination. Some boards also hold careful examinations which include practical laboratory and clinical tests, or they mark the papers more severely, while others, especially partisan boards, are very lenient. Although conditions are undergoing a gradual improvement, it is still true that the license examinations, as usually conducted, are much more lenient than those required in other countries. It is particularly important, in forming conclusions based on these statistics, to note for each college the states in which its graduates are not admitted to examination—information set forth with these statistics in Table D. A state board which admits to its examinations graduates of low-grade medical schools would be expected to have a higher percentage of failures.

UNDERGRADUATES AND OSTEOPATHS EXAMINED DURING 1919

For the last three years the few undergraduates examined have been accidental instances due evidently to imperfect credentials. In 1906, there were 703 undergraduates examined, and 342 were licensed. Colorado is now the only state which will knowingly admit nongraduates to its examinations, but only six have been licensed in that state in fourteen years, two having been so licensed this year. The door has been closed, therefore, against the admission to practice of those whose medical training is known to be incomplete. At present, however, some boards are registering as physicians and surgeons, by examination or by reciprocity, graduates of osteopathic colleges—no one of which compares favorably with the lowest grade Class C medical college—even though in two of these states—Colorado and Texas—the boards refuse to admit graduates of Class C medical schools to their examinations. (See Table D on pages 1092 and 1093.)

During 1919, in California, 28 graduates of osteopathic colleges were admitted to the regular examination for licenses as physicians and surgeons, and of this number 13, or 46.4 per cent., were granted licenses. In Colorado, of 25 osteopaths examined, 14, or 56 per cent., were granted licenses as physicians and surgeons (see Tables G and I). Two osteopaths were so licensed in Washington and one each in New Hampshire and Texas. Altogether 57 osteopaths were examined as physicians and of this number 31, or 54.4 per cent., passed.

RECENT GRADUATES EXAMINED DURING 1919

Table B gives the results for graduates of 1915 to 1919, inclusive, examined during 1919. This table is important, since it deals with recent graduates, and is, therefore, the fairest basis for comparison between colleges. Of all candidates examined in 1919, 3,904, or 82.4 per cent., were recent graduates, and of this number, 10.5 per cent. failed, as compared with 14.3 per cent. for all candidates.

OLD PRACTITIONERS EXAMINED DURING 1919

Table C is so arranged as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1914 and previous years (third column), and for graduates of 1919 (fourth column). Of the graduates of 1914 and previous years—"old practitioners"—767 were examined, and of this number 236, or 30.8 per cent., failed, as compared with 10.5 per cent. of failures for recent graduates. This high percentage of failures is due largely to the long time these candidates have been out of college and to the fact that they are commonly required to take the same examination as recent graduates. Justice to these older physicians, who have been licensed, but who, for good reasons, desire to change their locations, is a strong argument for the use of

(CONTINUED ON PAGE 1091)

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	Marginal Number				
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota					
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F					
1	ALABAMA University of Alabama School of Medicine.....	3	0							2	1							1	0					1				
2	ARKANSAS University of Arkansas Medical Department.....	0	1		11	1	0											2	0					2				
3	CALIFORNIA College of Medical Evangelists.....				6	0															1	0		3				
4	College of Physicians and Surgeons, Los Angeles.....		1	0		23	5														1	0		4				
5	College of Physicians and Surg., San Francisco.....				3	6																		5				
6	Leland Stanford Junior Univ. School of Medicine.....				16	0																		6				
7	Oakland College of Medicine and Surgery.....				2	0																		7				
8	University of California Medical School.....									1	0										1	0		8				
9	COLORADO University of Colorado School of Medicine.....					18	0			1	1		1	0										9				
10	CONNECTICUT Yale University School of Medicine.....						11	0										1	0		1	0	1	0	10			
11	DISTRICT OF COLUMBIA Georgetown University School of Medicine.....		2	0			3	1		7	0	1	0								1	0		1	0	11		
12	George Washington University Medical School.....								19	0			1	0	1	0				1	0	1	0		1	0	12	
13	Howard University School of Medicine.....								7	2				1	1					1	0	1	0			13		
14	GEORGIA Emory University School of Medicine.....	2	1			1	0	1	1			3	1	27	0			1	0						14			
15	University of Georgia Medical Department.....									1	0	7	0												15			
16	ILLINOIS Chicago Medical School.....					1	0			0	1		1	0	27	18					3	8			16			
17	Hahnemann Medical College and Hospital.....		1	0		1	0					1	0	18	0		2	0			1	0			17			
18	Loyola University School of Medicine.....	1	1		1	0	0	1		1	1		1	0	82	12		2	2		0	1			1	0	18	
19	Northwestern University Medical School.....		3	0		1	1					2	0	87	1			1	0							19		
20	Rush Medical College (University of Chicago).....		1	0		3	0	1	0			1	0	5	0	127	1		5	0						20		
21	University of Illinois College of Medicine.....		3	0	1	0	1	0	1	0		2	0	1	0	72	2		5	0	1	0			2	0	21	
22	INDIANA Indiana University School of Medicine.....		1	0									2	0	28	0			1	0						22		
23	IOWA State University of Iowa College of Medicine.....											1	0	2	0		43	0								23		
24	State Univ. of Iowa Coll. of Homeo. Med.—H.																1	0								24		
25	KANSAS University of Kansas School of Medicine.....				1	0						1	0			1	0	20	0							25		
26	KENTUCKY University of Louisville Medical Department.....	0	1					1	1			4	2				1	0	18	1						26		
27	LOUISIANA Tulane University of Louisiana School of Med. ...	4	0	1	0	3	0			1	0		3	0	1	0				59	0		1	0		27		
28	MAINE Bowdoin Medical School.....									1	0	1	0		1	0			1	0		17	0		4	0	28	
29	MARYLAND Johns Hopkins University Medical Department....	2	0	1	0		2	1		5	0		4	0	1	0	1	0		3	0	2	0		1	0	29	
30	Univ. of Md. School of Med. & Coll. of P. & S.	1	0	1	0	1	0		0	1	1	0	2	0	2	0	2	0		2	0	57	3	6	0		30	
31	MASSACHUSETTS Boston University School of Medicine.....											1	0		1	0					1	0		9	1		31	
32	College of Physicians and Surgeons, Boston.....								0	1			1	0								6	7				32	
33	Medical School of Harvard University.....		1	0		2	0	2	0	6	1		2	0	1	1		3	0	1	0		1	0		5	0	33
34	Middlesex College of Medicine and Surgery.—N.									1	0									7	0	2	0	95	0		34	
35	Tufts College Medical School.....				0	1		10	3			1	0								6	12					35	
36	MICHIGAN Detroit College of Medicine and Surgery.....		1	0		0	1					2	0			1	0							27	0		36	
37	University of Michigan Medical School.....		1	0								1	0														37	
38	University of Michigan Homeo. Med. School.—H.				1	0															3	0	6	0			38	
39	MINNESOTA University of Minnesota Medical School.....		1	0		1	0						1	0											67	0	39	
40	MISSOURI Kansas City College of Medicine and Surgery.—N.				32	1																					40	
41	Kansas City Univ. of Phys. and Surgs.—N.						1	0											1	0							41	
42	St. Louis College of Physicians and Surgeons.....		1	0		0	1	0	2																		42	
43	St. Louis University School of Medicine.....		1	0	1	0	1	0				1	0		7	0		3	0	1	0		1	0			43	
44	Washington University Medical School.....					1	0						2	1		1	0		1	0		1	0	2	0		44	
45	NEBRASKA John A. Creighton Medical College.....		0	1			1	0	1	0			1	0			1	0	1	0		1	0				45	
46	University of Nebraska College of Medicine.....							2	0				1	0		4	0						1	0			46	
47	NEW YORK Albany Medical College.....		0	1				1	0			0	1										2	0		2	0	47
48	Columbia University College of Phys. and Surgs.				1	0		13	0		1	0	1	0	4	0					1	0		6	0	1	0	48
49	Cornell University Medical School.....			1	0			5	0		1	0										1	0			1	0	49
50	Fordham University School of Medicine.....						4	1																			50	
51	Long Island College Hospital.....				0	1		3	0														1	0	1	0		51
52	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.		1	0		1	0		3	0	3	0										1	0	2	0			52
53	Syracuse University College of Medicine.....																						1	0		1	0	53
54	University and Bellevue Hospital Med. Coll.							4	0			1	0			1	0			1	0		1	0			54	
55	University of Buffalo Medical Department.....											1	0			3	0										55	
56	OHIO Eclectic Medical College.—E.		2	0		0	1																				56	
57	Ohio State University College of Medicine.....		1	0																							57	
58	Ohio State University Coll. of Homeo. Med.—H.												1	0													58	
59	University of Cincinnati College of Medicine.....					1	0					1	0											1	0		59	
60	Western Reserve University School of Medicine.....				1	0						1	0													1	0	60
61	OKLAHOMA University of Oklahoma School of Medicine.....									1	0					1	0											

H. = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

[illegible]

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F
69	SOUTH CAROLINA Medical College of the State of South Carolina..						1 0		1 0	2 0	2 0												
70	TENNESSEE Meharry Medical College.....	2 2		3 4			0 1			0 1	4 1		7 29	1 0									
71	University of Tennessee College of Medicine.....		1 0	6 0	0 1	1 0			1 0	1 2		1 0					2 0	5 4	1 5		4 2		
72	Univ. of West Tennessee Medical Department.....																	2 0					
73	Vanderbilt University School of Medicine.....	2 0		1 0		2 0				2 0	1 0						1 0				1 0		
74	TEXAS Baylor University College of Medicine.....				1 0																		
75	University of Texas Department of Medicine.....																						
76	VERMONT University of Vermont College of Medicine.....				0 1		6 2												1 0		12 0		
77	VIRGINIA Medical College of Virginia.....				1 0		0 3	1 0		1 1	1 0												
78	University of Virginia Department of Medicine...						1 0			2 0								1 0					
79	WISCONSIN Marquette University School of Medicine.....																						
80	CANADA Dalhousie University Faculty of Medicine.....								1 0											1 0	1 0	1 0	
81	Laval University Faculty of Medicine.....																		1 0		1 3		
82	McGill University Faculty of Medicine.....				1 0		3 1		1 0			1 0	2 0						1 0		2 0		
83	Montreal School of Medicine and Surgery.....																						
84	Queen's University Faculty of Medicine.....				1 0					1 1			1 0						0 1		0 1		
85	University of Manitoba, Manitoba Medical College																						
86	University of Toronto Faculty of Medicine.....		1 0		1 0	2 0																1 0	
87	Western University Faculty of Medicine.....												0 1						0 1			4 0	
88	Foreign Colleges		2 0		12 9	0 1				1 0			1 1	1 0		0 1					2 0		
89	Miscellaneous Medical Colleges.....	3 6	18 3	8 1	3 11	5 1	4 6	1 0	0 3	16 5	2 4	5 0	16 29	1 0	4 2	2 2	3 1	7 1		1 2	18 4		2 0
90	Undergraduates and Osteopaths.....		1 0		13 15	16 11																	
91	Totals by States.....	35	53	77	165	73	118	20	57	81	65	31	571	34	82	35	38	86	46	156	346	52	98
92	Totals — Examined—Passed.....	23	48	70	109	57	94	19	51	64	60	31	475	34	78	32	31	80	43	145	305	52	98
93	Totals — Examined—Failed.....	12	5	7	56	16	24	1	6	17	5	6	96	0	4	3	7	6	3	11	41	0	0
94	Percentage of Failures.....	34.3	9.4	9.1	33.9	21.9	20.3	5.0	10.5	21.0	7.7	0.0	16.8	0.0	4.9	8.6	18.4	7.0	6.5	7.1	11.8	0.0	0.0
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

H. = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

TABLE B—GRADUATES OF 1915 TO 1919, INCLUSIVE

	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F
1	ALABAMA University of Alabama School of Medicine.....	3 0								1 0													
2	ARKANSAS University of Arkansas Medical Department.....	0 1		7 1	1 0													2 0					
3	CALIFORNIA College of Medical Evangelists.....				6 0																		
4	College of Physicians and Surgeons, Los Angeles.		1 0		23 5																1 0		
5	College of Physicians and Surg., San Francisco...				3 6																1 0		
6	Leland Stanford Junior Univ. School of Medicine.				16 0																		
7	Oakland College of Medicine and Surgery.....				2 0																		
8	University of California Medical School.....																						
9	COLORADO University of Colorado School of Medicine.....					18 0																	
10	CONNECTICUT Yale University School of Medicine.....						10 0																
11	DISTRICT OF COLUMBIA Georgetown University School of Medicine.....						3 1		7 0														
12	George Washington University Medical School...							18 0				1 0	1 0								1 0		1 0
13	Howard University School of Medicine.....						7 2						1 1							1 0			
14	GEORGIA Emory University School of Medicine.....	2 0			1 0					1 0	26 0												
15	University of Georgia Medical Department.....									1 0	7 0												
16	ILLINOIS Chicago Medical School.....					1 0			0 1			1 0	27 18										
17	Hahnemann Medical College and Hospital.....					1 0							18 0		1 0						3 8		
18	Loyola University School of Medicine.....	1 1								1 0	3 0	1 0	80 7		2 2		0 1				1 0		1 0
19	Northwestern University Medical School.....		2 0		1 0								85 1			1 0							
20	Rush Medical College (University of Chicago)...				3 0	1 0					1 0	3 0	124 0		5 0							1 0	2 0
21	University of Illinois College of Medicine.....				1 0							1 0	71 1		5 0	1 0					2 0		4 0
22	INDIANA Indiana University School of Medicine.....		1 0																				
23	IOWA State University of Iowa College of Medicine.....												2 0		43 0								
24	State Univ. of Iowa Coll. of Homeo. Med.—H.														1 0								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

H. = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50							
Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number	
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
							2 0	0 1					0 1		11 2								1 0				24	20	4	16.7	29	69	
3 0							1 0	1 3	0 2	1 0					2 2		19 3	2 0				1 0	7 5			131	65	66	50.4	21	70		
							1 0	0 1	1 0		1 0				1 0		18 0	0 0				1 0				41	38	3	7.3	14	71		
					1 0		1 4			1 0					3 0		12 3									7	3	4	57.1	3	72		
							0 1										25 0					1 0				46	42	4	8.7	13	73		
																	1 0	18 0	1 0							22	20	2	9.1	4	74		
																	32 0					1 0				53	53	0	0.0	2	75		
							9 9			1 0				1 0						19 0			1 0			62	50	12	19.4	9	76		
					1 0		1 5	6 1		0 2	1 0		1 0		1 0				1 0		20 10		3 0			60	38	22	36.7	14	77		
							5 0										1 0		1 0		16 0					32	32	0	0.0	9	78		
									1 0			1 0												14 0			16	16	0	0.0	3	79	
																										3	3	0	0.0	3	80		
														0 1												6	2	4	66.7	3	81		
							3 5			1 0		1 0						1 0				2 0				26	20	6	23.1	13	82		
																										2	0	2	100.0	2	83		
					1 0		6 4														1 0					16	11	5	31.3	6	84		
																										0	0	0	0.0	0	85		
							2 3						1 0													11	8	3	27.3	6	86		
										1 0																7	5	2	28.6	4	87		
3 0			2 0				1 9					1 0	3 1	1 0								1 0	4 0			2 8	67	37	30	44.8	17	88	
7 0	8 5	1 1			6 1	1 0	6 6	1 1	2 2	4 1	6 0	6 3	8 6	3 1	1 6	6 0		0 1	1 0		4 2	10 4	1 2	1 0	3 2	5 4	340	210	120	38.2	44	89	
																	1 0	1 0				2 0	0 5			66	35	31	47.0	8	90		
137	38	107	13	5	62	2	816	68	10	164	34	42	241	25	59	21	103	92	29	22	77	73	50	34	27	45	4736	91	
136	26	102	13	5	61	2	627	59	6	156	34	39	213	20	45	20	96	89	29	22	65	63	35	34	19	27	4060	92	
1	12	5	0	0	1	0	189	9	4	8	0	3	28	5	14	1	7	3	0	0	12	10	15	0	8	18	.....	.....	.....	.....	93
0.7	31.6	4.7	0.0	31.6	1.6	0.0	23.2	13.2	40.0	4.9	0.0	7.1	11.6	20.0	28.6	4.8	6.8	3.3	0.0	0.0	15.6	13.7	30.0	0.0	66.7	40 0	.....	.....	.....	11.3	94
24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50							

MINED BY STATE BOARDS DURING 1919

24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50							
Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number	
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
											1 0																6	6	0	0.0	4	1	
																											12	10	2	16.7	4	2	
			2 0																			1 0					10	10	0	0.0	4	3	
			2 0																								21	26	5	16.1	4	4	
																											11	5	6	54.5	2	5	
																											18	18	0	0.0	2	6	
							2 0																				2	2	0	0.0	1	7	
																											1	1	0	0.0	1	8	
																											18	18	0	0.0	1	9	
							4 0							1 0								1 0					19	19	0	0.0	7	10	
					2 0		0 2			2 0																	18	15	3	16.7	6	11	
							1 0						4 0		1 0		1 0					1 0					27	27	0	0.0	9	12	
3 0					1 0		1 4																				28	21	7	25.0	10	13	
								1 2							4 1												38	35	3	7.7	6	14	
							0 1								3 0												12	11	1	8.3	4	15	
																						2 0			0 1		62	34	28	45.2	7	16	
																		1 0									22	22	0	0.0	5	17	
0 4	0 0	3 0	2							1 1						1 0	2 0			1 0	1 0		1 1	2 0			133	114	19	14.4	23	18	
							0 1									1 0						1 1	2 0				98	96	2	2.0	9	19	
	1 0	6 0					1 0		1 0			1 0			1 0	3 0						1 0					168	168	0	0.0	13	20	
							1 0				1 0												1 0					89	88	1	1.1	10	21
																											32	32	0	0.0	4	22	
																											45	45	0	0.0	2	23	
																											1	1	0	0.0	1	24	
24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50							

Marginal Number	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Minnesota	Massachusetts
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F
	KANSAS																					
25	University of Kansas School of Medicine.....				1 0							1 0				1 0	20 0					
	KENTUCKY																					
26	University of Louisville Medical Department.....									1 1							17 1					
	LOUISIANA																					
27	Tulane University of Louisiana School of Med. ..	4 0		2 0			1 0			3 0	1 0								57 0			
	MAINE																					
28	Bowdoin Medical School.....								1 0										16 0		2 0	
	MARYLAND																					
29	Johns Hopkins University Medical Department....	1 0			2 1		1 0		2 0	1 0	1 0		3 0	2 0						70 3	5 0	
30	Univ. of Md. School of Med. & Coll. of P. & S.	1 0	1 0	1 0	1 0		0 1	1 0	2 0	1 0	1 0	2 0							2 0	56 3	6 0	
	MASSACHUSETTS																					
31	Boston University School of Medicine.....																		1 0		7 1	
32	College of Physicians and Surgeons, Boston.....																				6 6	
33	Medical School of Harvard University.....		1 0		2 0	2 0	5 1		2 0	1 0			3 0	1 0		1 0					0 90	0
34	Middlesex College of Medicine and Surgery.—N.								1 0									1 0	7 0	2 0	6 12	
35	Tufts College Medical School.....				0 1		10 3			1 0									5 1		82 5	
	MICHIGAN																					
36	Detroit College of Medicine and Surgery.....																					27 0
37	University of Michigan Medical School.....																				1 0	6 0
38	University of Michigan Homeo. Med. School.—H.				1 0																	8 0
	MINNESOTA																					
39	University of Minnesota Medical School.....				1 0								1 0									
	MISSOURI																					
40	Kansas City College of Medicine and Surgery.—N.			32 1																		
41	Kansas City Univ. of Phys. and Surgs.—N.					1 0																
42	St. Louis College of Physicians and Surgeons.....					0 2											1 0					
43	St. Louis University School of Medicine.....			1 0	1 0								7 0		2 0	1 0						
44	Washington University Medical School.....					1 0							1 0		1 0			1 0		1 0	2 0	
	NEBRASKA																					
45	John A. Creighton Medical College.....														1 0	1 0						
46	University of Nebraska College of Medicine.....							2 0					1 0		4 0						1 0	
	NEW YORK																					
47	Albany Medical College.....						1 0															
48	Columbia University College of Phys. and Surgs.				1 0		12 0				4 0										2 0	1 0
49	Cornell University Medical School.....						4 0		1 0												1 0	
50	Fordham University School of Medicine.....						4 1															
51	Long Island College Hospital.....						3 0															
52	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.						2 0	3 0														
53	Syracuse University College of Medicine.....				1 0															1 0		
54	University and Bellevue Hospital Med. Coll.						3 0			1 0			1 0								1 0	
55	University of Buffalo Medical Department.....												1 0								1 0	
	OHIO																					
56	Eclectic Medical College.—E.		1 0																			
57	Ohio State University College of Medicine.....		1 0																			
58	Ohio State University Coll. of Homeo. Med.—H.																					
59	University of Cincinnati College of Medicine.....					1 0						1 0	1 0								1 0	
60	Western Reserve University School of Medicine...				1 0							1 0					1 0					
	OKLAHOMA																					
61	University of Oklahoma School of Medicine.....									1 0						1 0					1 0	
	OREGON																					
62	University of Oregon Medical School.....																					
	PENNSYLVANIA																					
63	Hahnemann Medical College and Hospital.—H.							1 0	1 0												2 0	
64	Jefferson Medical College.....	1 0		1 0	3 0	2 0	6 0	3 0		2 0			2 0							2 0	2 0	
65	Temple University Department of Medicine.....							3 1														
66	University of Pennsylvania School of Medicine...				4 0		1 1	3 0	1 0		1 0	2 0	2 0		4 0					0 1	1 0	
67	University of Pittsburgh School of Medicine.....						1 0														2 0	1 0
68	Woman's Medical College of Pennsylvania.....	1 0																				
	SOUTH CAROLINA																					
69	Medical College of the State of South Carolina...						1 0		1 0		1 0											
	TENNESSEE																					
70	Mcharry Medical College.....	2 2		3 3						0 1	4 1		6 24			2 0	5 4	1 5		4 2		
71	University of Tennessee College of Medicine.....		1 0	6 0					1 0	1 0		1 0						1 0				
72	Univ. of West Tennessee Medical Department.....																					
73	Vanderbilt University School of Medicine.....	2 0		1 0		2 0				1 0												
	TEXAS																					
74	Baylor University College of Medicine.....				1 0																	
75	University of Texas Department of Medicine.....																					
	VERMONT																					
76	University of Vermont College of Medicine.....						5 1															
	VIRGINIA																					
77	Medical College of Virginia.....				1 0		0 3	1 0		1 0	1 0								1 0		5 0	
78	University of Virginia Department of Medicine...						1 0				2 0											
	WISCONSIN																					
79	Marquette University School of Medicine.....																					
	CANADA																					
80	Dalhousie University Faculty of Medicine.....								1 0													
81	Laval University Faculty of Medicine.....																			1 0		
82	McGill University Faculty of Medicine.....																				1 2	
83	Montreal School of Medicine and Surgery.....						3 1					1 0	2 0						1 0		1 0	
84	Queen's University Faculty of Medicine.....																		0 1			
85	University of Manitoba, Manitoba Medical College												1 3									
86	University of Toronto Faculty of Medicine.....																					
87	Western University Faculty of Medicine.....																					1 0
	Foreign Colleges																					
88	Miscellaneous Medical Colleges.....	2 0	2 0		2 1	3 0	1 0		1 0	2 1	1 0	10 15			1 0		1 0				1 0	
90	Undergraduates and Osteopaths.....																				5 0	
91	Totals by States.....	24	11	59	97	35	93	20	49	21	58	16	521	31	73	28	33	69	37	149	282	44
92	Totals — Examined—Passed.....	20	11	54	83	32	80	19	46	19	56	16	453	31	71	28	33	64	35	140	248	44
93	Totals — Examined—Failed.....	4	0	5	14	3	13	1	3	2	2	0	68	0	2	0	6	5	2	9	34	0
94	Percentage of Failures.....	16.7	0.0	8.5	14.4	8.6	14.0	5.0	6.1	9.5	3.4	0.0	1.3	0.0	2.7	0.0	18.2	7.2	5.4	6.0	12.0	0.0
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

H. = Homeopathic; E = Eclectic; N = Nondescript; P = Passed; F = Failed.

24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number	
Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions							
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
9 0													1 2		1 0		1 0		1 0								32	32	0	0.0	5	25	
																											26	22	4	15.4	5	26	
								3 0			1 0							6 0				1 0				2 1	88	87	1	1.1	12	27	
																											19	19	0	0.0	3	23	
2 0					2 0		5 1	2 0		6 0			1 0		1 0		1 0	1 0				8 0		1 0			124	119	5	4.0	21	29	
					2 0		5 4	6 0					3 0	1 1	4 0							3 0		4 0		3 1	116	106	10	8.6	21	30	
			1 0	1 0			2 0				1 0				1 0												15	14	1	7.2	5	31	
				1 0			7 2			1 0		1 0		3 0	1 0					3 0			2 0	3 0			12	6	6	46.2	2	32	
1 0																											148	145	3	2.1	23	33	
				1 0	1 0		7 7				1 0			4 1													19	7	12	63.2	2	34	
																											130	112	18	13.6	10	35	
							0 1		1 0																	1 0	30	29	1	3.3	4	36	
							6 1																	1 0			16	15	1	6.3	5	37	
							0 1																				10	9	1	10.0	3	38	
																						1 0					70	70	0	0.0	4	39	
												1 0						0 1					2 0			1 0	35	33	2	5.7	3	40	
5 1		2 0	1 0														19 1								1 1	9	8	1	11.1	7	41		
13 0							1 0											1 0								1 2	34	28	6	17.6	6	42	
10 0										1 0	2 0							1 0	3 0					3 0			58	58	0	0.0	9	43	
	1 1	19 0					1 0															1 0				1 0	27	26	1	3.7	7	45	
1 0		73 2																	1 0						2 0	87	85	2	2.3	8	46		
							15 0				1 0	1 0							1 0	3 0		1 0		1 0			16	16	0	0.0	2	47	
		1 0			3 0		133 16																				184	168	16	8.7	16	48	
							28 3						1 0														38	35	3	7.9	5	49	
					1 0		66 12					1 0															85	72	13	15.3	4	50	
							54 7																				64	57	7	10.9	2	51	
							52 35						1 0							1 0							97	62	35	36.1	8	52	
							23 9			1 0																	25	25	0	0.0	3	53	
1 0					5 0		88 15	3 0					2 0	1 0			1 0	1 0									123	108	15	12.2	12	54	
			1 0				45 0						1 0														48	48	0	0.0	4	55	
		4 0					0 1			25 2	1 0						1 0					0 2					37	32	5	13.5	7	56	
										17 0											1 0						19	19	0	0.0	3	57	
										9 0			1 1														13	12	1	7.7	4	58	
										23 0													1 0			1 0	29	29	0	0.0	7	59	
										41 0												1 0	1 0				44	44	0	0.0	4	60	
						1 0	1 1			1 9	14 0				1 1												23	21	2	8.7	8	61	
	1 1											15 0										3 0					20	19	1	5.0	3	62	
					2 0		0 1			1 0			13 1	1 0	3 1		1 0	1 0	5 0		3 0	4 0	4 0	2 0		4 0	22	20	2	9.1	7	63	
1 0		2 0	1 0		20 0		9 3	25 0		8 0		2 0	58 3	1 0	3 1		1 0	1 0								189	182	7	3.7	31	64		
1 0													16 2		1 0				3 0			1 0				27	23	4	14.8	7	65		
				1 0	10 0		5 3	11 0		1 9			60 7				1 0					1 0	4 0				130	119	11	8.5	21	63	
										2 0			23 1														27	26	1	3.7	3	67	
							2 0						5 1														9	8	1	11.1	3	68	
							1 0								10 0									1 0			15	15	0	0.0	6	69	
3 0								1 3		0 2							19 2	2 0				1 0	7 5				116	60	56	48.3	17	70	
							1 0		1 0						1 0		18 0					1 0					36	36	0	0.0	12	71	
							6 2			1 0					3 0		25 0										5	3	2	25.0	3	72	
																		18 1									37	35	2	5.9	7	73	
							0 1										1 0	18 0				1 0					22	20	2	9.1	4	74	
																	52 0										53	53	0	0.0	2	75	
							8 7			1 0										19 0			1 0				48	40	8	16.7	7	76	
							1 4	6 1		0 2	1 0				1 0				1 0		20 8		2 0				54	36	18	33.3	12	77	
					1 0		5 0										1 0		1 0		15 0						29	29	0	0.0	8	78	
									1 0			1 0												14 0				16	16	0	0.0	3	79
																											2	2	0	0.0	2	80	
																											4	2	2	50.0	2	81	
							3 5			1 0																	19	13	6	31.6	8	82	
																											1	0	1	100.0	1	83	
																											9	6	3	33.3	3	84	
							1 0																					0	0	0	0.0	0	85
																											4	3	1	25.0	2	86	
							2 1																					0	0	0	0.0	0	87
1 0																						2 0				0 4	12	6	6	50.0	6	88	
1 0	2 0	1 1			3 0	1 0	2 2	1 1	1 0	3 1	3 0	2 0	5 0		0 1										1 0	1 2	90	64	26	28.9	29	89	
																											0	0	0	0.0	0	90	
118	15	107	9	4	55	2	739	66	5	156	28	24	213	13	41	5	100	88	28	21	67	28	38	31	18	27	3904					91	
117	10	102	9	4	55	2	592	59	5	148	28	24	195	11	37	5	95	85	28	21	59	27	31	31	13	19		3495				92	
1	5	5	0	0	0	0	147	7	0	8	0	0	18	2	4																		

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1915-1919					Graduates of 1914 and Previous					Graduates of 1919			
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed
1	ALABAMA University of Alabama School of Medicine.....	10	9	1	10.0	5	6	6	0	0.0	4	4	3	1	25.0	3	3	3	0	0.0
2	ARKANSAS University of Arkansas Medical Department.....	17	15	2	11.8	5	12	10	2	16.7	4	5	5	0	0.0	2	6	6	0	0.0
3	CALIFORNIA College of Medical Evangelists.....	10	10	0	0.0	4	10	10	0	0.0	4	0	0	0	0.0	0	5	5	0	0.0
4	College of Physicians and Surgeons, Los Angeles.	31	26	5	16.1	4	31	26	5	16.1	4	0	0	0	0.0	0	24	23	1	4.2
5	College of Physicians and Surg., San Francisco...	11	5	6	54.5	2	11	5	6	54.5	2	0	0	0	0.0	0	3	2	1	33.3
6	Leland Stanford Junior Univ. School of Medicine.	18	18	0	0.0	2	18	18	0	0.0	2	0	0	0	0.0	0	15	15	0	0.0
7	Oakland College of Medicine and Surgery.....	2	2	0	0.0	1	2	2	0	0.0	1	0	0	0	0.0	0	2	2	0	0.0
8	University of California Medical School.....	3	3	0	0.0	3	1	1	0	0.0	1	2	2	0	0.0	2	0	0	0	0.0
9	COLORADO University of Colorado School of Medicine.....	21	20	1	4.8	3	18	18	0	0.0	1	3	2	1	33.3	0	18	18	0	0.0
10	CONNECTICUT Yale University School of Medicine.....	20	20	0	0.0	7	19	19	0	0.0	7	1	1	0	0.0	1	13	13	0	0.0
11	DISTRICT OF COLUMBIA Georgetown University School of Medicine.....	23	20	3	13.0	10	18	15	3	16.7	6	5	5	0	0.0	4	7	7	0	0.0
12	George Washington University Medical School....	33	33	0	0.0	14	27	27	0	0.0	9	6	6	0	0.0	6	9	9	0	0.0
13	Howard University School of Medicine.....	29	22	7	24.1	11	28	21	7	25.0	10	1	1	0	0.0	1	9	7	2	22.2
14	GEORGIA Emory University School of Medicine.....	50	42	8	16.0	10	38	35	3	7.7	6	12	7	5	41.7	8	27	27	0	0.0
15	University of Georgia Medical Department.....	13	11	2	15.4	4	12	11	1	8.3	4	1	0	1	100.0	1	8	8	0	0.0
16	ILLINOIS Chicago Medical School.....	62	34	28	45.2	7	62	34	28	45.2	7	0	0	0	0.0	0	10	3	7	70.0
17	Hahnemann Medical College and Hospital.....	26	26	0	0.0	8	22	22	0	0.0	5	4	4	0	0.0	4	20	20	0	0.0
18	Loyola University School of Medicine.....	153	124	29	19.0	30	133	114	19	14.4	23	20	10	10	50.0	11	72	69	3	4.2
19	Northwestern University Medical School.....	111	107	4	3.6	15	98	96	2	2.0	9	13	11	2	15.4	10	86	85	1	1.2
20	Rush Medical College (University of Chicago)....	183	180	3	1.6	20	168	168	0	0.0	13	15	12	3	20.0	7	145	145	0	0.0
21	University of Illinois College of Medicine.....	108	104	4	3.7	20	89	88	1	1.1	10	19	16	3	15.8	12	80	79	1	1.2
22	INDIANA Indiana University School of Medicine.....	32	32	0	0.0	4	32	32	0	0.0	4	0	0	0	0.0	0	31	31	0	0.0
23	IOWA State University of Iowa College of Medicine.....	47	47	0	0.0	4	45	45	0	0.0	2	2	2	0	0.0	2	43	43	0	0.0
24	State Univ. of Iowa Coll. of Homeo. Med.—H. ...	1	1	0	0.0	1	1	1	0	0.0	1	0	0	0	0.0	0	1	1	0	0.0
25	KANSAS University of Kansas School of Medicine.....	32	32	0	0.0	5	32	32	0	0.0	5	0	0	0	0.0	0	29	29	0	0.0
26	KENTUCKY University of Louisville Medical Department.....	46	30	16	34.8	14	26	22	4	15.4	5	20	8	12	60.0	11	17	15	2	11.8
27	LOUISIANA Tulane University of Louisiana School of Med. ...	95	94	1	1.1	16	88	87	1	1.1	12	7	7	0	0.0	6	74	74	0	0.0
28	MAINE Bowdoin Medical School.....	25	25	0	0.0	6	19	19	0	0.0	3	6	6	0	0.0	5	16	16	0	0.0
29	MARYLAND Johns Hopkins University Medical Department....	142	137	5	3.5	26	124	119	5	4.0	21	18	18	0	0.0	12	64	64	0	0.0
30	Univ. of Md. School of Med. & Coll. of P. & S.	122	112	10	8.2	22	116	106	10	8.6	21	6	6	0	0.0	6	39	39	0	0.0
31	MASSACHUSETTS Boston University School of Medicine.....	21	19	2	8.2	10	15	14	1	7.2	5	6	5	1	16.7	5	11	10	1	9.1
32	College of Physicians and Surgeons, Boston.....	18	8	10	55.6	5	12	6	6	46.2	2	6	2	4	66.7	5	3	3	0	0.0
33	Medical School of Harvard University.....	164	159	5	3.0	25	148	145	3	2.1	23	16	14	2	12.5	7	88	88	0	0.0
34	Middlesex College of Medicine and Surgery.—N. ...	19	7	12	63.2	2	19	7	12	63.2	2	0	0	0	0.0	0	11	4	7	63.6
35	Tufts College Medical School.....	139	120	19	13.7	13	130	112	18	13.6	10	9	8	1	11.1	6	95	87	8	8.4
36	MICHIGAN Detroit College of Medicine and Surgery.....	35	33	2	5.7	7	30	29	1	3.3	4	5	4	1	20.0	4	28	27	1	3.6
37	University of Michigan Medical School.....	25	24	1	4.2	9	16	15	1	6.3	5	9	9	0	0.0	7	7	7	0	0.0
38	University of Michigan Homeo. Med. School.—H.	13	12	1	7.7	5	10	9	1	10.0	3	3	3	0	0.0	3	9	9	0	0.0
39	MINNESOTA University of Minnesota Medical School.....	73	73	0	0.0	7	70	70	0	0.0	4	3	3	0	0.0	3	64	64	0	0.0
40	MISSOURI Kansas City College of Medicine and Surgery.—N.	35	33	2	5.7	3	35	33	2	5.7	3	0	0	0	0.0	0	32	30	2	6.2
41	Kansas City Univ. of Phys. and Surgs.—N.	9	8	1	11.1	7	9	8	1	11.1	7	0	0	0	0.0	0	9	8	1	11.1
42	St. Louis College of Physicians and Surgeons....	38	30	8	21.1	10	34	28	6	17.6	6	4	2	2	50.0	4	20	16	4	20.0
43	St. Louis University School of Medicine.....	65	63	2	3.1	13	58	58	0	0.0	9	7	5	2	28.6	6	46	46	0	0.0
44	Washington University Medical School.....	66	64	2	3.0	17	57	57	0	0.0	12	9	7	2	22.2	7	51	51	0	0.0
45	NEBRASKA John A. Creighton Medical College.....	34	32	2	5.9	14	27	26	1	3.7	7	7	6	1	14.3	7	21	21	0	0.0
46	University of Nebraska College of Medicine.....	87	85	2	2.3	8	87	85	2	2.3	8	0	0	0	0.0	0	82	80	2	2.4
47	NEW YORK Albany Medical College.....	27	23	4	14.8	7	16	16	0	0.0	2	11	7	4	36.3	6	12	12	0	0.0
48	Columbia University College of Phys. and Surgs.	198	182	16	8.1	23	184	168	16	8.7	16	14	14	0	0.0	10	121	111	10	8.3
49	Cornell University Medical School.....	41	38	3	7.3	7	38	35	3	7.9	5	3	3	0	0.0	3	22	20	2	9.1
50	Fordham University School of Medicine.....	90	75	15	16.7	4	85	72	13	15.3	4	5	3	2	40.0	1	63	59	4	6.3
51	Long Island College Hospital.....	68	60	8	11.8	6	64	57	7	10.9	2	4	3	1	25.0	4	48	43	5	10.4
52	N. Y. Homeo. Med. Coll. and Flower Hosp.—H. ...	104	69	35	33.7	10	97	62	35	36.1	8	7	7	0	0.0	5	27	23	4	14.8
53	Syracuse University College of Medicine.....	26	26	0	0.0	4	25	25	0	0.0	3	1	1	0	0.0	1	23	23	0	0.0
54	University and Bellevue Hospital Med. Coll.	127	111	16	12.6	14	123	108	15	12.2	12	4	3	1	25.0	4	81	72	9	11.1
55	University of Buffalo Medical Department.....	53	53	0	0.0	6	48	48	0	0.0	4	5	5	0	0.0	4	38	38	0	0.0
56	OHIO Eclectic Medical College.—E.	41	35	6	14.6	10	37	32	5	13.5	7	4	3	1	25.0	4	31	31	0	0.0
57	Ohio State University College of Medicine.....	19	19	0	0.0	3	19	19	0	0.0	3	0	0	0	0.0	0	16	16	0	0.0
58	Ohio State University Coll. of Homeo. Med.—H. ...	13	12	1	7.7	4	13	12	1	7.7	4	0	0	0	0.0	0	10	10	0	0.0
59	University of Cincinnati College of Medicine....	29	29	0	0.0	7	29	29	0	0.0	7	0	0	0	0.0	0	27	27	0	0.0
60	Western Reserve University School of Medicine...	47	46	1	2.1	6	44	44	0	0.0	4	3	2	1	33.3	3	42	42	0	0.0
61	OKLAHOMA University of Oklahoma School of Medicine.....	23	21	2	8.7	8	23	21	2	8.7	8	0	0	0	0.0	0	13	13	0	0.0
62	OREGON University of Oregon Medical School.....	23	22	1	4.4	4	20	19	1	5.0	3	3	3	0	0.0	3	8	7	1	12.5
63	PENNSYLVANIA Hahnemann Medical College and Hospital.—H. ...	25	23	2	8.0	9	22	20	2	9.1	7	3	3	0	0.0	3	4	4	0	0.0
64	Jefferson Medical College	213	202	11	5.2	35	189	182	7	3.7	31	24	20	4	16.7	15	53	53	0	0.0
65	Temple University Department of Medicine.....	27	23	4	14.8	6	27	23	4	14.8	7	0	0	0	0.0	0	2	2	0	0.0
66	University of Pennsylvania School of Medicine....	142	130	12	8.5	25	130	119	11	8.5	21	12	11	1	8.3	8	19	19	0	0.0
67	University of Pittsburgh School of Medicine.....	30	28	2	6.7	5	27	26	1	3.7	3	3	2	1	33.3	2	21	21	0	0.0
68	Woman's Medical College of Pennsylvania.....	15	14	1	6.7	6	9	8	1	11.1	3	6	6	0	0.0	4	2	2	0	0.0
69	SOUTH CAROLINA Medical College of the State of South Carolina..	24	20	4	16.7	29	15	15	0	0.0	6	9	5	4	44.4	6	13	13	0	0.0

H. = Homeopathic; E. = Eclectic; N. =

NAME OF COLLEGE	Graduates of All Years					Graduates of 1915-1919					Graduates of 1914 and Previous					Graduates of 1919					Marginal Number																					
	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States																						
TENNESSEE																																										
y Medical College.....	131	65	66	50.4	21	116	60	56	48.3	17	15	5	10	66.7	7	55	40	15	27.3	10	70																					
ity of Tennessee College of Medlelne.....	41	38	3	7.3	14	36	36	0	0.0	12	5	2	3	50.0	5	26	26	0	0.0	4	71																					
of West Tennessee Medical Department.....	7	3	4	57.1	3	5	3	2	25.0	3	2	0	2	100.0	2	4	3	1	25.0	2	72																					
bilt University School of Medlelne.....	46	42	4	8.7	13	37	35	2	5.9	7	9	7	2	22.2	7	28	27	1	3.6	4	73																					
TEXAS																																										
Unlversity College of Medicine.....	22	20	2	9.1	4	22	20	2	9.1	4	0	0	0	0.0	0	21	20	1	4.8	3	74																					
ity of Texas Department of Medlelne.....	53	53	0	0.0	2	53	53	0	0.0	2	0	0	0	0.0	0	49	49	0	0.0	1	75																					
VERMONT																																										
ity of Vermont College of Medicine.....	62	50	12	19.4	9	48	40	8	16.7	7	14	10	4	28.6	5	24	23	1	4.2	5	76																					
VIRGINIA																																										
College of Virginia.....	60	38	22	35.6	14	54	36	18	33.3	12	6	2	4	66.7	5	21	20	1	4.8	4	77																					
ity of Virginia Department of Medlelne...	32	32	0	0.0	9	29	29	0	0.0	8	3	3	0	0.0	3	18	18	0	0.0	6	78																					
WISCONSIN																																										
tte University School of Medlelne.....	16	16	0	0.0	3	16	16	0	0.0	3	0	0	0	0.0	0	16	16	0	0.0	3	79																					
CANADA																																										
sie University Faculty of Medlelne.....	3	3	0	0.0	3	2	2	0	0.0	2	1	1	0	0.0	1	0	0	0	0.0	0	80																					
University Faculty of Medlelne.....	6	2	4	66.7	3	4	2	2	50.0	2	2	0	2	100.0	2	1	1	0	0.0	1	81																					
University Faculty of Medlelne.....	26	20	6	23.1	13	19	13	6	31.6	8	7	7	0	0.0	6	4	4	0	0.0	4	82																					
al School of Medlelne and Surgery.....	2	0	2	100.0	2	1	0	1	100.0	1	1	0	1	100.0	1	1	0	1	100.0	1	83																					
s University Faculty of Medlelne.....	16	11	5	31.3	6	9	6	3	33.3	3	7	5	2	28.6	4	3	2	1	33.3	2	84																					
ity of Manitoba, Manitoba Medical College	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	85																					
ity of Toronto Faculty of Medlelne.....	11	8	3	27.3	6	4	3	1	25.0	2	7	5	2	28.6	5	0	0	0	0.0	0	86																					
n University Faculty of Medlelne.....	7	5	2	28.6	4	0	0	0	0.0	0	7	5	2	28.6	4	0	0	0	0.0	0	87																					
n Colleges																						67	37	30	44.8	17	12	6	6	46.2	6	55	31	24	44.4	17	0	0	0	0.0	0	88
aneous Medical Colleges.....	340	210	130	38.2	44	90	64	26	28.9	29	250	146	104	41.4	39	2	2	0	0.0	2	89																					
graduates and Osteopaths.....	66	35	31	47.0	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	90						
ls by States.....	4736	4060	676	14.3	....	3904	3495	409	10.5	....	766	530	236	30.8	....	2422	2321	101	4.2	....	91																	

(CONTINUED FROM PAGE 1083)

practical examinations by which they may show their skill in diagnosis and treatment, for a wider provision for reciprocity and for special percentage allowances for years of active practice. The total number of these candidates is diminishing each year as state licensing boards extend the provision for reciprocity, or for the endorsement, without further examination of licenses granted by other states where a physician's qualifications are otherwise satisfactory. As a rule, the states which do not have reciprocal relations with other states (Florida, Massachusetts, Montana and Oregon, see Table G) examined the largest numbers of old practitioners.

GRADUATES OF 1919 EXAMINED DURING 1919

Table C also gives the results for the graduates of 1919 who were examined during the year by the state boards. It shows that 2,422, or 51.1 per cent., of all candidates examined during the year, graduated in 1919, including nine who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated 2,656 students last year (including 252 for whom diplomas were withheld until a year's internship in hospital has been completed); therefore, 90.8 per cent. of all graduates in 1919 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which accounts for some of the remaining 9.2 per cent. Of the 1919 graduates examined, 1, or 4.2 per cent., failed, as compared with 5.5 per cent. in 1918, 5.7 per cent. in 1917; 7.4 per cent. in 1916 and 7.5 per cent. in 1915. A steady improvement in recent years in the qualifications of medical graduates is apparent from these figures.

NONRECOGNITION OF MEDICAL COLLEGES

Table D shows for each college, from official reports, the states in which its diplomas are not given unqualified recognition. Nonrecognition is expressed by different terms in different states. Some boards list colleges as "not in good standing;" some give them as "not reputable;" in New York full recognition is given only to colleges which are "registered," and in Michigan colleges are divided into groups, only those of Group 1 having full recognition. This table also shows the latest rating given to each college by the Council on Medical Education.

From the point of view of the prospective student who may be selecting a medical college, the facts in Table D are of extreme importance. There are 59 medical colleges now having complete recognition in all states. There are others for which the few instances of nonrecognition are due to certain technicalities in state board requirements. If the student gets his medical training in one of the remaining 18 colleges, he will find on graduation that his diploma is not recognized in from 7 to 42 states!

Without the information published in Table D, these state board statistics would be not merely incomplete—they would be actually misleading. For example, 35 graduates of the Kansas City (Mo.) College of Medicine and Surgery were examined in 1919. Of these, 33 (94 per cent.) were examined by the Arkansas Board of Eclectic Medical Examiners and all but one passed. The statistics show only 5.7 per cent of failures, which would make this college appear to belong among the better grade medical schools of the country. Quite different the picture, however, when the facts are known, as set forth in Table D, that this college is reported as not recognized in its home state and in 36 other states, and that for its very existence it depends on the acceptance of its graduates by the Eclectic Board of Arkansas! The figures obtained for the last several years indicate that neither the Kansas City College of Medicine and Surgery nor the Arkansas Eclectic Board could exist without the other.

During the seven years this table has been published, the percentages of fully recognized colleges were, respectively, 29.0, 32.3, 43.7, 65.6, 57.3, 61.3 and 67.8. This shows a decided improvement in the medical colleges. Forty-two state licensing boards, to some extent at least, are now utilizing their legal power to refuse recognition to medical colleges which do not meet the requirements in the respective states. In the other eight states, however (including Alaska and the District of Columbia), this table indicates either that the practice acts do not give the boards authority to enforce a requirement of reasonable standards, or else that the boards are not exercising that authority. It is evident that if the graduates of low standard medical colleges are not eligible for license in the majority of states, they will flock to the other eight which still grant them recognition. These eight states—Alaska, Arizona, Massachusetts, Nebraska, Nevada, Oregon, Utah and the District of Columbia, therefore, will

(CONTINUED-ON PAGE 1094)

TABLE D.—NONRECOGNITION OF MEDICAL COLLEGES

This table, based on official reports, shows in what states diplomas granted by certain medical colleges are not recognized as an acceptable qualification for the license to practice medicine.

Colleges marked (x) have been reported as not recognized by the states in the columns of which the letter appears

[illegible]

[illegible]

* Eleven medical colleges give only the first two years of the medical course.

1. Formerly the Chicago Hospital College of Medicine. Has advertised also under the name of "Fort Dearborn Hospital School."
2. Suspended medical teaching in 1918, but retains a nominal existence until 1921 in order to grant degrees to the three remaining classes which are completing their medical instruction elsewhere.
3. This college claims to be an eclectic college, but is reported as not recognized by the National Eclectic Medical Association. It is an offshoot of the Eclectic Medical University an Institution

which during its existence was rated in Class C. The new college has refused inspections. It is reported as not recognized by the Missouri State Board of Health.

4. Formerly the Central College of Osteopathy; in 1917 became the Central College Medical Department; present title in 1918. Reported not recognized as a medical school by the Missouri State Board of Health.

(x) According to official reports the licensing boards of the states thus indicated do not grant full recognition to, or have taken action refusing to admit to their examinations graduates of, the college marked by this letter—x

(CONTINUED FROM PAGE 1091)

remain the dumping ground for the output of low grade medical colleges, until the licensing boards obtain the needed legal authority, and until they take action in the matter. Arkansas, Florida and Connecticut are also registering through their separate sectarian licensing boards graduates of medical colleges not recognized in the majority of other states. It is reported that no examinations were held during the year by the Arkansas Homeopathic Board, and from the Florida Eclectic Board no report was received.

TABLE 1.—RECOGNITION OF MEDICAL COLLEGES (BASED ON TABLE D)

	Number of Colleges
Recognized by all state boards.....	59
Not recognized by 1 or 2 state boards.....	10
Not recognized by 7 to 17 state boards.....	9
Not recognized by 37 to 42 state boards.....	9
Total.....	87

STUDY OF TOTALS AND PERCENTAGES

A study of totals and percentages as compared with previous years is of interest. The number examined in 1919 was 1,099 more than in 1918; six more than in 1917; 114 less than in 1916, and 1,577 less than in 1915. Statistics regarding physicians licensed in the various states by reciprocity and by other methods are given in Tables G, H, I, J and K. By all methods—examination, reciprocity, under exemption, etc.

—6,584 physicians were licensed during 1919, or 2,399 more than in 1918, 1,161 more than in 1917, 1,712 more than in

TABLE 2.—RESULTS FOR THIS AND PREVIOUS YEARS

Year	All Candidates Examined				Recent Graduates		Older Graduates		Non-descript		Registered without Written Examination	Total Registered
	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed		
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6725
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	.....	.....	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	.....	.....	1362	5422
1918	3637	3154	483	13.3	2984	9.3	479	30.5	.....	.....	1031	4185
1919	4736	4060	676	14.3	3904	10.5	766	30.8	66	47.0	2521	6584

1916, but 1,281 less than in 1906, when 7,865 physicians were licensed.

Other deductions from the larger tables, presented in Tables E and F, are worthy of special study.

TABLE E.—COLLEGES HAVING FORTY OR MORE EXAMINED

COLLEGE	Graduates of All Years					Graduates of 1915-1919					Graduates of 1914 and Previous					Graduates of 1919					Marginal No., Table A
	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	
Jefferson Medical College.....	213	202	11	5.2	35	189	182	7	3.7	31	24	20	4	16.7	15	53	53	0	0.0	18	64
Columbia University College of Phys. and Surgs.	198	182	16	8.1	23	184	168	16	8.7	16	14	14	0	0.0	10	121	111	10	8.3	6	48
Rush Medical College (University of Chicago)...	183	180	3	1.6	20	168	168	0	0.0	13	15	12	3	20.0	7	145	145	0	0.0	13	20
Medical School of Harvard University.....	164	159	5	3.0	25	148	145	3	2.1	23	16	14	2	12.5	7	88	88	0	0.0	11	33
Loyola University School of Medicine.....	153	124	29	19.0	30	133	114	19	14.4	23	20	10	10	50.0	11	72	69	3	4.2	9	18
Johns Hopkins University Medical Department...	142	137	5	3.5	26	124	119	5	4.0	21	18	18	0	0.0	12	64	64	0	0.0	13	29
University of Pennsylvania School of Medicine..	142	130	12	8.5	25	130	119	11	8.5	21	12	11	1	8.3	8	19	19	0	0.0	10	66
Tufts College Medical School.....	139	120	19	13.7	13	130	112	18	13.6	10	9	8	1	11.1	6	95	87	8	8.4	8	35
Meharry Medical College.....	131	65	66	50.4	21	116	60	56	48.3	17	15	5	10	66.7	7	55	40	15	27.3	10	70
University and Bellevue Hospital Med. College...	127	111	16	12.6	14	123	108	15	12.2	12	4	3	1	25.0	4	81	72	9	11.1	4	54
Univ. of Md. Sch. of Med. and Coll. of P. & S.	122	112	10	8.2	22	116	106	10	8.6	21	6	6	0	0.0	6	39	39	0	0.0	9	30
Northwestern University Medical School.....	111	107	4	3.6	15	98	96	2	2.0	9	13	11	2	15.4	10	86	85	1	1.2	3	19
University of Illinois College of Medicine.....	108	104	4	3.7	20	89	88	1	1.1	10	19	16	3	15.8	12	80	79	1	1.2	7	21
New York Homeo. Med. Coll. and Flower Hosp.	104	69	35	33.7	10	97	62	35	36.1	8	7	7	0	0.0	5	27	23	4	14.8	4	52
Tulane Univ. of Louisiana School of Medicine...	95	94	1	1.1	16	88	87	1	1.1	12	7	7	0	0.0	6	74	74	0	0.0	9	27
Fordham University School of Medicine.....	90	75	15	16.7	4	85	72	13	15.3	4	5	3	2	40.0	1	63	59	4	6.3	2	50
University of Nebraska College of Medicine.....	87	85	2	2.3	8	87	85	2	2.3	8	0	0	0	0.0	0	82	80	2	2.4	6	46
University of Minnesota Medical School.....	73	73	0	0.0	7	70	70	0	0.0	4	3	3	0	0.0	3	64	64	0	0.0	3	39
Long Island College Hospital.....	68	60	8	11.8	6	64	57	7	10.9	2	4	3	1	25.0	4	48	43	5	10.4	2	51
Washington University Medical School.....	66	64	2	3.0	17	57	57	0	0.0	12	9	7	2	22.2	7	51	51	0	0.0	8	44
St. Louis University School of Medicine.....	65	63	2	3.1	13	58	58	0	0.0	9	7	5	2	28.6	6	46	46	0	0.0	5	43
Chicago Medical School.....	62	34	28	45.2	7	62	34	28	45.2	7	0	0	0	0.0	0	10	3	7	70.0	2	16
University of Vermont College of Medicine.....	62	50	12	19.4	9	48	40	8	16.7	7	14	10	4	28.6	5	24	23	1	4.2	5	76
Medical College of Virginia.....	59	38	21	35.6	14	53	35	18	34.0	12	6	2	4	66.7	5	21	20	1	4.8	4	77
University of Texas Department of Medicine.....	53	53	0	0.0	2	53	53	0	0.0	2	0	0	0	0.0	0	49	49	0	0.0	1	75
University of Buffalo Medical Department.....	53	53	0	0.0	6	48	48	0	0.0	4	5	5	0	0.0	4	38	38	0	0.0	2	55
Emory University School of Medicine.....	50	42	8	16.0	10	38	35	3	7.7	6	12	7	5	41.7	8	27	27	0	0.0	3	14
State University of Iowa College of Medicine...	47	47	0	0.0	4	45	45	0	0.0	2	2	2	0	0.0	2	43	43	0	0.0	1	23
Western Reserve University School of Medicine..	47	46	1	2.1	6	44	44	0	0.0	4	3	2	1	33.3	3	42	42	0	0.0	2	60
University of Louisville Medical Department....	46	30	16	34.8	14	26	22	4	15.4	5	20	8	12	60.0	11	17	15	2	11.8	4	26
Vanderbilt University School of Medicine.....	46	42	4	8.7	13	37	35	2	5.9	7	9	7	2	22.2	7	28	27	1	3.6	4	73
Cornell University Medical College.....	41	38	3	7.3	7	38	35	3	7.9	5	3	3	0	0.0	3	22	20	2	9.1	2	49
Eclectic Medical College.....	41	35	6	14.6	10	37	32	5	13.5	7	4	3	1	25.0	4	31	31	0	0.0	4	56
University of Tennessee College of Medicine.....	41	38	3	7.3	13	36	36	0	0.0	12	5	2	3	50.0	5	26	26	0	0.0	4	71
Totals.....	3229	2862	367	11.4	....	2919	2627	292	10.0	....	310	234	76	24.5	....	831	755	76	9.1	....	....

This table is interesting, since it gives data relating to the 34 larger medical colleges arranged according to the number of graduates examined. This allows of comparison between colleges having classes of nearly equal size. Jefferson Medical College had the largest number of graduates examined in 1919. The position was held by the Chicago College of Medicine and Surgery in 1913 to 1918, inclusive, by the University of Illinois College of Medicine in 1906, 1907 and 1912; in 1908 by Jefferson Medical College, and in 1909, 1910 and 1911 by the University of Louisville Medical Department. The first place from the standpoint of the number examined, however, does not always mean first place from the standpoint of scholarship. Note the percentages of failures. The five highest failure percentages are for Meharry Medical College, 50.4; Chicago Medical School (formerly Chicago Hospital College of Medicine), 45.2; Medical College of Virginia, 35.6; University of Louisville

Medical Department, 34.8, and the New York Homeopathic Medical College and Flower Hospital, 33.7.

Of the 14 colleges having 100 or more examined, eight have failure percentages of less than 10, while six stand out prominently with large failure percentages. Of the 20 colleges having between 40 and 100 graduates examined, 12 had failure percentages of less than 10, 15 had failure percentages between 10 and 20, and 3 had failure percentages of over 20 per cent.

The average percentage of failures for these larger colleges for graduates of 1914 and previous years was 24.5; for graduates of 1915 to 1919, inclusive (recent graduates), 10.0; for graduates of 1919, 9.1 and for graduates of all years, 11.4. Of the 4,258 graduates of the 83 colleges in the United States which had graduates examined by state boards in 1919, these larger (41.5 per cent. of all) schools furnished 3,229 or 75.6 per cent., of the graduates examined.

STUDY OF LARGER COLLEGES

Table E is also based on the three large tables, and gives the results of state board examinations as they affect the thirty-four largest medical colleges. Although these colleges represent 41.5 per cent. of the eighty-two medical colleges in the United States having graduates examined, in 1919 they furnished 75.6 per cent. of all candidates for license coming from medical schools of the United States. This table shows, also, that the graduating of large classes by a

TABLE F.—PHYSICIANS EXAMINED BY STATE BOARDS, 1915 TO 1919, INCLUSIVE

	1915		1916		1917		1918		1919		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama.....	79	45	55	36	45	21	20	9	23	12	345	222	123	35.7
Arizona.....	10	7	33	9	32	5	33	8	48	5	190	156	34	17.9
Arkansas.....	75	7	67	11	80	12	68	4	70	7	401	360	41	10.2
California.....	137	39	146	8	235	94	203	71	109	56	1098	830	268	24.4
Colorado.....	19	5	25	8	38	2	44	10	57	16	224	183	41	18.3
Connecticut.....	46	17	41	20	72	22	39	14	94	24	389	292	97	24.9
Delaware.....	13	0	13	2	14	0	10	1	19	1	73	69	4	5.5
Dist. of Columbia....	51	13	33	14	26	7	37	4	51	6	242	198	44	18.2
Florida.....	83	25	68	18	44	12	21	8	64	17	360	280	80	22.2
Georgia.....	176	17	133	7	100	2	48	2	60	5	550	517	33	6.0
Idaho.....	23	1	29	0	20	2	16	0	31	0	122	119	3	2.5
Illinois.....	439	64	517	91	487	101	367	57	475	96	2694	2285	409	15.2
Indiana.....	49	3	49	4	39	2	43	6	34	0	229	214	15	6.6
Iowa.....	85	4	82	2	45	1	50	1	78	4	352	340	12	3.4
Kansas.....	29	4	32	1	24	3	20	0	32	3	148	137	11	7.4
Kentucky.....	83	7	66	10	68	16	40	2	31	7	330	288	42	12.7
Louisiana.....	69	21	68	10	44	13	50	6	80	6	367	311	56	15.2
Maine.....	63	6	25	2	33	1	27	3	43	3	206	191	15	7.3
Maryland.....	111	29	96	30	82	11	54	5	145	11	574	488	86	15.0
Massachusetts.....	238	65	166	40	219	42	228	18	305	41	1362	1156	206	15.1
Michigan.....	120	6	135	5	125	3	97	4	52	0	547	529	18	3.3
Minnesota.....	59	6	56	1	60	0	68	0	98	0	348	341	7	2.0
Mississippi.....	84	15	48	29	23	5	12	0	18	3	237	185	52	21.9
Missouri.....	200	22	161	13	166	12	143	21	136	1	875	806	69	7.9
Montana.....	48	16	38	14	43	24	20	7	26	12	248	175	73	29.4
Nebraska.....	70	6	52	0	63	0	44	1	102	5	343	331	12	3.5
Nevada.....	12	1	10	1	8	0	5	1	13	0	51	48	3	5.9
New Hampshire.....	6	1	10	0	6	0	4	2	5	0	34	31	3	8.8
New Jersey.....	71	8	72	10	26	6	16	1	61	1	272	246	26	9.6
New Mexico.....	5	0	5	1	...	...	...	2	0	2	15	14	1	6.7
New York.....	618	165	523	159	600	146	456	117	627	189	3600	2824	776	21.6
North Carolina.....	106	30	96	18	65	10	49	3	59	9	445	375	70	15.7
North Dakota.....	10	5	15	5	6	1	6	2	6	4	61	43	18	29.5
Ohio.....	149	3	182	5	185	4	142	6	156	8	840	814	26	3.1
Oklahoma.....	50	13	52	8	52	2	24	0	34	0	235	212	23	9.8
Oregon.....	56	30	38	17	37	7	35	7	39	3	269	205	64	23.8
Pennsylvania.....	208	24	233	33	241	12	168	22	213	28	1182	1033	149	12.6
Rhode Island.....	26	6	27	7	22	1	13	4	20	5	131	108	23	17.6
South Carolina.....	53	36	53	24	37	29	17	12	45	14	320	205	115	35.9
South Dakota.....	25	0	18	2	18	1	14	0	20	1	99	95	4	4.0
Tennessee.....	101	4	128	20	167	10	103	19	96	7	655	595	60	9.2
Texas.....	136	11	90	13	119	5	82	2	89	3	550	516	34	6.2
Utah.....	21	1	15	0	11	0	10	1	29	0	88	86	2	2.3
Vermont.....	36	0	17	0	13	1	24	0	22	0	113	112	1	0.9
Virginia.....	100	8	99	8	64	4	50	6	65	12	416	378	38	9.1
Washington.....	75	14	48	4	57	7	59	7	63	10	344	302	42	12.2
West Virginia.....	70	7	58	2	45	7	16	4	35	15	259	224	35	13.5
Wisconsin.....	74	10	72	4	40	3	34	2	34	0	273	254	19	7.0
Wyoming.....	13	0	17	0	13	0	22	2	19	8	94	84	10	10.6
U. S. Territories and Possessions.....	6	0	11	1	2	0	1	0	27	18	66	47	19	28.8
Totals.....	5,313		4,850		4,730		3,637		4,736			23,266		
Registered.....	4,486		4,123		4,061		3,154		4,060			19,884		
Rejected.....	827		727		669		483		676			3,382		
Per Cent. Rejected...	15.6		15.0		14.1		13.2		14.3			14.5		

This table gives the number of candidates registered and rejected on examination by each state during each of the last five years. The last four columns give the totals for the five years and the percentage rejected by each state. Compare this table with Table H.

Four states registered over 1,000 candidates by examination in the five years, these being New York, Illinois, Massachusetts and Pennsylvania. Over 2,000 were registered in only two states, New York with 2,824 and Illinois with 2,285. Altogether 19,884 physicians were registered by examination in five years, an average of 3,977 each year.

The five highest percentages of rejections for the five years were in South Carolina, 35.9; Alabama, 35.7; North Dakota, 29.5; Montana, 29.4; Connecticut, 24.9, and California, 24.4. Until 1916 Massachusetts, Oregon and Tennessee included nongraduates among those examined, and for that reason would be expected to have higher percentages rejected. On the other hand, in several states the boards refused to recognize certain colleges and eliminated many candidates prior to the examination by a careful scrutiny of credentials, and as a result the percentages of failures at the examinations are lower than otherwise would be the case. For example, Ohio rejected only 3.1 per cent. of those who took their examinations, but graduates of eleven medical colleges are not eligible for admission to the examinations. This table therefore should be studied in connection with Table D.

The lowest failure percentages were in Vermont, 0.9; Minnesota, 2.0; Washington, 2.3; Idaho, 2.5; Ohio, 3.1, and Michigan, 3.3.

medical college does not prove excellence of teaching, since five of these have high failure percentages. The larger the college from the standpoint of students and graduates, the more serious is inferior teaching ability, as indicated by a high failure percentage. In fairness both to medical students and to the public, such schools should strengthen their teaching facilities or reduce the size of their classes.

TABLE G.—REGISTRATION BY STATE BOARDS DURING THE YEAR 1919

STATES	By Examination			By Reciprocity	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1915-1919	Graduates, 1914 and Previous	Nongraduates and graduates of Nondescript Colleges			
Alabama.....	20	3	....	32	....	55
Arizona.....	11	36	1	....	....	48
Arkansas.....	54	16	....	60	....	130
California.....	83	13	13	336	....	445
Colorado.....	32	9	16	84	....	141
Connecticut.....	80	14	....	11	2	107
Delaware.....	19	0	....	9	....	28
District of Columbia.....	46	5	....	15	....	66
Florida.....	19	45	....	....	....	64
Georgia.....	56	4	....	51	....	111
Idaho.....	16	15	....	18	....	49
Illinois.....	453	22	....	93	....	568
Indiana.....	31	3	....	31	....	65
Iowa.....	71	7	....	71	....	149
Kansas.....	28	4	....	57	....	89
Kentucky.....	27	4	....	36	1	68
Louisiana.....	64	16	....	18	....	98
Maine.....	35	8	....	8	....	51
Maryland.....	140	5	....	33	1	179
Massachusetts.....	248	57	....	....	....	305
Michigan.....	45	7	....	130	....	182
Minnesota.....	89	9	....	81	....	179
Mississippi.....	16	2	....	28	....	46
Missouri.....	117	19	....	96	....	232
Montana.....	10	16	....	....	....	26
Nebraska.....	102	0	....	65	....	167
Nevada.....	9	4	....	10	....	23
New Hampshire.....	4	0	1	13	....	18
New Jersey.....	55	6	....	202	....	263
New Mexico.....	2	0	....	3	45	50
New York.....	592	35	....	69	15	711
North Carolina.....	59	0	....	23	....	82
North Dakota.....	5	1	....	11	1	18
Ohio.....	148	8	....	128	....	284
Oklahoma.....	28	6	....	82	....	116
Oregon.....	24	15	....	....	....	39
Pennsylvania.....	195	18	....	56	....	269
Rhode Island.....	11	9	....	....	....	20
South Carolina.....	37	8	....	....	....	45
South Dakota.....	5	15	....	....	....	20
Tennessee.....	95	0	1	27	....	123
Texas.....	35	3	1	186	....	275
Utah.....	28	1	....	25	....	54
Vermont.....	21	1	....	2	....	24
Virginia.....	59	6	....	62	....	127
Washington.....	27	34	2	42	....	105
West Virginia.....	31	4	....	41	....	76
Wisconsin.....	31	3	....	98	....	132
Wyoming.....	13	6	....	16	....	35
U. S. Territories and Possessions.....	19	8	....	....	....	27
Totals.....	3,495	530	35	2,459	65	6,584

This table shows the total number registered during 1919 in each state by the various methods. The first three columns show those registered by examination: the first column showing the recent graduates registered, the second column the old practitioners (graduates of 1914 and previous years) and the third column shows a few nongraduates, graduates of nondescript colleges and some osteopaths who were given licenses as physicians and surgeons. The fourth column shows the number licensed through reciprocity, by endorsement of other state licenses and by certificates of the National Board of Medical Examiners. The fifth column shows those licensed under various exemption clauses in the practice acts, such as because of national fame or by recognition of diplomas (New Mexico). California licensed as physicians 13 out of 28 graduates of osteopathic colleges, and Colorado so licensed 14 out of 25 osteopaths.

It is interesting to note that states like Arizona, Florida, Massachusetts and New York, which have no reciprocal relations or which reciprocate with only a few other states, have registered by examination the largest numbers of old practitioners. The large registration through reciprocity in California is due to the liberal provision in the recent medical practice act providing for the recognition of licenses granted in other states. No reciprocal registrations were reported for eight states.

The last column shows the total number of physicians registered by all methods in each state during the year. Four states registered over 300 each, these being New York, 711; Illinois, 568; California, 445, and Massachusetts, 305. Thirteen states registered less than 50 each. The largest registration was in New York, and the smallest number was 18 each in New Hampshire and North Dakota. The total registered by all methods was 6,584, an increase of 2,399 above the total registered in 1918. Of this increase, 1,487, or 59.5 per cent., were through reciprocal registration.

TOTALS EXAMINED IN FIVE YEARS

Table F shows the number registered and the number rejected in each state for each of the past five years. A comparison of this table with the statistics in the last educational number of THE JOURNAL (Aug. 16, 1919, p. 513, Table 12) shows—what would be expected—that the states having the several largest numbers of medical graduates, examined the largest numbers of physicians. New York leads, having examined 3,600 candidates in five years, followed by Illinois with 2,694. The five states having the next

TABLE H.—REGISTRATIONS BY STATE BOARDS FOR FIVE YEARS

STATE	1915	1916	1917	1918	1919	Totals
Alabama.....	79	55	48	26	55	263
Arizona.....	13	33	32	33	48	159
Arkansas.....	98	95	111	81	130	515
California.....	312	302	440	342	445	1,841
Colorado.....	82	86	100	97	141	506
Connecticut.....	55	58	84	46	107	350
Delaware.....	21	19	17	24	28	109
Dist. of Columbia...	53	44	33	41	66	237
Florida.....	83	68	44	21	64	280
Georgia.....	199	152	122	72	111	656
Idaho.....	26	33	25	31	49	164
Illinois.....	485	556	520	392	568	2,521
Indiana.....	91	77	79	58	65	370
Iowa.....	150	103	91	79	149	572
Kansas.....	83	95	67	56	89	390
Kentucky.....	103	75	76	54	68	376
Louisiana.....	77	77	51	57	98	360
Maine.....	69	31	42	32	51	225
Maryland.....	142	120	100	73	179	614
Massachusetts.....	238	106	219	228	305	1,156
Michigan.....	186	224	198	145	182	935
Minnesota.....	104	101	103	97	179	584
Mississippi.....	87	58	37	15	46	243
Missouri.....	263	212	206	186	232	1,099
Montana.....	48	39	43	20	26	176
Nebraska.....	111	70	99	77	167	524
Nevada.....	23	29	24	16	22	114
New Hampshire.....	26	25	18	7	18	94
New Jersey.....	157	163	122	101	263	806
New Mexico.....	53	63	67	33	50	266
New York.....	657	545	635	496	711	3,044
North Carolina.....	140	113	86	67	82	488
North Dakota.....	27	35	24	11	18	115
Ohio.....	221	251	245	175	285	1,177
Oklahoma.....	114	107	142	73	116	552
Oregon.....	56	38	37	35	39	205
Pennsylvania.....	219	252	258	172	269	1,170
Rhode Island.....	26	27	22	13	20	108
South Carolina.....	53	53	37	17	45	205
South Dakota.....	32	18	24	14	20	108
Tennessee.....	114	142	167	114	123	660
Texas.....	169	166	176	149	275	935
Utah.....	29	23	20	23	54	149
Vermont.....	37	23	13	25	24	122
Virginia.....	143	131	82	78	127	561
Washington.....	75	48	57	59	105	344
West Virginia.....	98	90	84	41	76	389
Wisconsin.....	126	127	67	54	148	522
Wyoming.....	13	32	27	28	19	119
U. S. Possessions....	6	11	2	1	27	47
Totals.....	5,872	5,461	5,423	4,185	6,584	27,525

This table shows the totals registered in each state during each of the last five years. In some states it will be noted that there has been a gradual decrease during the first four years and a large increase in 1919. In others this increase has not been so large. The totals also are given for the entire five years. It will be noted that seven states registered over 1,000 physicians, the largest number being in New York with 3,044 followed by Illinois with 2,521, California with 1,841, Ohio with 1,177, Pennsylvania with 1,170, Massachusetts with 1,156 and Missouri with 1,099. Omitting the outlying territories the lowest registration during the five years was in New Hampshire, where only 94 physicians were registered, followed by Rhode Island and South Dakota each having 108. Delaware with 109, Nevada with 114, North Dakota with 115 and Wyoming with 119.

In the five years there were altogether 27,525 registrations, an average of 5,505 each year.

highest numbers are Massachusetts with 1,362, Pennsylvania with 1,182, California with 1,098, Missouri with 875 and Ohio with 840.

TOTAL REGISTRATION IN 1919

The tables thus far described have referred only to the results of examinations and to those registered on that basis. Table G, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether 6,584 physicians were registered by all methods during 1919, as compared with 4,185 in 1918, 5,423 in 1917, 5,461 in 1916, 5,872 in 1915 and 5,797 in 1914. The total

registered in 1918—4,185—was the lowest number registered in any year since the publication of these statistics was begun. This was undoubtedly due to the war. This year the total is increased by 2,399 and is the largest number since 1912. Of the increase, 1,487, or 59.5 per cent., were reciprocal registrations.

By reciprocity or under exemption clauses, 2,524 were licensed in 1919 as compared with 1,031 in 1918, 1,362 in 1917, 1,338 in 1916 and 1,386 in 1915.

Over 100 were registered by all methods in twenty-three states; over 200 in nine, and over 300 in four, the largest numbers registered being 711 in New York, 568 in Illinois, 445 in California and 305 in Massachusetts. Of those licensed in California 336, or 75.5 per cent., were registered by the endorsement of licenses granted by the boards of other states. California also registered as physicians and surgeons 13 graduates of osteopathic colleges. Fourteen osteopaths were so licensed in Colorado, 2 in Washington and one each in New Hampshire and Texas. Texas also registered 36 osteopaths by reciprocity.

TOTAL REGISTRATION IN FIVE YEARS

Table H permits the reader to compare the registrations in each state for the last 5 years. There was a decrease from 1915 until 1918. The decrease of 1,238 in 1918 was due undoubtedly to war conditions. A rebound is seen, however, in 1919, when there was an increase of 2,399. It is interesting to compare the registrations in different states. For example, in 1918 Massachusetts had an increase in the number of registrations regardless of the general decrease in the majority of states. Massachusetts was one of the states which also in 1919 showed an increase beyond what would be expected by the general increase. Since Massachusetts does not have reciprocal relations with other states, this increase is apparently due to the faulty medical practice act in that state, where the board is not given authority to refuse recognition to low grade medical colleges and cannot insist on reasonable standards of preliminary education. Attention is called also to the figures in 1919 for Arkansas, California, Connecticut, Minnesota, Nebraska, Texas, Wisconsin and Washington, in which states the registrations are larger than would be expected with the general increase in registrations. In California and Texas this seems to be due to the unusually generous provision for or the administration of reciprocity. In Arkansas and Connecticut, although the regular medical boards exact fairly high qualifications, there are generous sectarian boards which are not so particular. In Nebraska, only a high school education is required as the minimum standard of preliminary education. In Minnesota and Wisconsin, during 1919 generous provision was made for registering, without further examination, physicians who had been in the government medical services.

On the other hand, it will be noted that in several states, registrations in 1919 are less than in 1918 or are much smaller than would be expected with the general increase in registrations. In Vermont, there was a lower registration than in 1918, while in Indiana, Kentucky, Montana, New Hampshire, North Dakota and Oregon, the registrations are smaller than would be expected. It will be noted meanwhile that New Hampshire had the lowest number registered in the five years, while the largest number registered was in New York. This table would be interesting in connection with a study of the distribution of physicians in the United States.

MEDICAL TRAINING OF APPLICANTS LICENSED IN 1918

Table I is of special interest, since it shows for each state the numbers of candidates coming from medical schools rated in classes A, B and C, thereby indicating the character of the medical training of the candidates licensed during 1918. Of the 6,584 candidates registered, 4,060 were licensed by examination and 2,524 by reciprocity or on presentation of acceptable credentials. Those who graduated prior to 1907, when the first classification of medical colleges was completed by the Council on Medical Education, are included among those graduating from "Miscellaneous Col-

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es." Among the graduates of Class C schools are included graduates of osteopathic colleges who were licensed as physicians in California, Colorado, Washington, New Hampshire and Texas. The Texas totals of Class C candidates would be increased if the 36 osteopaths who were licensed by reciprocity received licenses as physicians. Altogether, the 6,584 candidates registered in 1919, 4,368, or 66.4 per cent., were graduates of Class A medical schools; 872, or 13.2 per cent., were from Class B schools; 278, or 4.2 per cent., were from Class C schools, and for 1,066, or 16.2 per cent., the colleges are unclassified.

As will be noted, the largest numbers of Class C graduates were licensed in Illinois with 38; Arkansas, with 33; Colorado, with 30, and California and Tennessee each with 23. All of the Class C graduates registered in Arkansas were licensed by the Eclectic Board.

Illinois registered 129 Class B graduates, the largest number, followed by California, with 69; New York, with 66;

Ohio with 51 and Oklahoma with 45. Oklahoma and Tennessee licensed more graduates of Class B and Class C colleges than of Class A graduates.

Only Class A graduates were registered either by examination or by reciprocity in Mississippi, South Carolina and Vermont.

It is evident that in several states, particularly, more care should be taken in the recognition of medical colleges, or better methods of examination should be adopted which will provide better safeguards against those not having adequate education.

SOURCE OF CANDIDATES REGISTERED IN THREE YEARS

Of the 6,584 physicians registered by all methods in 1919, 4,368, or 66.4 per cent., graduated from Class A medical colleges; 872, or 13.2 per cent., were from Class B medical colleges; and 278, or 4.2 per cent., were from Class C medical colleges. Of all candidates examined, 1,066, or 16.2 per

TABLE I.—CHARACTER OF PHYSICIANS LICENSED IN 1919

STATES	By Examination					On Reciprocity or Credentials					Totals Registered from Medical Colleges in Class				Grand Totals	Marginal Number
	Medical Colleges in Class				Totals	Medical Colleges in Class				Totals						
	A	B	C	Misc.		A	B	C	Misc.		A	B	C	Misc.		
Alabama.....	16	6	0	1	23	21	7	0	4	32	37	13	0	5	55	1
Arizona.....	13	10	2	23	48	0	0	0	0	0	13	10	2	23	48	2
Arkansas.....	12	13	33 ¹	12	70	19	21	0	20	60	31	34	33 ¹	32	130	3
California.....	43	33	19 ²	14	109	111	36	11	178	336	154	69	30 ²	192	445	4
Colorado.....	30	2	22 ³	3	57	26	11	1	46	84	56	13	23 ³	49	141	5
Connecticut.....	86	5	0	3	94	3	2	2	6	13	89	7	2	9	107	6
Delaware.....	13	6	0	0	19	8	0	0	1	9	21	6	0	1	28	7
District of Columbia.....	49	1	1	0	51	6	1	1	7	15	55	2	2	7	66	8
Florida.....	31	5	3	25	64	0	0	0	0	0	31	5	3	25	64	9
Georgia.....	49	9	0	2	60	31	9	1	10	51	80	18	1	12	111	10
Idaho.....	17	3	2	9	31	8	2	0	8	18	25	5	2	17	49	11
Illinois.....	317	117	31	10	475	59	12	7	15	93	376	129	38	25	568	12
Indiana.....	31	1	0	2	34	10	9	2	10	31	41	10	2	12	65	13
Iowa.....	68	5	0	5	78	36	14	4	17	71	104	19	4	22	149	14
Kansas.....	25	4	0	3	32	28	13	6	10	57	53	17	6	13	89	15
Kentucky.....	22	6	1	2	31	18	5	3	11	37	40	11	4	13	68	16
Louisiana.....	67	9	1	3	80	14	0	0	4	18	81	9	1	7	98	17
Maine.....	37	1	0	5	43	2	0	0	6	8	39	1	0	11	51	18
Maryland.....	137	7	0	1	145	17	4	4	9	34	154	11	4	10	179	19
Massachusetts.....	243	14	19	29	305	0	0	0	0	0	243	14	19	29	305	20
Michigan.....	46	4	0	2	52	76	15	0	39	130	122	19	0	41	182	21
Minnesota.....	94	1	0	3	98	46	15	1	19	81	140	16	1	22	179	22
Mississippi.....	17	1	0	0	18	15	5	1	7	28	32	6	1	7	46	23
Missouri.....	103	8	6	16	136	53	17	5	21	96	159	25	11	37	232	24
Montana.....	15	5	1	5	26	0	0	0	0	0	15	5	1	5	26	25
Nebraska.....	94	4	3	1	102	25	18	4	18	65	119	22	7	19	167	26
Nevada.....	3	2	4	4	13	4	0	1	5	10	7	2	5	9	23	27
New Hampshire.....	4	0	1	0	5	10	0	0	3	13	14	0	1	3	18	28
New Jersey.....	57	2	0	2	61	130	20	0	52	202	187	22	0	54	263	29
New Mexico.....	0	2	0	0	2	17	9	1	21	48	17	11	1	21	50	30
New York.....	558	61	2	6	627	42	5	1	36	84	600	66	3	42	711	31
North Carolina.....	57	2	0	0	59	10	3	1	9	23	67	5	1	9	82	32
North Dakota.....	4	2	0	0	6	7	2	0	3	12	11	4	0	3	18	33
Ohio.....	111	39	0	6	156	83	12	1	32	128	194	51	1	38	284	34
Oklahoma.....	11	19	1	3	34	17	26	4	35	82	28	45	5	38	116	35
Oregon.....	27	0	2	10	39	0	0	0	0	0	27	0	2	10	39	36
Pennsylvania.....	187	18	0	8	213	52	0	1	3	56	239	18	1	11	269	37
Rhode Island.....	14	2	1	3	20	0	0	0	0	0	14	2	1	3	20	38
South Carolina.....	42	3	0	0	45	0	0	0	0	0	42	3	0	0	45	39
South Dakota.....	8	2	1	9	20	0	0	0	0	0	8	2	1	9	20	40
Tennessee.....	51	22	23	0	96	18	3	0	6	27	69	25	23	6	123	41
Texas.....	84	3	1 ⁴	1	89	72	35	15	64	186	156	38	16 ⁴	65	275	42
Utah.....	27	2	0	0	29	8	4	3	10	25	35	6	3	10	54	43
Vermont.....	20	2	0	0	22	0	0	0	2	2	20	2	0	2	24	44
Virginia.....	57	5	0	3	65	45	3	0	14	62	102	8	0	17	127	45
Washington.....	28	6	8	21	63	21	7	1	13	42	49	13	9	34	105	46
West Virginia.....	23	10	0	2	35	24	5	1	11	41	47	15	1	13	76	47
Wisconsin.....	32	1	0	1	34	65	20	2	11	98	97	21	2	12	132	48
Wyoming.....	3	8	4	4	19	9	3	1	3	16	12	11	5	7	35	49
U. S. Territories and Possessions.....	16	6	0	5	27	0	0	0	0	0	16	6	0	5	27	50
Totals.....	3,102	499	192	267	4,060	1,266	373	86	799	2,524	4,368	872	278	1,066	6,584	

1. Of the 130 physicians licensed in Arkansas, the Regular Board licensed by examination 12 Class A, 12 Class B and 10 miscellaneous graduates and by reciprocity 19 Class A, 21 Class B and 20 miscellaneous graduates, a total of 94. The Eclectic Board licensed by examination 11 of the 33 Class C graduates and 2 of the miscellaneous graduates. The Homeopathic Board reported no candidates licensed either by examination or by reciprocity.

2. Of the 30 graduates of Class C colleges licensed in California, 13 were graduates of osteopathic colleges which are not generally recognized as medical colleges by state licensing boards. Altogether 28 osteopaths were admitted to the examination for licensure as physicians and 13 were licensed.

3. Of the 23 graduates of Class C colleges licensed in Colorado, 14 were graduates of osteopathic colleges, institutions inferior in most respects to Class C medical schools which are reported as not recognized in Colorado.

4. Texas licensed 1 Class C graduate by examination (although Class C colleges are reported as not recognized) and 15 Class C graduates (excluding 36 osteopaths) were licensed by reciprocity, a total of 16.

This table shows the classification of the colleges from which most of the physicians graduated who were licensed in 1919. Graduates of col-

leges which became extinct prior to 1907 who were examined, and all reciprocity licentiates who graduated prior to 1907, are unclassified and included under "miscellaneous" since it was in 1907 that the Council on Medical Education completed its first classification of all medical colleges.

It will be seen that sixteen states accepted altogether 46 Class C graduates through reciprocity where they did not license any by examination. On the whole, however, 192 were licensed by examination where only 86 were registered through reciprocity.

By both examination and reciprocity, the largest numbers of Class C graduates were licensed in Illinois, 38; Arkansas, 33; California, 30; Colorado and Tennessee, each 23; Massachusetts, 19 and Texas, 16. The Texas figures would be increased by 36 if the osteopaths registered by reciprocity were granted licenses as physicians. The largest numbers of Class B graduates were licensed in Illinois, 129; California, 69; New York, 66; Ohio, 51; Oklahoma, 45; Texas, 38 and Arkansas, 34.

Of all physicians licensed, 4,368, or 66.4 per cent., were graduates of Class A medical schools; 872, or 13.2 per cent., from Class B schools; 278, or 4.2 per cent., from Class C schools, and 1,066, or 16.2 per cent., from foreign and miscellaneous colleges.

REGISTERED THROUGH RECIPROCITY BY STATE EXAMINING BOARDS DURING 1919

[illegible]

* U. S. Army, Navy and Public Health Service.

This table shows the number of physicians registered by each state through reciprocity during 1919. Read from left to right, it shows the total number of physicians registered through reciprocity in the state named and the number of such candidates coming from each of the states named at the top of the various columns. Read from above downward, the figures show the number of physicians who left the state named at the head of the column and went to each of the states named in the corresponding lines, and at the bottom the total number of candidates leaving the state to go elsewhere. For example, read from left to right the table shows that Delaware registered nine candidates through reciprocity in 1919 and that, of these candidates one each came from the District of Columbia, New Jersey and Vermont and three each

from New York and Pennsylvania. Read from above downward the table shows that from Delaware one candidate each went to California, Illinois, New Jersey and Ohio, and two each went to New York and Pennsylvania, the total leaving the state to go elsewhere being eight. The line at the bottom shows in what states physicians who registered through reciprocity obtained their original licenses. From Illinois 32 candidates, the largest number, obtained their original licenses. New York follows with 197, Missouri with 144, Tennessee with 124 and Pennsylvania with 113. The total number licensed by indorsement of licenses or certificates obtained in other states was 2,459. This total does not include 36 osteopaths who evidently were granted licenses as physicians and surgeons in Texas through reciprocity with osteopathic boards of other states.

TABLE K.—RECIPROCAL REGISTRATION IN FIVE YEARS (SHOWING WHAT STATES ISSUED ORIGINAL LICENSES)

STATE	Physicians Going from States Named During					Totals	STATE	Physicians Going from States Named During					Totals
	1915	1916	1917	1918	1919			1915	1916	1917	1918	1919	
Alabama.....	1	4	8	12	27	52	New Mexico.....	5	2	2	6	9	24
Arizona.....	6	5	6	4	7	28	New York.....	73	84	83	74	197	511
Arkansas.....	37	56	41	24	72	230	North Carolina.....	13	17	9	16	24	79
California.....	3	2	2	5	14	26	North Dakota.....	6	4	13	4	17	44
Colorado.....	15	8	14	10	22	69	Ohio.....	47	51	43	27	73	241
Connecticut.....	3	1	0	2	12	18	Oklahoma.....	28	26	17	28	53	152
Delaware.....	6	8	4	11	8	37	Oregon.....	2	2	3	7	15	29
District of Columbia.....	18	20	16	14	30	98	Pennsylvania.....	79	74	62	57	113	385
Florida.....	4	2	1	2	2	11	Rhode Island.....	2	1	3	1	4	11
Georgia.....	22	30	28	10	38	128	South Carolina.....	12	7	7	4	5	35
Idaho.....	1	5	4	0	7	17	South Dakota.....	7	3	3	6	3	22
Illinois.....	198	178	176	125	325	1002	Tennessee.....	34	65	67	34	124	324
Indiana.....	43	27	22	30	57	179	Texas.....	12	15	20	23	38	108
Iowa.....	46	32	44	40	71	233	Utah.....	6	16	13	6	17	58
Kansas.....	39	33	32	28	75	207	Vermont.....	25	15	13	7	25	85
Kentucky.....	48	40	44	31	71	234	Virginia.....	30	36	42	36	61	205
Louisiana.....	16	16	13	5	36	86	Washington.....	10	12	10	12	21	65
Maine.....	12	13	8	8	18	59	West Virginia.....	36	25	24	16	41	142
Maryland.....	38	45	34	25	61	203	Wisconsin.....	29	32	28	13	51	153
Massachusetts.....	19	22	20	10	33	107	Wyoming.....	5	1	4	4	6	20
Michigan.....	42	34	42	24	69	211	U. S. Territories and Possessions.....	....	1	1	1	4	7
Minnesota.....	34	19	28	20	27	128	Army, Navy, P. H. Service.....	1	1	1	10	130	143
Mississippi.....	10	18	59	11	48	146	Natl. Bd. of Med. Exam. Foreign and Misc. ....	....	....	2	1	19	22
Missouri.....	104	93	84	65	144	490		1	6	1	....	2	10
Montana.....	1	1	1	1	8	12							
Nebraska.....	50	28	49	36	60	223							
Nevada.....	9	7	5	7	8	36							
New Hampshire.....	4	11	7	4	24	50							
New Jersey.....	22	17	16	15	30	100							
							Totals.....	1314	1271	1279	972	2459	7295

This table shows that 7,295 candidates were registered through reciprocity during the last five years. Registration by reciprocity gradually increased from 1905 to 1914, since which time there has been a gradual decrease as the total of physicians licensed by other methods has decreased. In 1918 there was a marked decrease in the total registered due largely to the war. This year there was an increase of 1,487 due

to a large migration following the return from military service. It will be noted that 130 were registered in 1919 on this basis. A study of the totals for the different states shows that of the 7,295 registered during the five years 1,002, or 13.7 per cent., obtained their original license in Illinois. New York could easily lead Illinois but reciprocal relations have been established with only six other states.

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it., came from medical colleges which have ceased to
st and from foreign medical colleges. By comparing
se figures with the results for 1917 and 1918 as shown in
ble 3, it is noteworthy that the percentages from Class B

TABLE 3.—SOURCE OF PHYSICIANS LICENSED IN
THREE YEARS

Year	Medical Colleges in						Miscellaneous and Foreign Colleges		Total
	Class A		Class B		Class C		Number	Per Cent.	
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.			
7.....	3,369	62.1	988	18.2	297	5.3	769	14.4	5,423
8.....	2,456	58.7	682	16.3	342	8.2	705	16.8	4,185
9.....	4,368	66.4	872	13.2	278	4.2	1,066	16.2	6,584
Totals.....	10,193	63.0	2,542	15.7	917	5.6	2,540	15.7	16,192

d Class C colleges are steadily decreasing in spite of the
ct that, in a few states, osteopaths are being licensed as
ysicians and surgeons.

TABLE L.—STATE REQUIREMENTS OF PRELIMINARY
EDUCATION

There are now forty states which have adopted requirements of
eliminary education in addition to a standard four-year high school
education. Of this number 32 now require the two year standard.
ese states, the number of college years required and the time the
her requirements became or become effective are as follows:

State Examining Board of	One Year of College Work		Two Years of College Work	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates
Alabama.....	.....	.....	1915-16	1919
Alaska.....	1914-15	1918	1918-19	1922
Arizona.....	1914-15	1918	1918-19	1922
Arkansas ¹	1915-16	1919	1918-19	1922
California.....	1915-16	1919	.....	.....
Colorado.....	1908-09	1912	1910-11	1914
Connecticut.....	1911-12	1915	.....	.....
Delaware*.....	.....	.....	.....	.....
District of Columbia†.....	.....	.....	.....	.....
Florida ¹	1914-15	1918	1918-19	1922
Georgia*.....	.....	.....	1918-19	1922
Idaho*.....	.....	.....	.....	.....
Illinois.....	1915-16	1919	1918-19	1922
Indiana.....	1910-11	1914	1911-12	1915
Iowa.....	.....	.....	1911-12	1915
Iowa.....	1910-11	1914	1918-19	1922
Kansas.....	1914-15	1918	.....	.....
Kentucky.....	1915-16	1919	1918-19	1922
Louisiana.....	1915-16	1919	.....	.....
Maine.....	1914-15	1918	1918-19	1922
Maryland.....	.....	.....	.....	.....
Massachusetts.....	1914-15	1918	1918-19	1922
Michigan.....	.....	.....	1908-09	1912
Minnesota.....	1915-16	1919	1919-20	1923
Mississippi.....	.....	.....	.....	.....
Missouri*.....	1914-15	1918	1918-19	1922
Montana.....	.....	.....	.....	.....
Nebraska*.....	.....	.....	.....	.....
Nevada*.....	.....	.....	.....	.....
New Hampshire.....	1914-15	1918	1915-16	1919
New Jersey.....	1915-16	1919	1917-18	1921
New Mexico.....	1914-15	1919	1918-19	1922
New York.....	1917-18	1921	1918-19	1922
North Carolina.....	1914-15	1918	1918-19	1922
North Dakota.....	.....	.....	1908-09	1912
Ohio*.....	.....	.....	.....	.....
Oklahoma.....	1914-15	1918	1917-18	1921
Oregon.....	.....	.....	.....	.....
Pennsylvania.....	1914-15	1918	.....	.....
Rhode Island.....	1914-15	1918	1918-19	1922
South Carolina.....	.....	.....	1918-19	1922
South Dakota.....	1908-09	1912	1911-12	1915
Tennessee.....	1916-17	1920	1918-19	1922
Texas.....	1914-15	1918	.....	.....
Texas.....	1913-14	1917	.....	.....
Vermont.....	1913-14	1917	1918-19	1922
Virginia.....	1914-15	1918	1917-18	1921
Washington.....	1914-15	1918	1918-19	1922
West Virginia.....	1917-18	1921	.....	.....
Wisconsin.....	.....	.....	1915-16	1919
Wyoming†.....	.....	.....	.....	.....

* Require a four-year high school education or its equivalent.
† No fixed standard.
1. The higher standards in Arkansas and Florida are evidently not
enforced by the sectarian licensing boards of those states.

REGISTRATION BY RECIPROCITY

Table J gives those registered without examination on
presentation of satisfactory credentials, which included a
license issued by some other state. This is commonly

referred to as "reciprocity," which conveys the idea that
the state which accepts a license of another must be granted
the same courtesy by the state issuing the original license.
The term does not always apply, however, since some state
boards—Arizona, California, Colorado, Delaware, Maryland,
New Hampshire, New Jersey and North Carolina, as exam-
ples—accept the physician's credentials, if satisfactory,
whether or not the state board issuing the original license
returns the favor. Had not reciprocal relations been estab-
lished by the forty states shown in Table J, 2,458 physicians
—many of whom had been in practice for ten or more years
—would have been compelled to undergo the ordeal of a
second trying examination. This year 130 physicians were
registered without examination, largely in Minnesota and
Wisconsin, on the basis of their having been commissioned
in the government medical services.

Table K shows in what states were granted the original
licenses of those who were registered elsewhere under the

TABLE M.—ADVANCES IN STATE LICENSE REQUIREMENTS
IN SIXTEEN YEARS

Requirement or Provision	States Having Provision for			States Still Having No Provi- sion for
	1904	1920	In- crease	
Preliminary Education—				
Any requirement	20	47	27	3 ¹
A standard four-year high school education or higher.....	10	45	35	5 ²
One year or more of college work..	0	40 ³	40	10 ³
Two years of college work as a minimum	0	32 ³	32	18 ³
That all applicants be graduates of a medical college.....	36	49	13	1 ⁴
That all applicants undergo an exam- ination for license.....	45	49	4	1 ⁵
Requirement of practical tests in the license examinations	1	16	15	34
Hospital intern year required.....	0	10 ⁴	10	39
Full authority by board to refuse recognition to low-grade colleges....	14	45	31	5 ⁷
Boards refusing to recognize low- grade colleges ⁸	5	42	37	8 ⁹
Reciprocal relations with other states..	27	44	17	6 ¹⁰
Single boards of medical examiners.....	36	44	8	6 ¹¹

1. District of Columbia, Massachusetts and Wyoming.
2. Idaho, Oregon and the states named in Footnote 1.
3. See Table L.
4. Colorado.
5. New Mexico.
6. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; Rhode Island, 1917; North Dakota, 1918; Washington, 1919; Illinois and Michigan, 1922; Iowa, 1923, and Texas, 1924.
7. District of Columbia, Massachusetts, Utah, Washington and Wyoming.
8. In three states, Arkansas, Connecticut and Florida, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges and have enforced higher standards of preliminary education.
9. Alaska, Arizona, Nebraska, Nevada and the states named in Footnote 7.
10. Alaska, Arizona, Connecticut, Florida, Massachusetts, Rhode Island. To this list should be added the outlying territories of Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
11. Multiple boards still remain in Arkansas, Connecticut, District of Columbia, Florida, Louisiana and Maryland.

reciprocity provision during the last five years. Of the
7,294 physicians licensed through reciprocity during the last
five years, the largest number coming from any one state
was 1,002, who obtained their original licenses in Illinois.
Although New York has a larger number of medical college
graduates each year than Illinois,² only 511 physicians
obtained original licenses in New York and registered else-
where through reciprocity in the last five years. This is
accounted for by the fact that Illinois has reciprocal rela-
tions with twenty-five other states, while New York has
established such relations with only six.

IMPROVED STANDARDS OF LICENSURE

Table L shows the states which have adopted one or two
years of college work as a minimum standard of preliminary
education for those who seek the license to practice medicine
in those states. The first and third columns show, respec-
tively, when the one year and the two years of premedical

2. THE JOURNAL, Aug. 16, 1919, p. 513, Table 12.

college work affects students matriculating in medical colleges, and the second and fourth columns give the years in and after which all applicants for licenses in the various states are affected by the increased requirements. This table shows the rapidity with which state board requirements of preliminary education have been advanced since 1908, prior to which no state was requiring more than a four-year high school education. As will be noted, there are now forty states which have adopted the higher standard, and thirty-two of these require as a minimum *two years* of premedical college work. It is understood that in every instance the one or two years of collegiate work must have included courses in physics, chemistry and biology.

In Table M the advance in standards of licensure is shown for all states since 1904. The most marked increase is in regard to the requirement of collegiate work in forty states as referred to in Table L. The next greatest increase (thirty-seven) is in the number of states—now forty-two—which are refusing to recognize low-grade medical colleges. Although, as shown in the third column, marked improvements have been made in state requirements for licensure, nevertheless, as indicated by the last column, there is still room for further improvement. The greatest needs are for a wider adoption of the requirement of the hospital intern year, the standard of two years of premedical college work, and—a matter of more vital importance—a more general and larger use of practical tests in the examinations. The states in which the boards are making really effective use of such examinations are Illinois, Massachusetts, Minnesota, North Dakota, Ohio and South Dakota. They are being followed to a greater or less extent in a few other states.

HOSPITAL INTERN YEAR

The hospital intern year has been adopted as an essential qualification for the license to practice in ten states, becoming effective in different years, as follows:

State Board of	Affects Student Matriculants	Affects All Applicants
Pennsylvania	1909-10	1914
New Jersey	1911-12	1916
Alaska	1912-13	1917
Rhode Island	1913-14	1917
North Dakota	1913-14	1918
Washington	1914-15	1919
Illinois	1917-18	1922
Michigan	1917-18	1922
Iowa	1918-19	1923
Texas	1919-20	1924

RECOGNITION OF GOVERNMENT EXAMINATION

The examination given under federal authority, which should be generally recognized by all state licensing boards as a qualification for license to practice medicine, is that given to medical officers of the United States Army, Navy, and Public Health Service. In fact, retired officers from the services mentioned are now eligible to receive licenses without further examination in

Alabama	Illinois	Virginia
California	North Dakota	Wisconsin
Colorado	Porto Rico	

This has been interpreted in most of the above states to apply only to those who were admitted to the government services under the strict examination which prevailed prior to the entrance of the United States in the World War and not to those who were commissioned after the admission requirements were relaxed. In Wisconsin, however, 76 physicians were licensed following their discharge from the government services. In Minnesota in April, 1919, a special law was enacted empowering the licensing board to register without examination physicians who had been in the government medical service overseas. Pennsylvania and Virginia licensed, respectively, 19 and 11 government medical officers following their discharge.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners, which was organized in 1915, consists of fifteen members, including the Surgeon-Generals of the Army, Navy and Public Health Service, and one other representative of each of those ser-

vices, three representatives of the state medical licensing boards and six members appointed at large. Up to Dec. 31, 1919, seven examinations had been held as shown in the following tabulation:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
Oct., 1916	Washington	10	5	5	50.0
June, 1917	Washington	12	9	3	33.3
Oct., 1917	Chicago	28	22	6	21.5
Jan., 1918	New York	20	18	2	10.0
Apr., 1918	Ft. Riley, Ft. Oglethorpe	23	18	5	26.1
Dec., 1918	Chicago, New York	16	15	1	6.3
June, 1919	Philadelphia	52	51	1	1.9
Totals.....		161	138	23	14.3

Thirty medical schools were represented and the results were as follows:

College	Total Examined	Passed	Failed	Percentage Failed
Boston University S. of M.....	1	1	0	0.0
Columbia Univ. Coll. of P. & S....	11	11	0	0.0
Cornell Univ. Med. College.....	4	4	0	0.0
Emory University School of Med..	1	1	0	0.0
Georgetown University	1	1	0	0.0
Harvard University M. S.....	9	9	0	0.0
Howard Univ. School of Med.....	1	0	1	100.0
Indiana Univ. School of Med.....	2	1	1	50.0
Jefferson Medical College.....	3	1	2	66.7
Johns Hopkins University M. D....	14	12	2	14.3
McGill University Faculty of M....	1	0	1	100.0
Northwestern Univ. Med. School..	17	13	4	23.5
Rush Medical College.....	34	28	6	23.5
State Univ. of Iowa C. of M.....	3	2	1	33.3
Univ. and Bellevue Hosp. M. C....	1	0	1	100.0
University of Buffalo M. D.....	1	1	0	0.0
University of California M. S.....	1	1	0	0.0
University of Colorado S of M....	1	1	0	0.0
University of Maryland S. of M....	1	1	0	0.0
University of Michigan M. S.....	3	1	2	66.7
University of Minnesota M. S.....	2	1	1	50.0
University of Nebraska C. of M....	1	1	0	0.0
University of Penna. S. of M.....	39	38	1	2.6
University of Pittsburgh S. of M....	1	1	0	0.0
University of Texas Dept. of M....	3	3	0	0.0
University of Utrecht	1	1	0	0.0
University of Va. Dept. of M.....	1	1	0	0.0
Western Reserve Univ. S. of M....	1	1	0	0.0
Woman's Medical College.....	1	1	0	0.0
Yale University School of Med....	1	1	0	0.0
Totals.....	161	138	23	14.3

Holders of certificates from the National Board of Medical Examiners will be registered without further examination in the following twenty states:

Alabama	Kentucky	North Dakota
Colorado	Maryland	Pennsylvania
Delaware	Minnesota	Rhode Island
Florida	Nebraska	South Carolina
Georgia	New Hampshire	Vermont
Idaho	New Jersey	Virginia
Iowa	North Carolina	

When the permanence of the National Board of Medical Examiners is established and the high character of its examinations is more generally recognized, it is quite probable that its certificate will be recognized by the licensing boards of a larger number, if not of all states.

IN CONCLUSION

In the gathering and publication of these statistics, the endeavor has been to give a fair presentation of facts, a knowledge of which is always beneficial. This annual presentation of the results of state license examinations has had a powerful influence on medical education and medical licensure in this country. We reiterate our acknowledgments to the state licensing boards for their ready cooperation and the complete reports which have been furnished. For the verification of all figures, the reports and data furnished by medical colleges have been of much value. We have no doubt that the information here published will be of service not only to the medical colleges and to the state boards, but also to the public, since the end-result is better qualified physicians.

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SATURDAY, APRIL 17, 1920

STATISTICS OF THE STATE BOARD
EXAMINATIONS

We publish this week, for the seventeenth consecutive year, statistics based on official reports of examinations conducted by state medical boards, and of registrations by reciprocity and other methods. During these seventeen years the work has had the hearty support and cooperation of the executive officers of the various state licensing boards, who have furnished reports of their examinations. Every report has been carefully checked with alumni lists furnished by the deans of the medical colleges, and by this cross-checking, errors have been corrected and the state boards concerned have been notified. Thus, not only have these statistics been made accurate and reliable, but also state board records have been corrected. We express our acknowledgments for the splendid cooperation of the officers of both the state licensing boards and the medical colleges by which the publication of these statistics has been made possible.

NO PROTECTION AGAINST INCOMPETENTS IN
ARKANSAS

These statistics are of great importance as they relate to medical education and to medical licensure. For each state they show the number and character of physicians admitted to examinations; the character of the colleges from which they graduated; the numbers registered or rejected, and the proportion rejected. The material is so arranged that the facts regarding any one college or any one state can be compared with those, respectively, of all other colleges and states. Figures show that in some states people are well protected against illiterate and incompetent physicians, while in others, in varying degrees, the opposite situation prevails. A glaring instance relates to Arkansas, where, in spite of what the regular board of medical examiners is doing to enforce reasonably high educational standards and methods of licensure, thirty-six physicians were licensed who could not meet its requirements. This was because of the existence of a separate board of eclectic examiners. Among other applicants, this board examined thirty-three graduates of a nominally eclectic medical school, the Kansas City

College of Medicine and Surgery, and licensed all but one of them, even though it was well known that this college is not recognized by the licensing board of Missouri—its home state—and by the boards of thirty-six other states. And this has been going on for several years. Indeed, the reports seem to indicate that neither the Arkansas Board of Eclectic Examiners nor the Kansas City College of Medicine and Surgery could exist without the other. Arkansas, Florida and Connecticut, meanwhile, are three states which still have separate sectarian boards.

LICENSING OSTEOPATHS

During the last three years a few boards have examined osteopaths and licensed them as physicians. The objection to this is not that these candidates were osteopaths, but that their educational qualifications were seriously inferior to those which physicians are required to possess. Osteopathic colleges have been repeatedly inspected and, when measured by the same standards as are applied in the grading of medical schools, no one of them could rank higher than the lowest Class C medical college. Nevertheless, fourteen osteopaths were licensed as physicians in Colorado by examination, thirteen in California, two in Washington, and one each in New Hampshire and Texas.

THE STATISTICS

Special attention is called to Table I (page 1097), which shows the states—Illinois leading—which are registering the largest numbers of graduates of Class C and Class B colleges. Other states in this group are Arkansas, California, Colorado, Tennessee, Nebraska and Texas. The figures in Table H (page 1096) indicate that applicants are flocking to states—Massachusetts, for example—in which adequate educational safeguards have not been provided.

The effect of these statistics on both medical education and medical licensure has been profound. The first step toward the securing of improvements in any reform is to find out where improvements are needed. That has been the function of these statistics in medical education and licensure.

When the collection of data from the various boards was begun by THE JOURNAL in 1903, reports from many states could not be obtained for the very reason that records were not complete or were too imperfect to enable the boards to supply the information needed. That this condition has been corrected is evidenced by the fact that for the last several years full and complete reports have been received from all state boards.

Since 1905, the collection of these statistics has been an important part of the work of the Council on Medical Education in its campaign for the improvement of medical education and licensure. The effectiveness of publicity in medical licensure may be noted in Table M, on page 1099. Higher standards of preliminary education have been adopted; all states now require

that applicants must have graduated from a medical school; all but one state, New Mexico, now require an examination of all applicants; a larger number of states have improved their examination by the use of practical laboratory and clinical tests; a larger number of states have obtained authority to refuse recognition to low-grade medical colleges and are making use of that authority; reciprocal relations between states have been widely extended; ten states require a hospital internship as an essential for the license, and all but a few states now have single boards of medical examiners.

EFFECTS ON MEDICAL EDUCATION

On medical education the effect of these statistics has been even more pronounced. Publicity regarding the percentages of failures of graduates at state licensing examinations has led to the adoption of better methods of teaching. Publicity of the fact that in certain states diplomas granted by various colleges were not recognized as an acceptable qualification for the license induced a number of medical schools to make improvements in order to retain students. That such improvements have been made is shown by the increased number of colleges each year which are recognized in all states.

Briefly, these statistics show each medical school what improvements are essential if its graduates are to succeed in examinations of state boards; what state boards are requiring as a minimum of preliminary education, and in what states the boards are refusing to examine its graduates. To each state board these statistics show, by comparison with other states, the lines along which further improvements are needed in its educational standards and methods of examination. Constant publicity has led to a general improvement and a greater uniformity in the methods of examination by all state boards. The result has been a lessened confusion in the licensing of physicians throughout the country, and correspondingly better safeguards for the public against the licensing of incompetent practitioners.

ACCURACY OF THE WASSERMANN TEST

Under the auspices of the Medical Research Committee, established under the British National Health Insurance Act, numerous investigations have been made of scientific problems affecting the health and the life of the people. Already more than fifty special reports have been issued. The committee considered that the national and racial importance, no less than the scientific interest of the problems relating to syphilis, were a matter for early investigation, and several reports have been issued in this connection. In a previous report¹ of the Special Committee

on Pathologic Methods, the diagnostic value of the Wassermann test was considered. The clinical opinion of a well-known syphilologist was compared in a given set of cases with the results obtained by the Wassermann reaction as performed by four expert serologists working independently. The results were found to be in the closest accordance with the clinical opinion.

In a recent report² the investigation has been carried further: the Wassermann test during life was correlated with the etiologic or anatomic diagnosis made during life and after death. The first part, by Dr. Hubert M. Turnbull of the Pathologic Institute of the London Hospital, concerns the accuracy of Wassermann tests applied before death as related to the findings on postmortem examinations. It is stated in the introduction that whereas this test has been applied in millions of instances, "it is difficult, if not impossible, to find in medical literature a large series of cases in which the etiologic and anatomic diagnosis has been registered in addition to the clinical diagnosis." Dr. Turnbull's report deals with 121 cases in which Wassermann tests had been performed during life by Drs. Fildes and McIntosh. Following the deaths of the patients, minute examination of necropsy material was made. In many instances such minute examination is not made, with the result that lesions are overlooked. It is possible, for instance, that a Wassermann reaction may be positive and no syphilitic lesion may be found postmortem. This is possible because the lesion may exist and not be found, or because a lesion which was present has disappeared under treatment. On the other hand, a Wassermann reaction may be negative, and yet lesions believed to be syphilitic may be demonstrable.

As a result of his investigations, which included the making of thousands of microscopic sections, with their examination, interpretation and classification, Dr. Turnbull concludes that the Wassermann test performed antemortem, as was done in the 121 cases which he examined, is a diagnostic measure of astonishing precision. No proof of inaccuracy of the Wassermann test was found in the whole 121 cases, provided that the test is expected only (1) to give a positive reaction when syphilitic infection is active, and (2) to give a positive reaction either in the serum or in the cerebrospinal fluid when active syphilitic infection is confined to the central nervous system. The report is detailed, extensive, and apparently minutely accurate. It constitutes, therefore, an important document in the study of syphilis.

In the references to literature cited by the author, there is no reference to other than British, German and French periodicals. It would interest him, therefore, to refer to a paper on the value of the Wassermann reaction as indicated by postmortem investiga-

1. The Diagnostic Value of the Wassermann Test, Reports of the Special Committee on Pathologic Methods, Special Report Series 21, Medical Research Committee, National Health Insurance, H. M. Stationery Office, London.

2. Turnbull, H. M.: The Accuracy of Wassermann Tests, Applied Before and After Death, Estimated by Necropsies, Special Report Series 47, Medical Research Committee, National Health Insurance, H. M. Stationery Office, London.

tion in 331 cases at Bellevue Hospital, as reported by Symmers and others in *THE JOURNAL*.³ This paper, published in 1918, antedated even the beginning of Turnbull's work. Symmers, too, points out that certain anatomic changes in persons suspected of syphilis are sometimes exceedingly difficult to interpret, not only in the gross organs as they come under orderly examination at necropsy, but also in the subsequent microscopic investigation of individual tissues. He feels, however, that the errors in diagnosis for or against syphilis will balance. As a result of his investigation, he reports that the Wassermann reaction in the living patient gives a negative result in from 31 to 56 per cent. of cases in which the characteristic anatomic signs of syphilis are demonstrable at necropsy, and that it is positive in at least 30 per cent. of cases in which it is not possible to demonstrate at all the anatomic lesions of syphilis at necropsy.

Here, then, is a wide divergence of opinion, based in each instance on an apparently accurate scientific investigation. The subject obviously is susceptible to further study.

CALCIUM IN THE BODY

Calcium, which makes up about one fiftieth of the weight, constitutes a larger proportion of the body than is represented by any other of the inorganic elements. This fact is by itself sufficient to lend importance to all considerations of the supply of calcium to the body. It happens that this element is distributed with considerable irregularity among the staple articles of food, so that its intake depends in no small degree on the qualitative character of the diet. Among animal foods, milk stands almost alone in exhibiting a conspicuous content of calcium, while among plant products few show even moderate richness in this element. Such facts are probably responsible for the significant statement that "the ordinary mixed diet of Americans and Europeans, at least among dwellers in cities and towns, is probably more often deficient in calcium than in any other chemical element."⁴

In view of the widespread shortage of milk—"the calcium food"—in certain parts of the world, with a reduction in the use of milk following the higher price of this food in many places, the calcium problem in nutrition has become accentuated to an unusual degree. The practice of adding green vegetables, comparatively rich in calcium, to the dietary of infants has increased in recent years. Students of the subject have expressed the belief that the value of such feeding lies in the effect on the mineral metabolism of the organism.⁵ They have reported that in children showing a delayed development, improvement has been brought about by

such additions, and they conclude, on the basis of the mineral content of a number of vegetables, that spinach is the best one to provide a salt addition.

From experiments on animals, McClugage and Mendel⁶ of Yale University gained the impression, through a study of carrots and spinach, respectively, as substitutes for milk in furnishing calcium in the dietary, that their use does not always yield a pronounced advantage to the calcium metabolism. Presumably, therefore, it would be an unsafe procedure to use vegetables extensively as a dietary substitute for milk in the nutrition of children. That broad generalizations applicable to all species and ages are not yet justified, however, is indicated by more recent observations in the Department of Nutrition at Teachers College, Columbia University. Rose⁷ has ascertained the utilization of the calcium of carrots in the human body on persons for whom the calcium intake was in every case close to the estimated minimum for equilibrium. In almost every case there was a positive calcium balance on the carrot diet. When approximately 55 per cent. of the calcium was derived from carrots, one subject had practically the same retention as on a diet in which 70 per cent. of the calcium was derived from milk. Hence Rose properly argues that it seems possible to meet the requirement of the adult human organism for calcium largely, if not wholly, from carrots.

Another question, involving somewhat differently the content of calcium in the daily intake, relates to the possibility of increasing the content of this element in the blood by increasing the ingestion of calcium. This end is sought frequently in current therapeutic efforts, and calcium salts (chlorid, lactate, glycerophosphate) are often prescribed. The latest studies by Denis and Minot⁸ at the Massachusetts General Hospital indicate that it is difficult, if not actually impossible, to enrich human blood in this way. Even 6 gm. (90 grains) of calcium lactate administered orally each day for five days failed to alter the plasma content appreciably. It is possible, judging by the outcome of a few animal tests, that when the initial concentration is very low the amount in the circulating fluid may be more decidedly increased. This needs eventually to be determined in suitable human cases.

6. McClugage, H. B., and Mendel, L. B.: Experiments on the Utilization of Nitrogen, Calcium and Magnesium in Diets Containing Carrots and Spinach, *J. Biol. Chem.* **25**: 353 (Aug.) 1918.

7. Rose, Mary S.: Experiments on the Utilization of the Calcium of Carrots by Man, *J. Biol. Chem.* **41**: 349 (March) 1920.

8. Denis, W., and Minot, A. S.: Effects of Feeding with Calcium Salts on the Calcium Content of the Blood, *J. Biol. Chem.* **41**: 357 (March) 1920.

A Surgeon's Career.—There are three stages in the career of a surgeon: In the first he loses the fear of hemorrhage; in the second he ceases to multiply operations; in the third he acquires the moral courage to stop in the middle of an operation when he finds the condition inoperable. There is a final stage which he never attains with the present span of life—the ability to gage correctly the vital resistance of the patient; yet on this depends the success of every operation.—Sir D'Arcy Power, *Surgical Aphorisms*, *Clin. J.* **49**: 28 (Feb.) 1920.

3. Symmers, Douglas; Darlington, C. G., and Bittman, Helen: The Value of the Wassermann Reaction, *J. A. M. A.* **70**: 279 (Feb. 2) 1918.

4. Sherman H. C.: *Chemistry of Food and Nutrition*, New York, 1918, p. 262.

5. Courtney, A. M.; Fales, H. L., and Bartlett, F. H.: Some Analyses of Vegetables Showing the Effect of the Method of Cooking, *Am. J. Dis. Child.* **14**: 34 (July) 1917.

Current Comment

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners up to December, 1919, had been in existence for four years,¹ and in that time had held seven examinations and examined 161 candidates, of whom 138 passed and received the board's certificate. A sufficient number of examinations have been held, and the board has been in existence long enough to permit its policies and methods to become fairly well established. It is now generally well known that the board has held to reasonably high educational standards, and that its examinations have been comprehensive, practical and thorough. The examinations have been such as to bring out the character of the applicant's medical training and to test not only his ability to memorize, but also his power to observe and his ability in reaching accurate diagnoses to apply the knowledge he has obtained. That the methods and the character of the examinations of this board are being appreciated is evidenced by the fact that twenty state boards² are now recognizing its certificates. The expenses of the board have been approximately \$15,000 each year, the funds having been provided by the Carnegie Foundation for the Advancement of Teaching. This is a large expense, in view of the small number of candidates examined. That the board has not made more rapid advancement and performed a larger function is due mainly to its failure to conduct its examinations in a larger number of cities. It would appear that arrangements could be made so that the written portion of the examination might be held simultaneously in all parts of the country, as is that of the College Entrance Examination Board. It might at least be held in the various cities where medical schools are located. The manner by which the applicants could be given their practical, laboratory and clinical tests could doubtless also be worked out. It would appear that the work and influence of this board could be many times greater than it is at present, and its service to humanity correspondingly increased. The possibilities of this board for good are tremendous; but it is not making the most of its opportunity.

MULTIPLE BOARDS AND CONFUSION IN LICENSURE

The chief difficulty in medical licensure at present is the confusion caused in several states by the multiplicity of the medical and sectarian boards which have to do with the licensing of those who are to treat the sick. This condition should be corrected. Whether or not the practitioner is to make use of medicinal substances, whether he is to apply massage, electricity, cold compresses or to perform a surgical operation is not so material. The matter of first importance is whether he who holds himself out to treat the sick has had training sufficient to familiarize himself not only with the normal conditions and functions of the

human body, but also with the various forms of disease so that he may tell whether or not a patient is sick, and if so, what the trouble is. The practitioner should also be familiar with the many procedures and materials used in the treatment of human disorders so that he can select and apply the right treatment to each particular patient. These statements apply to all practitioners of the healing art regardless of the particular system or method of treatment they advocate. To claim that one form of treatment is applicable to all human disorders is as illogical as to state that the slide-trombone constitutes an entire orchestra. Before one specializes in the playing of any particular musical instrument in an orchestra he must first have secured a training in the fundamentals of music, so that he may know not only when to play but—fully as important—when he should not play. In fact, a note from an instrument in the wrong place may produce more disastrous results than if the player fails to respond at the time his part is indicated. So in the practice of the healing art. Every one who treats human disorders by any special method or system of treatment should first have a thorough training in the fundamental medical sciences, so that he will understand not only when his particular method should be used, but, even more important, when it should not be used. Here again, the use of the wrong method of treatment may produce results fully as disastrous, if not more so, than if such treatment is not used in cases in which it is indicated. In fairness to all who practice the healing art, therefore, there should be in every state: (a) one board of registration; (b) one standard of educational qualifications, and (c) one examination, including written, practical, laboratory and clinical tests. In other words, let all practitioners alike be required to possess reasonably high educational qualifications, and then let them practice as their educated common sense may dictate. Such a provision would not only end the confusion which exists in many states, but also insure better care for the public when sick or injured.

DOES PROHIBITION PAY FROM A HEALTH STANDPOINT?

With the beginning of prohibition, alarmists—there are always such—predicted dire calamities: increase in crime, resort to habit-forming drugs and other vicious practices. The time has been brief for the compilation of accurate statistics on the subject, but some actual evidence has accumulated: In New York City, the Board of Ambulance Service has reported a large decrease in cases of alcoholism and intoxication. In 1919, during January and February, there were 412 and 364 alcoholic calls, respectively. This year, during the same months, these calls numbered 307 and 133. Bellevue Hospital's figures show 228 calls for intoxication during the first two months of 1919 and thirty-one calls for January and February of 1920. As a result, it is estimated that there will be room for seven thousand new patients a year in Bellevue Hospital, owing to the reduction in the number of alcoholic patients. These figures are for New York. What of other cities?

1. See statistics on page 1100, this issue.

2. The list is given on page 1100, this issue.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Personal.—Dr. John C. Davis, Harrisburg, has been appointed health officer of Poinsett County succeeding Dr. Robert E. Yarbrough, deceased.—Dr. Oliver H. Tatum has been appointed city health officer of Arkadelphia, succeeding Dr. William T. Rowland, resigned.

New Officers for State Board of Health.—At the annual meeting of the Arkansas State Board of Health, March 25, Dr. Cyrus F. Crosby, Heber Springs, was elected president, and Dr. Fergus O. Mahony, Eldorado, vice president, each for a term of one year, and Dr. Charles W. Garrison, Little Rock, was reelected secretary and state health officer for a term of four years.

New Society Organization.—At a meeting of the physicians of Little Rock, March 9, the North Little Rock Medical Society was organized. Dr. Shelby Atkinson, Argenta, was elected president; Dr. Martin J. Barlow, Argenta, secretary-treasurer, and a committee was appointed to confer with the finance committee of the city council on the erection of a hospital for North Little Rock.

Conference of Health Officers.—The seventh annual conference of health officers of Arkansas was held in Little Rock, March 25, under the chairmanship of Dr. Charles W. Garrison, Little Rock, secretary of the state board of health. The chief papers presented were by Dr. Charles W. Goodard, Austin, state health officer of Texas, on "The Way We Do Things in Texas"; by Miss Lillie Beauchamp, state supervisor of the American Red Cross, on "The Necessity of State Supervision of Public Health Nurses," and by Miss Earl Chambers, executive secretary of the Arkansas Public Health Association, on "How the Arkansas Public Health Association Can Assist Health Authorities."

DISTRICT OF COLUMBIA

Construction of Gallinger Municipal Hospital Postponed.—The committee on the District of Columbia of the House of Representatives recently recommended the appropriation of \$1,500,000 for building the Gallinger Municipal Hospital in Washington. This appropriation was stricken from the District bill on the floor of the House following a debate showing that this appropriation was three times as large as that provided for exactly the same character of building in 1917. The District commissioners have been unable to negotiate a contract for the construction of the building since 1917 and members of Congress determined to postpone construction of this hospital indefinitely because of the excessive cost of construction at the present time.

GEORGIA

Personal.—A department of sanitary engineering has been established by the state board of health with Mr. H. C. Woodfall as state sanitary engineer. Mr. Woodfall was formerly assistant sanitary engineer with the U. S. Public Health Service, and will devote his time to problems of water supplies, sewage disposal and drainage for the state.—Dr. Frank W. McCorkle, former assistant health officer of Madison County, Ala., has been elected commissioner of health of Decatur County.

Venereal Disease Control.—The venereal disease control work has been keeping pace with its program in the state very well. The interest in the county unit plan has been intensified, and the representatives of the state board of health in their respective counties are doing good work. The department of venereal disease control has mailed to the physicians a supply of report blanks in the past few weeks. It is hoped that physicians will be prompt in making reports. The law is given on the cover of the book of forms, and it is believed that reports on venereal diseases will soon reach a satisfactory basis.

ILLINOIS

Physicians' Licenses Revoked.—At its meeting, April 1, 1920, the Illinois Department of Registration and Education

revoked the licenses of Dr. George W. Alverson, formerly of Area, and Dr. Henri E. R. Altenloh of Chicago. The former is now serving a life sentence in the Joliet penitentiary and his license was revoked for gross unprofessional and dishonorable conduct. The license of Dr. Altenloh was revoked because of the use of alleged false and fraudulent statements in advertising matter by which he attempted to obtain money and practice.

Chicago

Personal.—Dr. Myron E. Lane, at present a member of the staff of the Chicago Municipal Tuberculosis Hospital, has been appointed medical director and superintendent of the Jasper County Tuberculosis Sanatorium, Webb City, Mo.

Industrial Surgeons' Association.—The organization of an Industrial Surgeons' Association to be affiliated with the Chicago Medical Society is contemplated. Dr. George D. J. Griffin is temporary chairman, and Dr. Horace C. Lyman, temporary secretary of the new organization.

Tuberculosis Society Meeting.—The thirty-ninth meeting of the Robert Koch Society for the Study of Tuberculosis will be held at the City Club, April 19, at 8 o'clock, when Dr. Lawrason Brown of the Trudeau Sanatorium, Saranac Lake, N. Y., will read a paper on "The Diagnosis of Intestinal Tuberculosis." A dinner will be given Dr. Brown at 6:30, at the City Club.

Institute of Medicine.—At the meeting of the Institute of Medicine of Chicago, April 16, at the City Club, Prof. R. A. Millikan, professor of physics at the University of Chicago, one of the most active experimentalists in the field of electron research and vice chairman of the National Research Council during the World War, presented a paper on "Twentieth Century Contributions to Our Knowledge of the Atom."—From a source that for the present must remain unknown, the sum of \$250 annually has been offered to the Institute of Medicine of Chicago for an annual lecture to be known as the Pasteur Lecture.

Joint Meetings.—The Chicago Medical and the Chicago Urological societies, met in joint session April 14, when papers were presented by Dr. Irvin S. Koll on "Urinary Calculi"; by Dr. Robert H. Herbst and Alvin Thompson on "Vasotomy," a lantern slide demonstration of technic; by Dr. Louis E. Schmidt, on "Streptococcus Infection in Urology"; and by Drs. Gustav Kolischer and Joseph Eisenstaedt on "Unilateral Nephritis."—A joint meeting of the Chicago Neurological and Chicago Pathological societies was held April 12 at which Dr. Fred T. Rogers of the University of Chicago presented a paper on "The Relations Between Arterial Blood Pressure, Heat Regulation and the Cerebral Hemisphere"; Dr. G. W. Bartelmez of the University of Chicago, one on "The Morphology of the Synapse in Vertebrates," and Dr. S. Walter Ranson of Northwestern University Medical School, one on "Studies on the Sympathetic Nervous System."

INDIANA

Personal.—At the annual banquet of the Military Order of Foreign Wars held in Indianapolis, April 6, Col. Carleton B. McCulloch was elected surgeon, and Lieut. Morris G. Fuller, secretary; the latter succeeds Major Frank W. Foxworthy, resigned after fifteen years' service.

New Building for Sanatorium.—Sunnyside, the Marion County institution for the treatment of tuberculosis, located near Indianapolis, has been given \$350,000 by the county council to be used in the construction of new buildings. An infirmary with a capacity of seventy-five patients, a children's cottage of a forty-five bed capacity, and a superintendent's residence will be built. Work is to begin at once. Several months ago \$100,000 was appropriated for a service building and a power house, and these buildings are now nearing completion.

Epileptics in Indiana.—The board of state charities reports that there are at present 1,020 epileptics in the various public institutions of the state: in the five state hospitals for the insane, 266; schools for feeble-minded youth, 212; village for epileptics, 371, and in county poor asylums, 171. Of the total number, 366 are insane, 548 feeble-minded and 106 without marked mental deficiency. Men and boys number 602, and women and girls, 418. The epileptics are thus classified by ages: under 16 years old, 72; from 16 to 45, 617, and over 45 years, 331. Eighty-five of the ninety-two counties are represented at the village for epileptics. According to estimates there are 4,123 epileptics in Indiana, and of this number about 25 per cent. are receiving proper care from the state.

MAINE

Health Union Organized.—The first health union to be formed in the state has just been organized by the towns of Milford, Old Town, Bradley, Orono and Veazie under the name of the Motbov Health Union. A committee of six, two from Old Town and one from each of the other towns, conducts the affairs of the union, and a full-time health officer has been appointed. The organization of this health union is unique in Maine health history, for though such cities as Portland, Lewiston, Auburn and Bath employ full-time health officers, and the little town of York, unassisted except by the state appropriation of \$800 also supports a full-time officer, no attempt has previously been made to create a union of towns.

MASSACHUSETTS

Course in Early Diagnosis of Tuberculosis.—A course in the early diagnosis of pulmonary tuberculosis and methods of treatment will be given under the auspices of the Wachusett Medical Improvement Society at the Rutland State Sanatorium. Lectures will begin Thursday, May 20, and continue Thursday of each week until June 24. Those giving lectures include Drs. George N. Lapham, Rutland; Bayard T. Crane, Rutland, and these members of the sanatorium staff: Drs. Ernest B. Emerson, Rutland, superintendent; Leon A. Alley, Rutland, assistant superintendent; David E. Mann, Rutland; Halbert C. Hubbard, Auburn; William B. Davidson, Pawtucket, R. I., and Mary E. Gaffney, Providence, R. I. The object is to promote early diagnosis and control of pulmonary cases. The course will be open to all physicians. The facilities at Rutland are ample for illustrating any phase of the subject. There will be no charge for tuition. For further information address Dr. Ransom A. Race, secretary, Paxton, Mass.

MICHIGAN

Personal.—Dr. Don M. Griswold, Detroit, director of the medical service for the Detroit City Board of Health and professor of hygiene and preventive medicine at the Detroit College of Medicine and Surgery, has been appointed professor of hygiene and preventive medicine in the State University of Iowa, Iowa City, and state epidemiologist, succeeding Dr. Edward G. Birge, deceased.—At the last meeting of the Institute of Medicine of Chicago, Dr. Victor C. Vaughan, Ann Arbor, was elected an honorary fellow.

MISSISSIPPI

Murderer of Physician Sentenced.—A verdict of guilty as charged and carrying the death penalty was brought in by a jury, March 27, against Jesse S. Watts, charged with the murder of Dr. D. S. Alverson, Vicksburg.

State Gets Vicksburg Hospital.—The mayor of Vicksburg has been authorized to sign a resolution by which the Vicksburg Hospital may be conveyed to the state with the provision that when the state abandons the use of the property as a hospital the property shall revert to the city.

Women in Social Hygiene Campaign.—The United States Public Health Service cooperating with the state board of health has procured the services of Drs. Lenna L. Meanes, Des Moines, Iowa; Bessie Florence L. Meredith, Watertown, Mass.; Hannah Morris, West Chester, Pa., and Jeanette H. Sherman, Ridley Park, Pa., who have been employed by the Y. W. C. A., and have had experience in social hygiene work in the eastern and central states. They will come to Mississippi for a series of lectures and conferences with the object of awakening the women and girls of the state to a realization of their responsibility and power for improving social conditions, and raising standards of health in their own communities, to put the facts before them and to help them to organize for definite action in fighting disease by advancing health through health education, and supervised recreation.

MISSOURI

New Officers.—Howard County Medical Society at its annual meeting held in Glasgow, March 19, elected the following officers: Dr. Elbert King, New Franklin, president; Dr. W. E. Williams, Fayette, and Walter M. Dickerson, Armstrong, vice presidents, and Dr. Charles W. Watts, Fayette, secretary-treasurer.

Personal.—Dr. Ross A. Woolsey, St. Louis, has been appointed chief surgeon for the St. Louis and San Francisco

system, succeeding Dr. George W. Cale, Jr., resigned. Dr. Woolsey has been first house surgeon for the Frisco system for the last eight years.—Dr. Karl E. Baker, Carthage, has been appointed state commissioner of health for Jasper County.

NEW JERSEY

Personal.—Dr. Marcus W. Newcomb, Brown's Mills, has been elected superintendent of the Burlington County Sanatorium for tuberculosis.

Newark Physicians Attack Volstead Act.—At a conference between the mayor and physicians of Newark, it was decided to oppose the Volstead act which limits the prescription of liquor in the treatment of illness.

Illegal Practitioners Prosecuted.—James Baker, Atlantic City, and Thomas G. DiSanti have been convicted under the New Jersey Medical Practice Act of practicing medicine without licenses. Each paid the penalty of \$200 and costs.—Minnie Usserow, Passaic, a licensed midwife, was found guilty of practicing medicine without a license and fined \$200 and costs.

Smallpox in Belleville.—On account of the prevalence of smallpox in Belleville, all churches, motion picture theaters, and places of public assembly were ordered closed. Up to the present time, there have been thirty-four cases of smallpox reported. Fifteen of the patients are in the County Isolation Hospital, Soho, and the remainder are under quarantine in their own homes.

Oppose Medical Bills.—Representatives of the Medical Society of the State of New Jersey met with the senate public health committee, March 22, to voice their protests against the new chiropractic law and the Hyland bill, which allows osteopaths to practice medicine and surgery without educational qualifications equivalent to those required of physicians, against the senate bill which provides for drugless therapists, and the bill which requires physicians to register annually. The physicians favor the senate bill to put all practitioners under the control of the State Board of Medical Examiners, and the certified milk bill, which will give the state control over certified milk for the use of children.

NEW YORK

After-Care Sanatorium for Poliomyelitis.—Public spirited people in Ithaca, Hornell, Corning, Cortland and Bath have taken action to secure quarters in Ithaca for a permanent sanatorium for the after-care of those who have had poliomyelitis.

Lake Keuka Physicians Meet.—The twenty-first annual meeting of the Lake Keuka Medical and Surgical Association will be held at Keuka College, Keuka Park, July 29 and 30, under the presidency of Dr. Alfred W. Armstrong, Canandaigua.

County Laboratory in Amsterdam City Hospital.—The Montgomery County Laboratory is to be established in the Amsterdam City Hospital. Alterations are being made in the hospital building for the purpose of providing suitable housing accommodations for this new laboratory.

Personal.—Dr. Fred M. Meader, director of the division of communicable diseases of the New York State Department of Health, has been granted an indefinite leave of absence in order to accept an appointment as surgeon in the U. S. Public Health Service. Before entering the service he will be associate in epidemiology in the School of Hygiene and Public Health, Johns Hopkins University, for the remainder of the collegiate year.—Dr. Ralph E. Robinson, Nunda, has been appointed to the state laboratory staff.

Protects Public Against Fake Remedies.—The village of Athens has incorporated into its sanitary code a regulation providing that no corporation, association, firm or individual other than licensed pharmacists and physicians shall sell or offer for sale in the village of Athens any medicine or so-called remedies, or any so-called medical appliances, unless before offering their commodities for sale they shall receive a permit from the local health officer. Any wilful violation of this regulation is punishable by a fine of \$50 for each offense.

Child Welfare Laws.—On the recommendation of the conference on child welfare held in Albany last October, a bill has been introduced in the state legislature proposing a commission for the codification and unification of the laws relat-

ing to the protection of children. The commission will investigate the operation and effect of all laws affecting children, ascertain any overlapping and duplication, and will recommend to the legislature such remedial legislation as may appear necessary for unification of the laws and concentration of agencies dealing with child welfare.

The Cotto Bill.—Senator S. A. Cotto has introduced a bill into the New York legislature regulating the prescription and sale of narcotic drugs. This bill is modeled on the federal law and does away with the necessity of becoming familiar with two sets of regulations. All the druggist has to do is to be familiar with the Harrison law and the Treasury regulations. The only exception is that the bill does provide for triplicate state order forms to be used in the purchase of narcotic drugs and regulations as to the use of these forms. These regulations will be printed on the back of these forms. The bill does away with special state requirements as to records and reports and with the special state registration of druggists, state certificates and state registration fees. The house of delegates of the Medical Society of the State of New York has approved the measure.

New York City

Personal.—Dr. Harry Plotz, Brooklyn, has been sent to Poland by the joint distribution committee of the American Jewish Relief Funds to combat the typhus plague there.—Dr. T. Mitchell Prudden has been reappointed a member of the public health council of the New York State Department of Health.

Convalescent Camps for Soldiers.—The New York Community Service announces that arrangements have been made for the establishment of summer camps at Bear Mountain and Fire Island for the benefit of convalescent service men and other former soldiers and sailors who are taking vocational training in New York City.

Many Vacancies in Health Department.—The work of the health department is said to be seriously crippled by the many resignations that have been handed in during the past six months. From July 1 to Dec. 1, 1919, there were 233 resignations, an average of one person a day. Most of these employees have resigned because they could command higher salaries elsewhere.

Organizations Unite to Fight Tuberculosis.—Various organizations in this city interested in fighting tuberculosis met at the New York Academy of Medicine, April 7, and decided to pool their intelligence, experience and equipment in order to carry on an intensive educational campaign against tuberculosis. They propose to make a survey of the city and establish auxiliaries in every existing clinic. Dr. T. L. Lloyd, vice chairman of the auxiliaries in the Brooklyn district, presided at the meeting. When the work of these various organizations is coordinated, duplication of effort will disappear and there will be a standardization of methods both in the handling of cases and in the after-care.

Formation of Caduceus Post of the American Legion.—On April 6 an amalgamation of the Medical Department Post of New York and of the Harry D. Gill Post of the American Legion took place in New York City. The great majority of the members are physicians. It has been decided to solicit other physicians to join this Post, either as regular or associate members (the latter applies to those who are active members of other posts). The following officers have been elected: president, Howard Fox; vice presidents, Harlow Brooks, George E. Maurer and Graeme M. Hammond; secretary, Samuel Bradbury; treasurer, William F. Cunningham, and county delegates, Harlow Brooks and Charles J. Imperatori.

NORTH CAROLINA

Failed to File Birth Certificate.—For failure to comply with provisions of the state vital statistics law by refusing to file birth certificates, Dr. Henderson Irwin, Eureka, is said to have been convicted in the local court of Fremont, March 15, on two counts and fined \$15 in addition to the costs of \$7.50.

Health Officers to Meet.—The tenth annual meeting of the North Carolina Health Officers Association will be held at Charlotte, April 19, jointly with the meetings of the state medical society and the state hospital association, under the presidency of Dr. Everett F. Long, Lexington, the subject of whose address will be "Coordination of Health Work—Intra-Governmental and Extra-Governmental."

State Medical Society Meeting.—The sixty-seventh annual meeting of the Medical Society of the State of North Caro-

lina will be held in Charlotte, April 19 and 20, under the presidency of Dr. Carl V. Reynolds, Asheville. Dr. Watson S. Rankin, Raleigh, will deliver an address on "State Medicine"; Dr. Benjamin S. Warren, Washington, D. C., will speak on "Social Insurance," and Dr. William L. Clark, Philadelphia, will give an illustrated lecture on the "Treatment of Malignant Disease."

OHIO

Lima Entertains Physicians.—Physicians within a radius of 50 miles of Lima attended the medical and surgical clinics held at St. Rita's Hospital, Lima, April 6. Dr. Dean D. Lewis, Chicago, spoke at the evening session.

Filtration Plants to Be Constructed.—It has been decided to build water filtration plants at Delaware, Greenfield, Eaton and Fremont. Plants at Shelby, Wadsworth and Ashland are nearing completion. Contracts will soon be completed at Delaware and Wauseon.

Collaborating Epidemiologists Appointed.—The U. S. Public Health Service has appointed 140 health commissioners of Ohio as assistant collaborating epidemiologists. This appointment gives them the privilege of using frank mail for their morbidity reports.

Personal.—Dr. Orrillus M. Corson, state Americanization director, Columbus, has resigned on account of ill health.—Dr. Albert H. Haworth, West Milton, has been appointed full-time health officer of Miami County, excepting the cities of Piqua and Troy.—Dr. Charles G. Augustus, health commissioner of Springfield for three years, has resigned.—Dr. Henry J. S. Dickson, Mechanicsburg, has been appointed full-time health commissioner of Champaign County.

Public Health Nurses.—There are at present 405 public health nurses that work in the state, not including nurses employed in industrial plants. This gives one public health nurse to every 14,320 population. Of the eighty-six counties of the state, thirty-three have, as yet, no nursing service. Twelve city and ten county boards of health now employ a total of seventeen nurses; city boards of education employ twelve, and one county board has a nurse. Altogether school boards are employing fifty-nine nurses.

SOUTH CAROLINA

New Medical Practice Act.—A new medical practice act was passed by the South Carolina legislature and was approved by the governor on March 10. The principal changes brought about by this act are: (a) The board is empowered to recognize certificates issued by the National Board of Medical Examiners. (b) The time fixed for the annual meeting of the board was changed from the second to the fourth Tuesday of June. (c) The registration fee was raised from \$10 to \$25. (d) It is clearly specified that practitioners of various forms of healing shall be required to take the same examination as regular physicians except in materia medica, major surgery, therapeutics and practice and must exhibit a diploma from a college approved by the board.

TEXAS

South Texas Physicians Meet.—The forty-seventh annual meeting of the South Texas District Medical Association was held in Beaumont, March 25 and 26, under the presidency of Dr. Claude C. Cody, Jr., Houston. Victoria was selected as the place for the fall meeting.

WISCONSIN

Personal.—Dr. Herbert G. Lampson, Washburn, superintendent of the Nopeming Sanatorium, Duluth, has been appointed county physician of St. Louis County.

Fire in Hospital.—Fire of unknown origin destroyed the hospital and home of Dr. Ernest G. Ovitz, at Laona, March 1. The patients were removed without casualty, and the loss is estimated at \$20,000, partially covered by insurance.

CANADA

Aesculapian Club Officers.—Dr. David J. Gibbs Wishart has been elected president of the Aesculapian Club, Toronto; Dr. Alexander Primrose, C.B., vice president; Dr. Edmund E. King, treasurer (reelected), and Dr. Frederick C. Harrison, secretary.

Liquor Prescriptions.—The chairman of the Board of License Commissioners of Ontario has informed a committee

of the legislature that 80 per cent. of Ontario physicians write less than ten prescriptions for liquor in a month, and that it is the balance of from 10 to 20 per cent. who are the "official bar-tenders" of the province. That would mean that the bulk of the liquor prescriptions is issued by from 350 to 700 men.

Druggists Protest.—Prohibitions in the bill to amend the Canadian opium and drug act now before the House of Commons brought to Ottawa a large delegation of druggists last week. They object to the provisions of the bill which prevent their selling certain mixtures containing small but necessary quantities of opium, morphin and other narcotics unless under a medical prescription. They seek an amendment so that they may sell cough mixtures, etc., as they have always done without doctors' prescriptions.

Hospital News.—At a meeting called by the Canadian National Committee on Mental Hygiene in Toronto a few days ago, resolutions were passed favoring the establishment of the proposed new Reception Hospital for Toronto, contiguous to the University of Toronto and the Toronto General Hospital. Last year fifty-four mental cases were sent to the hospital for the insane after passing through the hands of the police.—The establishment of a general hospital for the border towns near the Detroit River is being agitated. It is likely that it will be established at Windsor, Ont.

Personal.—Sir Thomas G. Roddick, Montreal, and wife have returned after spending the winter in Florida.—Dr. Newtown A. Powell, Toronto, is president, and Dr. John N. E. Brown, Toronto, is secretary of the Chengtu Medico-Dental College Project in Canada.—Dr. David Fuller McKinley, C. A. M. C., formerly of West China, has commenced practice in Toronto.—Dr. John L. Todd of McGill University, with Dr. Simeon B. Wolbach of Harvard Medical School, has gone to Poland to study typhus fever. They are working under the Red Cross.—A banquet was recently tendered to Dr. George A. J. Glionna, Italian consul in Toronto, for his patriotic work among Italians there during the war.—Dr. Charles J. Copp, Toronto, was recently presented with a gold watch and chain for his work in connection with the St. John Ambulance Brigade of which he is assistant commissioner in Toronto.—Dr. James Beatty, Toronto, has been appointed pathologist of the General Hospital, Regina, Saskatchewan.—Dr. Russell L. Parr, Toronto, formerly captain in the department of soldiers' civil reestablishment, accused of defrauding the Canadian government of \$2,500, has been acquitted.—Dr. Edgar C. Barnes, for fifteen years assistant medical superintendent at the Homewood Sanitarium, Guelph, Ont., has been appointed medical superintendent of the hospital for mental diseases at Selkirk, Man.

GENERAL

Medical Book Plates Wanted.—THE JOURNAL will be glad to receive copies of the book plates of physicians, for use in a review of the subject. Copies of the book plates of noted physicians, now dead, will be especially appreciated. Mark envelop "BOOK PLATE."

Gift to College of Surgeons.—The Carnegie Corporation has given to the American College of Surgeons \$75,000 to be used for hospital standardization. Four years ago, it made a gift of \$30,000 for the same purpose, making a total of \$105,000, this amount being supplemented by funds of the college.

Conference Regarding Service Men.—The committee representing welfare agencies for disabled former service men of Indiana, Kentucky and Ohio held a meeting in Indianapolis, April 10, at which Dr. Thomas B. Victor Keene, Indianapolis, chairman of the hospitalization committee, and Dr. Henry Kennon Dunham, Cincinnati, chairman of the education committee, made their reports.

Legislature to Permit Transmission Through Mails of Poisons.—The House of Representatives has passed the bill permitting the transmission of poisons, medical or chemical compositions, through the mails, under regulations prescribed by the Post Office Department. The bill permits manufacturers or dealers in such products to transmit them to licensed physicians, surgeons, pharmacists and druggists.

Gift to Post Graduate Hospital Endowment Fund.—The New York Post Graduate Medical School and Hospital reports a gift of \$100,000 from Mrs. Henry R. Rea of Pittsburgh toward the endowment fund of \$2,000,000 which the

institution is striving to raise. It is reported, also, that Mr. James C. Brady of New York has given \$50,000 toward the first million and has pledged \$125,000 toward the second million. Mr. Vincent Astor has given \$50,000 toward the first million and an additional \$75,000 toward the second million.

Examination for Canal Service Physician.—The United States Civil Service Commission announces an open competitive examination for physician, Panama Canal service, May 5 and July 7, at various places throughout the United States. The entrance salary is \$200 a month with promotion to \$300 or higher for special positions. Both men and women are eligible. They must be unmarried, must be graduates of a recognized medical school, and must have had at least one year's graduate hospital experience. Application should be made to the Civil Service Commissioner, Washington, D. C., or the secretary of the local United States Civil Service Board.

Centenary of Medical Missions.—The centenary of medical missions was celebrated generally throughout the United States from March 28 to 31, and at the same time observance was made of the fiftieth anniversary of the work of the first woman missionary. The pioneer medical missionary was Dr. John Scudder, who went to Ceylon in March, 1820, and the pioneer woman medical missionary was Dr. Clara Swain, who went to India in 1870. It was pointed out that forty-eight members of Dr. Scudder's family followed him into the mission field and that three of the fourth Scudder generation had just gone to begin their life work in India. At present there are about 1,100 medical missionaries working in 702 hospitals and 1,156 dispensaries.

Bequests and Donations.—The following bequests and donations have recently been announced:

Hospital for Sick Children, Toronto, Ont., \$1,000 to endow the McRoberts' cot, by the will of Mrs. Ruth McRoberts.

Philadelphia Orthopedic Hospital a bequest of \$5,000 from the residuary principal of the estate of Mrs. John M. Walton to establish a free bed in memory of her husband.

American Red Cross and St. Luke's Hospital, New York City, chief eventual legatees of the estate of James A. Scrymser, appraised at \$2,923,040 to become operative on the death of his widow.

Chengtu Medico-Dental College Project in Canada, \$7,500 by the will of Dr. Richard A. Reeve, Toronto.

St. Vincent's Hospital, New York City, \$100,000; Cancer Hospital, New York City; Industrial Home for the Blind, Brooklyn, and Brooklyn Hospital, each \$25,000; Brooklyn Home for Consumptives, \$20,000, by the will of Daniel G. Carroll.

FOREIGN

Medical Journal's Personally Conducted Tour to Paris.—A Spanish medical journal, the *España Médica* of Madrid, has organized a tourist party for its subscribers, with the collaboration of a tourist agency for the trip, and of the dean of the Paris Faculté de médecine for the scientific side of the trip. The expense for the twelve days is 750 pesetas. Three days are to be spent inspecting the devastated regions from Verdun to Reims. The journal states that if it were not for the prevailing rates of exchange the price of such a trip would be prohibitive at present.

Fourteenth French Medical Congress.—The Association of French-Speaking Physicians invites physicians to attend the Fourteenth Congrès français de médecine to open at Brussels, May 19, 1920. The first of the three topics to be discussed—syphilis of the cardiovascular apparatus—is to be presented by Bayet of Brussels, Etienne and Spillmann of Nancy, and Vaquez and Laubry of Paris. The second—lipoids in pathology—will be presented by Chauffard, Laroche and Grigaut of Paris, Linossier of Vichy, and Zunz of Brussels. The therapeutic value of artificial pneumothorax will be discussed by Burnand of Leysin, Küss of Agincourt, and others with much experience. The fee is 40 francs for non-members of the association.

Pan-Hellenic Congress of Hygiene.—The *Grèce médicale* announces that the long planned Congress for Hygiene and Demography is now organized to convene at Athens, April 25 to 30, 1921, the week of the celebration of the centennial of the independence of Greece. There are to be six sections, and membership is open to all interested in public and private hygiene, welfare work, and similar great social questions. The fee is 15 francs for regular members and 10 francs for associates. In connection with the congress there will be an international exhibition to remain open for two months. Prof. G. Phocas is chairman of the committee of organization of the congress, and the secretary is Prof. P. J. Rondopoulo, 14 rue Nikifouro, Athens, Greece.

Government Commissions in the Netherlands for Investigation of the Treatment of the Sick by the Unqualified.—THE JOURNAL described about a year ago the report of the medical commission appointed by the state in the Netherlands in 1915 to study the methods and practices of various cults. After exhaustive investigation the report presented concrete evidence that no essential benefit resulted from any of the methods and in some instances actual harm was done. A commission of eminent jurists was appointed at the same time. They have taken three years to prepare their report, and it has just been presented. The editor of the *Nederlandsch Tijdschrift voor Geneeskunde*, Prof. G. van Rijnberk, publishes their report with comment. The lawyers in their preamble state that their advice was asked only in the matter of suggesting modifications in the law, and not whether it is desirable to make such modifications. Consequently, they say, the report does not express any personal opinion of the jurists in this matter, but is restricted to the legal wording of the modifications to admit the unqualified to practice.

Friedmann in the Limelight Again.—The German medical journals for the last few months have been much exercised over the way in which the Kultusminister K. Haenisch (minister of public instruction), and the Prussian general assembly have been promoting Friedmann's "Preventive and Cure for Tuberculosis." Friedmann has been appointed professor extraordinary (without any consultation with the medical faculty), and part of a military hospital has been placed at his disposal for treatment of the tuberculous and to train students in the method. Nearly every German journal contains some report of experiences with the "Cure." Some of the writers complain that Friedmann insists on selecting the patients to be allowed the treatment, and refuses to let any other measures be applied with it. The *Nederlandsch Tijdschrift voor Geneeskunde* of Amsterdam quotes this same Minister Haenisch, speaking in the lower house two years ago, when he cited the Friedmann remedy as an example of "an arrant humbug which has the advantage that the inventor in the meanwhile has become a rich man." Our Netherlands exchange adds, "The psychanalysis of this change of view on the part of the minister of public instruction might be worth studying out." The *Deutsche medizinische Wochenschrift* for Dec. 18, 1919, referred to the matter as showing the lamentable way in which internal politics is encroaching on the domain of science, saying, "Even the sharpest critic of things as they used to be will have to admit, if he is truthful, that a minister of public instruction in former times would not have retained his position for one hour after delivering such a speech as Haenisch's recent speech, followed by the 'interview' in the evening paper (Haenisch and Friedmann's *Moniteur*)." It quotes further the *Medizinische Klinik* that it is "hard indeed that at a time when Germany is so impoverished in worldly goods, such action should threaten to lower the prestige of German science." The Prussian general assembly has recently voted to appoint a representative commission to test the remedy. It was said at first that no one who had previously tried the remedy should be on this commission but this principle was not adhered to. Twenty members were first appointed, mostly leading members of the profession, but others have been added later, including Friedmann himself, Prof. Kruse, who has charge of the bacteriologic control of the preparation of the remedy, Dührssen, an ardent advocate, and others. The *Deutsche medizinische Wochenschrift* comments that the handing over of the hospital to Friedmann and empowering him to train medical students in the method of treatment—before the commission has made any report on the value of the "cure"—"must be regarded as another one of the many inconsistencies from which the people is now suffering so much. . . . However, it was a favorable turn of fate that Friedmann did not succeed in his desire to have the Kaiser-Wilhelms-Akademie placed at his disposal, notwithstanding the efforts of Haenisch, Scheidemann and his other backers (gönner)." Another instance of what the *Deutsche medizinische Wochenschrift* calls the "hitherto unknown by-effects of a method of treatment," is a suit for damages brought by the editor of the *Münchener medizinische Wochenschrift* against another editor, Dr. Bachmann, of the *Biologische Medizin*, who had accused the former of "suppressing the free expression of opinion" by rejecting certain articles sent in for publication. The *Deutsche medizinische Wochenschrift* remarks that this lawsuit is a grateful opportunity to show the courts the absurdity of this complaint. The entire chorus of the "suppressed" will be presented to the judge.

LATIN AMERICA

Personal.—Dr. Rafael Otamendi of Caracas, Venezuela, has arrived in New York accompanied by his wife.—Dr. Rafael Medina y P., Quito, Ecuador, has arrived in New York on his way to France.

Experimental Hygiene at Montevideo.—The *Brazil Medico* states that the congress of Uruguay appropriated funds recently for the organization of an institute for experimental hygiene at Montevideo.

Plague at Curityba.—Some dead rats having been found in a certain quarter of Curityba, they were examined for plague bacilli with positive results, and the governor of the state telegraphed at once to the chief of the national public health service asking that a sanitary brigade be sent there at once before any clinical cases of plague develop.

Monument to Dr. Núñez.—The building of the monument to Dr. Enrique Núñez, former secretary of sanitation of Cuba, for which a fund of \$12,000 has been collected, will begin soon. The monument will be built at the entrance of the hospital, Calixto García, and it is expected that it will be unveiled on September 15, which is the fifth anniversary of Dr. Núñez' death.

American Physician Needed in Chihuahua.—Mr. Emmet W. White of the insular and foreign division of the American Red Cross has received a letter from the American consul at Chihuahua stating that the only foreign physicians in Chihuahua, one American and one Englishman, have died this year, and that there is an opportunity for an American physician, especially one who speaks Spanish. The American consul will be glad to correspond with any one who might consider locating there.

Riots Among Medical Students in Argentina.—The conflict between the professors and the students of the University of La Plata, reached its climax recently, when the medical students provided themselves with revolvers and opened fire on the school, killing one of the students, who was taking his examination at the time. A number of the students were arrested by the police. The University of La Plata is one of the three national universities, in addition to the two state colleges, and was the last organized of those existing in the country.

"Prophylaxia Rural."—This is the official name of the service that has been undertaken on a large scale in Brazil to carry the campaign against malaria, helminthiasis, etc., into the rural districts. The *Brazil Medico* is publishing the reports from different stations as they have been established. In one week recently, at one of these stations 1,284 persons were examined and 65.9 per cent. were found to have malaria or other chronic disease. At another station 94.11 per cent. were found infested with helminths and 1,186 persons were given treatment during January.

Deaths in the Profession.—Dr. L. R. Cassinelli, founder of the Cassinelli Sanatorium at Buenos Aires, and physician to the Hospital San Roque.—Dr. R. Leal de Sá Pereira of S. Paulo.—Dr. O. Vieira de Britto of Bello-Horizonte, president of the city council.—Dr. Rivadavia Correa, senator from his state, Rio Grande del Sul, and long leader in the movement for raising the standards and equipment of the medical schools of Brazil.—Dr. J. Maceo Chamorro, at Puerto Padre, where he was chief of the local public health service, one of the oldest physicians of Cuba.

Mexican Commission in the United States.—Drs. Edmundo Aragón, secretary of the Department of Health of Mexico, and Nicolás Amerena, director of the diagnostic laboratory of the same department, are being sent to the United States in order to secure cultures of plague, yellow fever, typhoid fever, cholera, pneumonia and all other infectious diseases, the etiologic agents of which are known. It seems that cultures of micro-organisms lose their virulence very soon in Mexico, and it is necessary to replace the supply quite often. While in the United States, Drs. Aragón and Amerena also intend to purchase a collection of wax models, showing different aspects of the most common diseases. They expect to visit New York, Washington, Chicago and New Orleans, inspecting at the latter city the methods of ship disinfection in force.

CORRECTION

Wrong Price Published in Advertisement of Oxford University Press.—In the advertisement of the Oxford University Press, published in THE JOURNAL for April 10, through an error, the Oxford Loose-Leaf Medicine was quoted at \$52.50. It should have read \$62.50.

Government Services

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS
Bloomington—Howell, H. L.
Metropolis—Thane, B.

KANSAS
Atchison—Connor, S. W.

MASSACHUSETTS
Boston—Gaetani, A. L.

NEW YORK
Brooklyn—Ruger, G. W.
Fair Haven—Griggs, L. H.

Health Conditions of the Army

For the week ending April 2, progressive improvement in the health conditions among the troops is shown by the continued decrease in the admission and noneffective rates. There is a slight increase in the number of new cases of measles, scarlet fever, malaria, diphtheria and pneumonia, although none of these diseases are epidemic at any camp or station. As a whole, the report for the week shows the number of new cases of epidemic diseases to be about as low as could be expected. There were eighteen deaths from disease reported during the week: tuberculosis was reported to have caused seven and pneumonia four. Among the American forces in Germany the health conditions continue satisfactory.

Public Health Service Presents Building Requirements

The Public Health Service has presented to the Committee on Public Buildings and Grounds of the House of Representatives an analysis of prospective hospital building requirements for ex-service men. Twenty-five million dollars is asked for construction or purchase of necessary hospital buildings, \$15,000,000 of which shall be expended during the present year. These building requirements of the Public Health Service are based on the report of the chief medical adviser of the War Risk Insurance Bureau. This report indicates that the Public Health Service will be required to take care of 30,000 patients during the ensuing year. These patients are classified as: general, medical and surgical, 7,200; tuberculosis, 12,400, and neuropsychiatric, 11,000, a total of 30,600. The hospital building needs of the Public Health Service are most urgent, and the Committee on Public Buildings will at once determine the amount of money which will be appropriated for this work.

Army Hospital Internship

The Surgeon-General of the Army announces that internships of one year in some of the large general hospitals of the Army are opened to medical students and graduates of Class A medical schools who obtain a high standing and are indorsed by the medical school authorities. Satisfactory completion of the year in the Army General Hospital will be accepted as qualifying for commission in this regular Army Medical Corps without further professional examination.

The status of the intern is that of a civilian, and the pay is \$60 a month with quarters and rations.

The general hospitals of the Army are organized into three services: medical, including psychiatric and contagious diseases; surgical, including eye, ear, nose and throat, venereal, gynecologic, obstetric and the roentgen-ray service; laboratory, including clinical microscopy, pathology, serology, bacteriology and chemistry. Some of the medical schools requiring the fifth or hospital year for a diploma have already agreed to accept the hospital year in the Army general hospitals as the equivalent of their hospital year, and it is expected that state boards requiring hospital experience as a requisite for license will likewise accept that obtained in the Army. Applications for this internship should be made by letter direct to the Surgeon-General and give the following information: full name; present address; home address; birth place (if foreign, state whether a citizen of the United States); date of birth; education before entering medical school; medical school attended; date of graduation or prospective graduation, and statement of any physical defect that might disqualify applicant in physical examination.

A circular of information will be sent on application to the Surgeon-General's Office. A similar circular is in the possession of each state medical examining board.

Foreign Letters

BELGIUM

March 25, 1920.

The Medical Press

The great difficulties with which all Belgian industries are struggling seriously impede national reconstruction. The mining and metallurgic industries have been able to overcome obstacles which seemed insurmountable, despite repeated strikes, which were on the whole of short duration, and these industries are now again beginning to assume their customary place in the business world. The shortage of manual labor and the repeated strikes have not assumed such proportions that they would have proved fatal to the prosperity of Belgium. Strictly speaking, there is no prosperity in Belgium, but after the cataclysm which burst over the whole nation, one can be deemed fortunate to witness the present renaissance under conditions which can be considered favorable. This hopeful outlook does not altogether apply in regard to the medical press. In those countries in which scientific publications are not published directly through liberal subsidies from an official department, or where they are not equally as firmly established as in a great country like the United States, the shortage of necessities and the mounting cost of labor exert a very acute influence on the fortunes of scientific periodicals.

PRINTERS' STRIKE

A recent strike of the printers of Liège, which has just barely been settled, interrupted the publication of many periodicals for from three to four months. In the same way, the book industry has been seriously affected. If one adds to this the difficulty of procuring paper, one will readily understand that it is not always easy to guarantee uninterrupted appearance of many periodicals. Furthermore, new difficulties have lately surrounded the manufacture of paper. The decline of exchange does not permit Belgian printers to obtain the necessary supplies abroad, especially in Holland. In Germany, the exportation of wood and paper has been prohibited. France has smaller reserves than our own. Under these circumstances, we are obliged to be content with what little paper we manufacture. The supply does not equal the demand—far from it—and the costs of manufacture have increased almost tenfold as compared with prewar figures.

BIOLOGIC PUBLICATIONS

It is not surprising, therefore, that the purely scientific reviews appear at long intervals. The *Archives de biologie*, which publishes the more important works of the laboratories under the editorial supervision of Professor Brachet of the faculty of medicine of Brussels, is among those suspended for more than four months. The same is true of the *Archives de physiologie*, edited by Professor Fredericq of the faculty of medicine of Liège, which was affected by the same strike. The *Archives de pharmacodynamie*, under the editorship of Professor Heyman of the faculty of medicine of Ghent, has issued only two or three numbers since the armistice. The *Archives internationales de médecine légale*, founded by Professor Lorin of Liège—who died in March, 1919, leaving unfinished a whole series of excellent works—has not resumed publication.

The *Académie royale de médecine* alone continues, sometimes with considerable delay, publication of the reports which are deposited with its bureau and are accepted after examination. These must always be original contributions, as they deal almost exclusively with such phases of general biology as are not of direct interest to the medical practitioner. The latter has at his disposal the local weekly jour-

nals, publication of which has now become more regular. It should not be forgotten, moreover, that almost every physician subscribes for one of the large French weeklies, such as *Presse médicale*, *Paris médical*, and *Journal des praticiens*. Besides these reviews, which circulate through almost the whole of Belgium, as well as the Flemish section, there are many local journals

BELGIAN MEDICAL PUBLICATIONS

Le Scalpel is issued at Brussels. Before the war, *Le Scalpel et Liège médical*, combined, was published at Liège as a purely local review. At the beginning of 1919, the editorial staff was divided: some tried to give the journal a national character, and by shunning excessive provincialism they hoped to make *Le Scalpel* the official organ of the Belgian medical federation. This attempt was only partially successful, and *Le Scalpel* has become more especially a sectional organ for the central part of Belgium. Besides this, *Liège médical* has reappeared. Its debut was inauspicious, for the first number had hardly been issued when the strike interrupted publication for a considerable time. Despite the setback, however, its success seems assured, and several numbers which have since appeared are not lacking in interest. Both of these are weekly periodicals, devoted primarily to papers of immediate practical value, not long contributions, but mainly clinical notes and articles on general medicine. In addition, they frequently publish notes of interest to the medical profession, some society proceedings and medical news items.

Besides these two journals, the *Revue médicale de Louvain* remains the organ of the Catholic school. It has a purely didactic aim and continues to impart to the former pupils of the faculty the teachings which they received at their alma mater. It publishes, finally, the lectures of the professors of the faculty.

Ghent also has its medical bulletin, the *mémoires de la Société de médecine*, which records the papers and discussions of this society.

The *Archives médicales belges* is one of the most important medical journals of Belgium. Before the war, it was issued in a smaller format. The war, which had interrupted its publication, was instrumental in its revival at the battle front itself, where, after Jan. 1, 1917, there were brought together the most diverse collaborations of the Belgian medical world. Those who had gone with the army and those who rejoined it on the Yser continued to demonstrate, even through the hard years of exile, the vitality of Belgian medical science. Thanks to this continued effort throughout the war, the *Archives médicales belges*, at the time of the homecoming, was able to expand its editorial committee to include all the authorities of the four medical faculties, officers of the army medical corps, and the principal medical practitioners of Belgium. Appearing in monthly issues, it publishes original articles in all branches of medicine; each month there is a review of some general question, carefully summarizing current knowledge with bibliographic references. Under the heading "Analyses" are found many abstracts of the foreign literature. These are not arranged according to the journal in which the articles appear; each branch of medicine and each specialty are represented, and for every one of these the principal publications of the month are abstracted by a specialist. Under another heading are items of current interest and proceedings of scientific societies.

Among special journals, the *Journal de chirurgie* should be mentioned; in it are published the discussions of the Société de chirurgie de Belgique.

In a small country such as Belgium, it should be of great advantage, especially under the difficult circumstances at the present moment, to correlate all these endeavors now some-

what dispersed. There can be no question of the advisability of such a movement. But it seems that the smaller the country, the more is sectionalism carried to excess. In such a large country as the United States, where, despite diverse origins and customs, federated states have combined, this centralization has been successful—truly an interesting paradox.

BUENOS AIRES

Feb. 21, 1920.

Feeding of the Argentine Field Army

It is well known that the traditional diet of the country regions of Argentina is chiefly meat, although this custom has been considerably modified in the most populated districts. In the case of Argentine troops in the field, the medical officer, Dr. J. A. López, has made recent observations in Chaco, which indicate that the soldiers receive daily 435 grams of protein, 182 grams of fat, and 201 grams of carbohydrates, making a total of 4,125 calories.

Plague Considered an Industrial Accident

Two recent decisions by different courts have established the principle that plague contracted in a plant in which rat mortality from plague should create suspicions as to its sanitary conditions, makes the employer liable to pay a compensation just as if the patient had died from an accident while at work.

Campaign Against Malaria

The National Department of Public Health is oiling on a large scale mosquito breeding places in the departments of Famaillá and Trancas of the province of Tucumán. In the same zones and also in San Pedro and Río Chico in the province of Jujuy the department is carrying out drainage measures.

Maritime Quarantine

The insanitary conditions of almost all the ships arriving from Europe cause their detention in the port of Rio de Janeiro in order to isolate the sick and disinfect the ships. Some steamship companies have complained of this practice, as they consider as too long the periods of seven to fifteen days during which some boats have been delayed.

PARIS

March 11, 1920.

A Special Day in Aid of Large Families

On the initiative of the societies and leagues that are working to increase the birth rate in France, a special day, March 9, has been set apart on which to solicit contributions. The proceeds of the day will be distributed throughout France among such large-sized families as the most in need of assistance.

Death of Prof. G. Rauzier

Dr. G. Rauzier, professor of clinical medicine on the Montpellier Faculty of Medicine, died recently at the age of 56. He became agrégé professor in 1892, and in 1907 he was appointed professor of general pathology and therapeutics. Two years later he exchanged positions with his former teacher, Professor Grasset, becoming thus professor of clinical medicine. The last edition of the Grasset treatise on the diseases of the nervous system was put out by Grasset and Rauzier working in collaboration. In 1909, a treatise on the diseases of the aged, of which Rauzier was the independent author, was published.

The Influence of Sex on Pathology of Children

Dr. Apert, physician to the hospitals of Paris, recently published, in collaboration with M. Cumbessédès and M.

Flipo, an interesting communication on the subject of the influence of sex on the pathology of children. Aside from congenital luxation of the hip and chorea the influence of sex on the pathology of children is not marked. However, the greater frequency and the greater severity of influenza that had already been noted in young women and in women of mature age applies to young girls as well. For example, for the age group 2-9 the mortality from influenza in Paris was one and a half times as great for girls as for boys. In girls the fever is more prolonged and the complications more serious and more frequent, with the exception of epistaxis. The same is true for pertussis. Nearly all other diseases, however, show a slight excess of mortality for boys. From these facts Apert concludes that not only in matters of home training and general education but also as regards hygiene and therapeutics it is a serious error to fail to differentiate the two sexes.

The Physician as a Public Official

A medical inspector of infants and children who were the recipients of state charity, having been recalled by the prefects of three departments in which he exercised his functions, appealed to the Conseil d'état, which supported him in his contention. The Conseil d'état ruled that a physician in charge of the inspection of infants and children who were the recipients of state charity could not be considered a private physician; he represents the power of the state, and in that capacity it was his duty to see that the nurse fulfilled all the conditions required. In his official visits he represents the prefect, and, as a man of skill, it is for him to say how an infant shall be nourished. He is consequently a mandatory of the state and therefore a state official. As such he cannot be relieved of his official duties without first being informed of the act that is being contemplated, and thus be given the opportunity to demand a written copy of the charges preferred against him and to prepare and present his means of defense.

As for the physician in charge of the services in which free medical assistance is given, the situation is quite different. He is there giving medical care and is bound to his patient by the right of privileged communication. Under such circumstances the practicing physician would not be considered a state official. He is simply giving medical attention to a class of patients, in accordance with certain regulations and a special price schedule. The state in this case merely provides the medical care, and is in the same capacity as a mutual aid society or an accident insurance company.

LONDON March 20, 1920.

Graduate Medical Education for Panel Physicians

The London Panel Committee has pointed out the necessity for the graduate education of panel physicians and the boundless opportunities afforded by the general and special hospitals of the metropolis. They suggest organization of special courses in such subjects as clinical diagnosis and treatment, radiography, tuberculosis, venereal diseases, disorders of digestion, ophthalmology, war neuroses and vaccine and serum therapy. In the months from May to September, when physicians have most time to spare, classes might be held in the evening after office hours. Classes of from twenty to twenty-five would be large enough for each member to receive some individual attention in any discussion that might and should take place after each lecture or demonstration. A course should number from eight to twelve lectures, including demonstrations. A fee of \$15 would be a reasonable one for each member to pay. The value of the system is obvious if only from the point of view of individual efficiency, but there is another point—the collective

efficiency of the insurance service. Changes involving the inclusion of the dependents of the present insured population are imminent. These will necessitate the physician's assuming greater responsibilities. It is hoped that in every district there may be physicians who by taking the necessary steps will become qualified to undertake some of the duties involved in one specialty or another. Classes have already been held at the Military Hospital, Rochester Row, in the diagnosis and treatment of venereal disease, and certificates signed by Lieutenant-Colonel Harrison have been issued to those considered expert in the administration of arsphenamin and similar drugs. To the holders of these, the public authorities are empowered to supply the drugs in question. It is proposed that attendance at the proposed courses shall entitle physicians to similar recognition.

The Nation's Physique

One of the results of the war is to furnish the only survey of the physical fitness of the male population of military age in this country ever made. It has now been presented to Parliament in an elaborate report by the National Service Medical Boards. The number of medical examinations during the period under review was 2,425,184, but this figure does not represent the number of men examined, as it includes reexaminations. Those examined were classed into four grades: Grade 1. Those who had attained the full normal standard of health and strength and were adjudged capable of enduring physical exertion suitable to their age. They amounted to 36 per cent. of the total. Grade 2. Those capable of only such exertion as does not involve severe strain. They amounted to 22 per cent. Grade 3. Those presenting marked disabilities or such evidence of past disease that they were not considered fit to undergo the physical exertion required for the higher grades. They amounted to 31 per cent. Grade 4. Those totally and permanently unfit for any form of military service. They amounted to 10 per cent. There are no figures to show how far this grading proved correct in the actual conditions of military service. But it can be stated that more recruits were degraded than upgraded. The figures, therefore, err on the side of over-rating rather than underrating. An analysis of examinations of different groups of men between 18 and 25 years of age in one large and important district (Yorkshire) made with a view to revealing the influence of occupation on health gave the following remarkable results:

Occupations	Percentages			
	Grade 1	Grade 2	Grade 3	Grade 4
Agriculturists	71.9	15.5	8.8	3.8
Miners	68.9	15.1	10.5	5.5
Engineers	60.9	23.9	13.4	1.8
Iron and steel workers.....	60.2	25.6	11.2	3.0
Lace workers	45.0	26.9	22.7	5.4
Woolen trade	54.6	10.9	24.0	10.5
Tailors	33.9	21.4	33.5	11.2

It will be noticed that the miners and agriculturists show the best results. The general fall in physical fitness shown in the table is a criterion of the effects of the various occupations on the physical welfare of the workers. In the London area it was found that respiratory diseases, particularly pulmonary tuberculosis, showed an enormously high percentage in the densely populated districts of the East End. Some curious figures were given by the occupations. Thus, barbers showed the highest percentage with regard to almost every disease. On the other hand, clerks showed comparatively good results, proving that sedentary work, with due outdoor exercise, is not unhealthful. In the London area, 9.9 per cent. of the men were placed in Grades 3 or 4 on account of heart affections, and 3.1 per cent. on account of tuberculosis.

Deaths

Samuel Doty Risley ☉ Philadelphia; University of Pennsylvania, Philadelphia, 1870; aged 75; a veteran of the Civil War; chairman of the Section on Ophthalmology of the American Medical Association in 1893; and a member of the House of Delegates in 1907; president of the American Academy of Medicine, in 1891, of the American Ophthalmological Society in 1907, and of the ophthalmological section of the College of Physicians of Philadelphia, in 1904; lecturer and assistant surgeon in ophthalmology in his alma mater from 1872 to 1879; professor of diseases of the eye, in the Philadelphia Polyclinic from 1886 to 1900 and emeritus professor thereafter; attending surgeon to Will's Eye Hospital, Philadelphia, since 1889; a member of the board of managers of the Pennsylvania Training School for Feeble-Minded; alumni manager of the University of Pennsylvania Hospital since 1896; died, April 1, following a nervous collapse.

William James Morton ☉ New York City; Harvard University Medical School, 1872; aged 74; a pioneer in electrotherapeutics; the son of Dr. William T. G. Morton of ether fame; for nearly thirty years professor of nervous and mental diseases and of electrotherapeutics in the New York Post-Graduate Medical School and Hospital; for five years professor of diseases of the mind and nervous system in the University of Vermont, Burlington; president of the American Electro-Therapeutic Association in 1893; physician to the Department of Nervous Diseases of the Metropolitan Throat Hospital, New York City; neurologist to the Randall's Island Hospitals and the New York Infant Asylum; editor and proprietor of the *Journal of Nervous and Mental Diseases*, from 1879 to 1885; died, March 26, in Miami, Fla., from heart disease.

John D. Blake ☉ Baltimore; College of Physicians and Surgeons, Baltimore, 1875; aged 66; vice-president of the Medical and Chirurgical Faculty of Maryland, in 1893-1894; professor of clinical and operative surgery in Baltimore Medical College; surgeon to the Maryland General and St. Agnes hospitals, Baltimore; formerly health commissioner of Baltimore; died, March 30, from heart disease.

Edgar C. Loehr, Noblesville, Ind.; Medical College of Ohio, Cincinnati, 1871; aged 69; a member of the Indiana State Medical Association; local surgeon for the Pennsylvania and Big Four systems and Union Traction Company; for two terms mayor of Noblesville; died in the Noblesville Hospital, March 29, from cerebral hemorrhage.

John Dillon Thompson, Captain, M. C., U. S. Army; St. Louis College of Physicians and Surgeons, 1897; aged 44; a member of the Washington State Medical Association; on duty at Marfa, Tex.; while on leave of absence was found dead in a hotel in Phoenix, Ariz., April 4, supposedly from an overdose of chloroform.

John Alexander Black, Cleveland; Western Reserve University, Cleveland, 1913; aged 39; a member of the Ohio State Medical Association; Lieutenant, M. R. C., U. S. Army, and discharged December 26, 1918; formerly instructor in chemistry in the University of Chicago, and in his alma mater; died March 10.

Charles H. Wagner, Minneapolis; Homeopathic Hospital College, Cleveland, 1873; aged 67; vice-president and director of the Northwestern States Portland Cement Company, Mason City, Iowa; the Trinity Portland Cement Company, Dallas, and the Northwestern Metal Ware Company, Minneapolis; died March 1.

Alexander Peter Reid, L'Ardoise, N. S.; McGill University, Montreal, 1858; L. R. C. S., Edinburgh, 1858; University of the City of New York, 1865; aged 83; formerly emeritus professor of medicine and examiner in medical jurisprudence and hygiene in Dalhousie University, Halifax, N. S.; died February 27.

Lane Mullally ☉ Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1889; aged 53; vice dean and professor of obstetrics in his alma mater; a member of the Southern Surgical and Gynecological Association; local surgeon of the Southern Railway; died, March 25.

Elmer Melville Whitney, New Bedford, Mass.; Jefferson Medical College, 1879; aged 64; a member of the Massachusetts Medical Society and New England Ophthalmological Society; ophthalmic surgeon to St. Luke's and St. Mary's hospitals, New Bedford; died, February 27.

Thomas Stanley Crowe, Chicago; Illinois Medical College, Chicago, 1896; aged 51; a member of the Illinois State Medical Society; once physician of Cook County; Captain, M. R. C., U. S. Army, and discharged March 29, 1919; also a pharmacist; died, April 5, from cholelithiasis.

Edward Young Napier, Waverly, Tenn.; Vanderbilt University, Nashville, Tenn., 1880; University of Nashville, Tenn., 1882; aged 76; county health officer of Humphreys County and division surgeon for the Nashville-Chattanooga and St. Louis Railroad; died March 10.

Carl Augustus Meyer ☉ Newman Grove, Neb.; University of Nebraska, Omaha, 1915; aged 30; secretary-treasurer of the Madison County Medical Society; Captain, M. R. C., U. S. Army, and discharged Sept. 12, 1919; died, February 13, from pneumonia following influenza.

Fred W. Upson ☉ Conneaut, Ohio; Western Reserve University, Cleveland, 1882; aged 61; medical supervisor of the New York, Chicago and St. Louis, New York Central, and Bessemer and Lake Erie railroads; died, March 18, from intestinal obstruction.

Crispin Wright, Fruitland, Ida.; Denver and Gross College of Medicine, Denver, 1910; aged 37; Lieut., M. C., National Army; who served with the American Expeditionary Forces in France; died in U. S. General Hospital No. 19, Oteen, N. C., February 22.

John R. Hereford, Jr. ☉ Major, M. C., U. S. Army, retired; Ferguson, Mo.; St. Louis Medical College, 1883; aged 58; Major and Surgeon, Thirty-Second Infantry, U. S. V., with service in the Philippine Islands; died, March 27, from cerebral hemorrhage.

Jerome Gill Atkinson, New York City; University of the City of New York, 1876; aged 76; acting assistant surgeon, U. S. Army; medical director of the Banker's Life Insurance Company of New York City; died, March 22, from influenza.

Robert Elbert Yarbrough, Harrisburg, Ark.; University of Louisville, Ky., 1910; aged 36; health officer of Poinsett County; died in the Paragould, Ark., Sanitarium, March 20, from septicemia following an infected wound of the finger.

Frederick Charles Thompson, East Tawas, Mich.; University of Michigan, Ann Arbor, 1887; aged 53; a member of the Michigan State Medical Society; died at the home of his nephew in Mt. Clemens, Mich., March 15, from uremia.

Augustus Homer Brown ☉ Bayside, N. Y.; College of Physicians and Surgeons in the City of New York, 1894; aged 56; for twenty years one of the police surgeons of New York City; died, April 2, from heart disease.

Helene Siverine Lassen, Brooklyn; New York Medical College and Hospital for women, Homeopathic, New York City, 1871; one of the organizers of the Memorial Dispensary for Women and Children; died, March 25.

Francis Elmer Bingham, New York City; University and Bellevue Hospital Medical College, New York City, 1913; aged 31; first lieutenant, M. C., U. S. Army, and honorably discharged, Dec. 21, 1918; died, March 25.

George W. Thompson, New York City; Eclectic Medical College of the City of New York, 1885; aged 65; professor of theory and practice of medicine and clinical medicine in his alma mater; died April 3.

Stephen Joseph Johnson, Lowell, Mass.; University of the City of New York, 1877; for two years a member of the board of aldermen, and for six years a member of the Lowell school committee; died, March 21.

John Lindahl ☉ La Jolla, Calif.; Drake University, Des Moines, Iowa, 1888; aged 55; formerly medical director of the Swedish National Sanatorium for Tuberculosis, Denver; died, March 19.

Henry Eastwood Bickford ☉ Memphis, Tenn.; (license, Tennessee, 1915); aged 35; in charge of the Red Cross Emergency Hospital in Memphis during the influenza epidemic; died March 21.

Alexander D. Farnsworth, Arkansas City, Kan.; University Medical College of Kansas City, Mo., 1898; aged 46; was instantly killed, January 31, by the overturning of his automobile.

Wellington R. Haring, Philadelphia; Temple University, Philadelphia, 1909; aged 42; a member of the Medical Society of the State of Pennsylvania; died, April 1, from a general breakdown.

James Miller McCready ☉ Sewickley, Pa.; Bellevue Hospital Medical College, 1887; aged 59; died at the home of his cousin in Baltimore, March 18, from cerebral hemorrhage.

Frank Fletcher, Jenkins Bridge, Va.; Jefferson Medical College, 1869; aged 74; a member of the Medical Society of Virginia; died, February 25, from cerebral hemorrhage.

Thomas H. Wilson, Dennison, Ohio; Starling Medical College, Columbus, Ohio, 1869; aged 75; a member of the city council of Pittsburgh in 1896-1897; died, March 22.

Talbot Reed, Atlantic City, N. J.; University of Pennsylvania, Philadelphia, 1894; for two terms health officer of Atlantic City; died, March 19, from nephritis.

William Benjamin Harrison, Columbia, Tenn.; University of Louisville, Ky., 1856; aged 89; a member of the Tennessee State Medical Association; died February 5.

John R. Reeve, DeLand, Fla.; formerly of Superior, Wis.; University of Toronto, Ont., 1857; a member of the Florida Medical Association; died about March 22.

Brooks DeForest Norwood, Westport, Conn.; New York Homeopathic Medical College and Flower Hospital, New York City, 1912; aged 42; died, March 20.

John H. Young, New Cumberland, Pa.; Homeopathic Hospital College, Cleveland, 1874; aged 83; a veteran of the Civil War; also a clergyman; died March 23.

Abraham H. Faith, Denver; Medical College of Indiana, Indianapolis, 1886; St. Louis College of Physicians and Surgeons, 1892; aged 61; died February 21.

Louis Francis Keever, Parkersburg, W. Va.; St. Louis College of Physicians and Surgeons, 1913; aged 61; died, February 16, from pernicious anemia.

Parke Custis Sickler, Wilkes-Barre, Pa.; Baltimore Medical College, 1900; aged 47; died in the Philadelphia Hospital, March 6, from angina pectoris.

W. E. Swinney, McRae, Ga.; Medical College of Georgia, Augusta, 1869; aged 73; for several years city clerk of McRae; died, March 10, from nephritis.

James H. Giles, Big Sandy, Tenn.; University of Tennessee, Nashville, 1892; aged 55; died, March 18, from double pneumonia following influenza.

Alexander R. McDonald, Boyd, Wis.; McGill University, Montreal, 1882; aged 68; died in Minneapolis, March 13, from arteriosclerosis.

Alvin Marion Lakin, Yale, Ia.; Rush Medical College, 1884; aged 62; died in the Methodist Hospital, Des Moines, Ia., January 19.

William L. Bullis, Allerton, Ia.; Philadelphia University of Medicine and Surgery, 1870; aged 74; died, recently, from heart disease.

Charles E. Blacker, Indianapolis; Medical College of Ohio, Cincinnati, 1880; aged 78; died, March 23, from heart disease.

Charles S. Briggs, Nashville, Tenn.; University of Nashville, 1875; died in the Briggs Infirmary, Nashville, March 23.

William Vernon Van Norman, Los Angeles; Cleveland Homeopathic Medical College, 1898; aged 44; died March 28.

George Washington Wilson, Vaiden, Miss.; Medical College of Alabama, Mobile, 1894; aged 60; died March 23.

Samuel F. Nash, Bessemer, Ala.; Birmingham, Ala., Medical College, 1908; aged 42; died in February.

Andrew Lincoln Belt, Fort Dodge, Ia.; State University of Iowa, Iowa City, 1890; aged 58; died March 7.

Frank Fletcher Carr, Holden, Mass.; Harvard University Medical School, 1893; aged 50; died March 6.

Clarence Fletcher Swift, Harlan, Ind.; University of Michigan, Ann Arbor, 1877; died about March 10.

Edgar Leonard Walker, Moriah, N. Y.; University of Vermont, Burlington, 1883; died March 23.

D. W. Faulkner, Foxboro, Ont.; McGill University, Montreal, 1878; aged 67; died March 4.

Marriages

HOWARD DAVIS LEWIS, Baltimore, to Mrs. Flora M. Gottschall of Sunbury, Pa., March 25.

ALICE MITCHELL DE FOREST to Mr. John Wilfred Drummond, both of Detroit, April 2.

SAMUEL J. MCNEILL, Chicago, to Miss Edna E. Hamilton of Toronto, Ont., March 31.

ROY LEE SMITH to Miss Hazel Elizabeth Miles, both of Indianapolis, April 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SOME MISBRANDED NOSTRUMS

Mendenhall's No. 40 for the Blood.—The J. C. Mendenhall Medicine Co. of Evansville, Ind., shipped in March, 1917, some of its nostrum "Mendenhall's No. 40 for the Blood"

which was misbranded. Analyzed by the Bureau of Chemistry, the stuff was reported to consist essentially of potassium iodid, cathartic resins, ammonium acetate, licorice, glycerin, sugar, alcohol and water. It was falsely and fraudulently sold as a cure for syphilis, aneurysm of the aorta, gonorrhea, eczema, rheumatism, catarrh, malaria, and diseases of the liver, kidneys and spleen. In November, 1918, the company pleaded guilty and was fined \$100 and costs.—[Notice of Judgment No. 6637; issued March 22, 1920.]

Zaegel's Essence and Lung Balsam.—Max R. Zaegel, Sheboygan, Wis., who traded as M. R. Zaegel & Co., shipped in April, 1917, quantities of "Zaegel's Essence" and "Zaegel's

Lung Balsam." The government chemists analyzed the "Essence" and reported that it consisted essentially of alcohol, water, sugar and plant extractives, including a laxative substance and a saponin. The "Lung Balsam" was also analyzed and reported to consist essentially of alcohol, water, sugar and laxative plant material flavored with oil of peppermint. The "Essence" was falsely and fraudulently represented as a cure for rheumatism, stomach, liver, bowel and kidney complaints, headaches, diseases of women and ner-



vousness, as well as a remedy for heart trouble and a preventive of appendicitis. The "Lung Balsam" was falsely and fraudulently represented as a cure for coughs, lung and throat troubles and whooping cough and effective, when used in connection with "Z. M. O.," as a cure for pneumonia and when used with the "Essence" as a cure for consumption. In September, 1918, Zaegel pleaded guilty and was fined \$110.—[Notice of Judgment No. 6628; issued March 22, 1920.]

McGraw's Liquid Herbs of Youth.—George W. McGraw, who traded as the McGraw Remedy Co., Little Rock, Ark., shipped in December, 1916, a quantity of "McGraw's Liquid Herbs of Youth." The Bureau of Chemistry reported that this marvel was, essentially, Epsom salt, senna, red pepper, quassia, alcohol and water with wintergreen flavor.

McGraw's Liquid Herbs of Youth was represented as a cure for rheumatism, scald head, pimples, syphilis, ringworm, headache, pains in the back, catarrh, female weakness and some other conditions and it was claimed to invigorate the nervous system and impart new life and energy to all functions of the body at the same time that it was eradicating disease. These claims were declared false and fraudulent. McGraw pleaded guilty in September, 1918, and was fined \$10.—[Notice of Judgment No. 6673; issued March 29, 1920.]

Jarabe de Ambrozoin.—The American Apothecaries Co., Astoria, N. Y., shipped during March, 1917, a quantity of "Jarabe de Ambrozoin." The Bureau of Chemistry reported that analysis showed this product to be composed essentially of terpin hydrate, menthol, benzoic acid, ammonium chlorid, sodium bromid, glycerin, alcohol, sugar and water. It was falsely and fraudulently represented as a treatment for laryngitis, asthma, whooping cough and tuberculosis. In February, 1919, the company pleaded guilty and was fined \$100.—[Notice of Judgment No. 6642; issued March 22, 1920.]

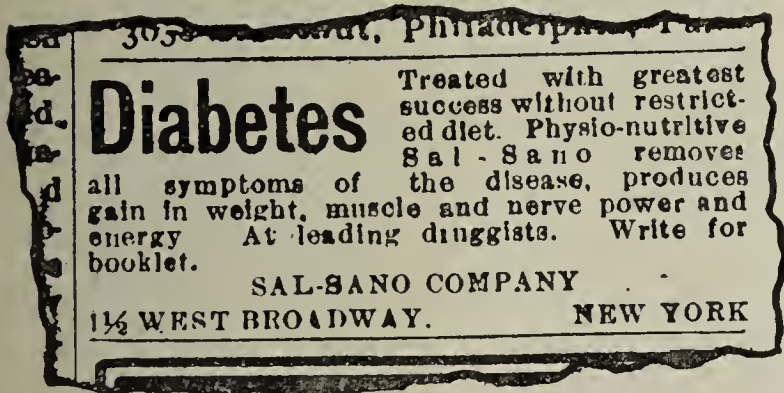


Kampfmüller's Rheumatic Remedy.—The Kampfmüller Rheumatic Remedy Co., Louisville, Ky., shipped in December, 1916, a quantity of "Kampfmüller's Rheumatic Remedy." The Bureau of Chemistry reported that this consisted essentially of potassium iodid, plant extractives, alcohol and water. It was falsely and fraudulently represented as a cure for arthritic rheumatism, articular rheumatism, inflammatory rheumatism, muscular rheumatism and rheumatic fever. In October, 1918, the company pleaded guilty and was fined \$25.—[Noticed of Judgment No. 6684; issued March 29, 1920.]

Sal-Sano.—Ernst Bischoff, New York City, who traded as the Sal-Sano Co., shipped in July, 1917, a quantity of Sal-Sano, which was misbranded. The Bureau of Chemistry reported that analysis showed this stuff to contain essentially:

Sodium chlorid (common salt)	19.9 per cent.
Sodium phosphate	13.6 per cent.
Sodium bicarbonate (baking soda)	42.2 per cent.
Sodium sulphate (Glauber's salt)	20 per cent.

This mixture was falsely and fraudulently represented as a cure for diabetes "when in truth and in fact it was not."



In December, 1918, Bischoff pleaded guilty and was fined \$100.—[Notice of Judgment No. 6658; issued March 29, 1920.]

Indian Wyanoke.—Albert M. Follett, who did business as Park & Russell Co., Concord, N. H., shipped a quantity of Indian Wyanoke in May, 1917, which was misbranded. Analysis by the Bureau of Chemistry showed the product to consist essentially of chloroform, ammonia, menthol, glycerin, turpentine-like oils, alcohol and water. The stuff was falsely and fraudulently represented as a remedy for diphtheria,

consumption, pleurisy, pneumonia, deafness, sore eyes, rheumatism, "creeping paralysis," felons, peritonitis, appendicitis, baldness, dandruff and many other things. In April, 1919, Follett pleaded guilty and was fined \$25 and costs.—[Notice of Judgment No. 6664; issued March 29, 1920.]

Gregory's Antiseptic Oil.—"Gregory's Antiseptic Oil" was a nostrum shipped by the C. J. Lincoln Co., Little Rock, Ark., in August, 1917. The Bureau of Chemistry reported that analysis showed the preparation to consist approximately of 89 per cent. kerosene oil with small amounts of oil of cloves, cassia and sassafras with a trace of camphor and pepper resins. The preparation was falsely and fraudulently represented as a cure for rheumatism, hog cholera, pneumonia, big-jaw, lung troubles, sweeny, asthma, bighead, coughs, blind staggers, pleurisy, blackleg, backache, sore throat, kidney troubles, consumption and one or two other things. The C. J. Lincoln Co. pleaded guilty in April, 1919, and was fined \$50.—[Notice of Judgment No. 6670; issued March 29, 1920.]

Correspondence

A STATEMENT CONCERNING THE RADIUM SITUATION

To the Editor:—Late in the year 1912 the Bureau of Mines undertook an investigation of the radium-bearing ores situated in Colorado and Utah. This investigation resulted in the publication in 1913 of a bulletin of the Bureau of Mines entitled "A Preliminary Report on Uranium, Radium and Vanadium," by Richard B. Moore and Karl L. Kithil. Up to the time this bulletin was published, the larger proportion of the ore mined had been shipped abroad, mainly to England, France and Germany, where the uranium, vanadium and radium were extracted. One company, however, in this country was greatly interested in the extraction of radium from carnotite, and at the time of publication of this bulletin had made a good start toward the desired end.

Very few people, however, in the United States knew anything concerning these deposits, and a still fewer number had any definite idea that they might be used as a commercial source of radium. Even a large proportion of the miners had only a hazy idea concerning the fact that the ore contained radium, as the European buyers emphasized that they were purchasing the ore for the vanadium which it contained.

In 1912 no one had a real conception of the value of these deposits to the United States and to the world in general. Whereas a limited number of people knew that they contained radium and a certain number in this country were interested in the possible extraction of radium from these ores, the fact that they constituted the largest deposit of radium-bearing ore in the world was not known until the publication of Bulletin 70 of the Bureau of Mines, referred to above. On page 42 of this bulletin there appears:

The United States possesses unique deposits in these carnotite ores. They constitute at present the largest known supply of radium-bearing minerals in the world. With the exception of the ore mined and utilized by two firms, practically every pound is shipped abroad. Up to the present very little interest has been shown by Americans in these deposits, which may not be duplicated, so far as quantity goes, in any part of the world.

The only other large deposits of uranium-bearing ores are those in Austria. They are considered of such importance that the Austrian government has taken entire charge of them. The output from the carnotite fields of this country is much larger than that from the Austrian mines and is likely to continue larger for some time to come, but the ore should be mined with minimum waste and the industry should yield a maximum profit to this country.

Since 1913 the situation as regards the extraction and recovery of radium has changed, and at the present time this country produces much more radium than all the rest of the world put together.

On account of the fact that these are the largest radium deposits in the world, there has been a tendency to overestimate the amount of ore available and the probable length of time the deposits will be the source of commercial radium. There is naturally, under such circumstances, a difference of opinion as to the probable amount of ore that can be produced. No one can tell exactly just how much radium ore can be derived from these fields. To some extent the future production will depend on the price, as a much higher price would allow lower grade ore to be mined and treated. As the ore always exists in pockets of varied sizes and grades, the mining has been largely confined to outcrops, which has made the question of an estimation of the probable amount of ore available easier than if mining conditions were such as are encountered in connection with other metals. The larger proportion of these outcrops have now been worked out, and the more important companies have been and are drilling and mining small bodies of ore which have been located below the surface. It follows that as mining becomes more expensive and the grade of ore treated becomes lower, the price of radium must necessarily increase, unless very much more efficient methods of treatment are discovered than are used at the present time, and this is not likely.

Based on the present production and anything like the present price of radium, it is probable that the carnotite deposits of Colorado and Utah will not last as a commercial source of ore for longer than six to ten years. It is difficult to estimate the total amount of radium that has been produced in the world, but it is probably somewhere between 100 and 110 gm. of radium element. Of this amount about 70 gm. of radium have been produced in this country, and an appreciable quantity of the other 30 to 40 gm. extracted abroad have come from exported American ores. It can be readily seen, therefore, that nearly three quarters of the total world's production of radium has come from American carnotite ores.

Whereas more than 100 gm. of radium have actually been produced, there is not by any means 100 gm. available today. A considerable amount of both American and European radium has gone into the production of luminous paint for watches, clocks, electric light push buttons, etc. The amount of radium used for these purposes, however, is small in proportion to the war uses both here and abroad. The dials on the instruments used on practically all aeroplanes were marked with radium luminous paint. Radium was also used in the war for gunsights and various other purposes, and nearly the whole production of 1919 as well as a large proportion of the production of 1918 was used for war purposes in which the radium was permanently lost. Not only is this true, but as Germany, France and England were rather short on radium, especially the first nation, a considerable amount of radium abroad which previously had been used for cancer treatment was drawn on for war purposes. Even in this country a number of physicians sold their supplies. Owing to the varied uses for war purposes it is impossible to state just how much radium is left at present; but the amount is very considerably less than the 100 to 110 gm. actually produced.

Owing to these facts, to the limited life of the radium ore deposits, and to the successful use of radium in cancer work and for other therapeutic purposes, it is important that the physicians of this country should consider the matter very carefully and take such steps as are necessary to provide radium for the needs of cancer patients before the material is gone or has been used for other purposes.

In order that the radium plants may run and the extraction of radium may be possible, it is necessary to have a market for the product; and if there is not a sufficient demand for medical purposes, no one can blame the manu-

facturers for finding other uses. It therefore becomes necessary to find ways and means for purchasing the radium from the manufacturers while it is possible to do so.

This is partly being taken care of by private purchases for hospitals. It is difficult to estimate exactly how much radium is in use in this country at present for such purposes; but it is probably between 20 and 25 gm. Not only can the present and future situation be ameliorated by encouraging further purchases by individuals and hospitals, but great good might be accomplished by obtaining either from the government or from private sources funds to purchase a large amount of radium during the next five years which could be placed in the hands of some proper organization to be administered for the benefit of the people of the United States.

RICHARD B. MOORE, Washington, D. C.

Chief Chemist, U. S. Bureau of Mines.

"THE CAUSE OF ABSCESS OF THE LUNG AFTER TONSILLECTOMY"

To the Editor:—In THE JOURNAL, April 3, 1920, p. 941, Dr. Clendening states his suspicion that motor-driven ether apparatus may be a frequent cause of lung abscess after tonsillectomy. He goes farther and states that the use of these machines should be discontinued until their innocence is proved.

My work is that of an expert anesthetist, and in the course of a month I probably work with a dozen different operators for tonsillectomy, thus becoming familiar with many and varied types of technic. From my own experience it would seem to me altogether too radical to condemn the use of an apparatus found so valuable by so many men on the sole argument of "post hoc ergo propter hoc."

Dr. Clendening does not mention whether the position used during operation in his cases was the dorsal one or not, nor does he say whether those patients having lung abscess following tonsillectomy were returned to bed in the dorsal position and kept so during recovery of their reflexes; but I would presume that the dorsal position was used.

Now, if ether blower and suction apparatus is responsible for the complication of lung abscess after these operations, is it not more reasonable to say that the suction portion of the apparatus is responsible in that it has made thorough tonsillectomy possible in the dorsal position and has so delayed men in changing to some position in which the throat draining is by gravity forward into the mouth, such as the lateral position of the patient's body with mouth turned down or capable of being turned down when necessary? Is there any excuse for carrying a patient back to bed, flat on his back after a tonsillectomy, to "gargle" and inhale septic throat contents and blood, when he could just as easily be transported in the prone position with the head turned to one side and so let gravity keep the airways free?

I believe that these motor-driven machines are found too valuable by a large number of operators to condemn them until we have completely eliminated the old hazardous dorsal position during operation, and especially every second of the time after operation until the patient is conscious and the reflexes are intact.

RALPH M. WATERS, M.D.,
Sioux City, Iowa.

Use of "Patent Medicines" in Tuberculosis.—The extreme danger of depending in the least on "patent medicines" for the cure of tuberculosis is emphasized by the thousands of persons every year who have trusted to their false promises until so much time has been lost that their cases have become hopeless.—*Bull. Maine State Dept. of Health*, October, 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.
HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
LOUISIANA: New Orleans, May 4. Sec., Homco. Bd., Dr. F. H. Harnden, 702 Machesa Bldg., New Orleans.
NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.
NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.

AN INVESTIGATION OF CONDITIONS IN THE DEPARTMENTS OF THE PRECLINICAL SCIENCES

Report of a Committee of the Division of Medical Sciences of the National Research Council

JOSEPH ERLANGER, M.D., ST. LOUIS; C. M. JACKSON, M.D., MINNEAPOLIS; GRAHAM LUSK, NEW YORK; W. S. THAYER, M.D., BALTIMORE, AND V. C. VAUGHAN, M.D., ANN ARBOR, MICH.

RESOLUTIONS ADOPTED UNANIMOUSLY BY THE DIVISION OF MEDICAL SCIENCES

WHEREAS, A committee composed of Drs. Joseph Erlanger, C. M. Jackson, Graham Lusk, W. S. Thayer and V. C. Vaughan appointed by the Division of Medical Sciences of the National Research Council to study the situation in regard to the supply of assistants in pre-clinical departments has made a thorough study of this in the medical schools of the country and submitted a report setting forth existing conditions and analyzing suggestions as to improvement; and

WHEREAS, This study shows that there is a serious scarcity of men of proper caliber for assistants in preclinical sciences seeking such positions; be it

Resolved, By the Division of Medical Sciences of the National Research Council:

1. That this deficiency in assistants constitutes a very serious menace to medical education because not alone are there insufficient assistants for the present needs of instruction in the preclinical sciences, but the deficiency of the present inevitably must result in an inadequate number of men qualified for higher positions in the preclinical sciences, and a consequent deterioration in these departments in a very few years.
2. That since the clinical departments are in many ways dependent for their efficiency on the instruction afforded and the investigation conducted in the preclinical sciences, deterioration in the preclinical sciences will result in deterioration in the clinical departments.
3. That since these conditions enumerated under 1 and 2 exist, it is very essential that steps be taken to provide for a more satisfactory supply of assistants in the preclinical sciences.
4. That since directly or indirectly the remedy for these conditions depends to a large degree on increased budgets for salaries for assistants, instructors, assistant professors and professors, and for technicians and supplies, it is highly important that funds be secured for these purposes to prevent deterioration in the entire structure of medical education.
5. That, since this need for funds for the preclinical sciences seems so pressing, the larger proportion of funds available for developing medical education should be applied to the preclinical rather than to the clinical departments of the medical schools for the present and until such time as a more satisfactory situation is obtained in the preclinical sciences.

REPORT OF THE COMMITTEE

To the Division of Medical Sciences of the National Research Council:

Gentlemen:—Your committee appointed to consider the present paucity of satisfactory assistants in the departments of the preclinical sciences (anatomy, bacteriology, pathology, biochemistry, pharmacology, physiology, etc.) and its probable effect on investigation in the medical sciences and to advise the National Research Council through the Division of Medical Sciences of any plan that should be undertaken to correct this deficiency, beg leave to report as follows:

The data on which this report is based were gathered by means of a questionnaire addressed to the heads of the depart-

ments of the preclinical sciences in all Class A medical schools. When the information available was insufficient to permit of addressing it to the head of the department by name, the questionnaire was addressed to the department. Some of the letters must, therefore, have been addressed to nonexistent departments. And, inasmuch as two or even three subjects often are combined into one department, it must frequently have happened that one and the same individual received two or more copies of the questionnaire. It therefore is impossible to determine accurately the number of departments that have failed to reply. Two hundred and ninety-eight copies were distributed. We can be sure only that we have failed to hear from something over fourteen departments. The replies received up to the time this report was prepared (February 20) numbered 139. Copies of all, including thirty-one received since, accompany the report. An adequate conception of the problem can be obtained alone by reading the whole set.

Owing to the number and, in many instances, the length of the replies, it is impossible to publish all of them. This is to be regretted not alone because of their value as an exposition of the situation in medical education, but also because alone by publication in full is it possible to avoid running the risk of inadequately presenting the problem. An alternative, and the one we have been forced to adopt, is to publish a limited number of the replies. In order to avoid as far as possible the danger of making a selection on the basis of personal inclination, the arbitrary decision was made to select one reply from each of the twenty-six schools that had returned three or more answered questionnaires up to the time of preparing this report. The medical schools that fall into this category are: Leland Stanford Junior University; University of California; Yale University; Emory University; Northwestern University; Rush; University of Illinois; University of Iowa; Johns Hopkins University; Harvard University; University of Michigan; University of Minnesota; St. Louis University; University of Missouri; Washington University; University of Nebraska; Columbia University; Cornell University; University and Bellevue Hospital; University of Cincinnati; Western Reserve University; University of Pennsylvania; University of Pittsburgh; University of Texas; University of Virginia, and University of Wisconsin.

The considerations determining the selection of the reply from a given school have been, first, brevity, and second, representativeness. Occasionally a longer reply has been selected because of its more thoughtful treatment of the subject. In the case of two of the schools, a second reply (Nos. 27 and 28) has been transcribed because of their unusual point of view. The replies have been edited only to the extent of obscuring the identity of the writers and of eliminating irrelevant matter. The distribution of the selected replies among the several preclinical subjects happens to be as follows: anatomy, 6; biologic chemistry, 3; biologic chemistry and physiology, 1; pathology, 6; pathologic chemistry, 1; pharmacology, 2; physiology, 5; physiology and pharmacology, 1, and experimental medicine, 1.

QUESTIONS SUBMITTED

The questions the heads of the departments were requested to answer were as follows:

1. Is your department experiencing any difficulty in filling vacancies and in holding men? If so, to what cause or causes do you attribute the difficulty?
2. Do you succeed in obtaining as assistants the best qualified men from among those eligible? If not, what becomes of such men?
3. Can you suggest a plan or plans that might lead the best qualified men to take up your subject as a career?

4. Can you suggest a plan or plans for increasing the number of men from whom might be selected assistants for the preclinical departments?

In the replies published herewith, the marginal numbers indicate the number of the question that is being answered.

REPLIES ¹

1

1. Yes. I am in receipt of innumerable requests for men to fill both academic positions and hospital laboratory positions and have no one in sight for 90 per cent. of the requests. So far I have been unable to hold any of the men that I have trained. I am able to keep them until they are well trained and then they receive offers that they should not refuse. The cause is entirely financial. It is, perhaps, especially marked in pathology as compared to other fundamental branches, because a pathologist must have a clinical training and therefore is able to accept the much more attractive opportunities offered in clinical medicine than in pathology; also hospital laboratories are increasing in importance and many of them are offering much larger salaries than men of similar experience can possibly secure in universities. Furthermore, these hospital laboratory positions in many instances offer good facilities for research work.

2. Yes. We obtain usually some of the best, eligible men as assistants because medical students recognize that advanced training in pathology is the best stepping stone to further advance in clinical medicine, just as in former years anatomy was the high road for the ambitious surgeon.

3. In my judgment there is just one solution of the problem and that is that the rewards at the top of the ladder be adequate to compensate the beginner for his period of sacrifice to attain that goal. Young men are perfectly willing to sacrifice financial advantage for some time in medicine and law as well as other professions, because at the end is a goal that is worth the sacrifice. Formerly the advantages of academic life were sufficient to induce some of the best men, and especially those with the higher ideals of work and service, to forsake the road of financial success in clinical medicine to secure the advantages that the universities had to offer. Now that the professors in clinical branches are being given all the academic privileges with much higher possibilities of remuneration, this same type of men, from whom the faculty of pathology must be recruited, naturally forsakes pathology for the clinical branches. . . . Unless a radical change is made very quickly, in a very few years there will be no competent men in pathology. There will merely be a few men who have been in pathology too long to change and young men who are taking pathology with the expectation of shifting at the earliest possible moment to one of the clinical branches. The clinical branches in the past have recruited their teachers and research men almost entirely from the laboratories in the fundamental sciences. The recent exaltation of clinical branches is merely another case of slaughtering the goose that lays the golden egg. It will be perhaps easier to put the departments of pathology on the same footing as the clinical branches than the other fundamental branches, since the pathological laboratories play such an increasingly important part in the conduct of the clinical work. To recruit the pathological faculties it is necessary to place the department of pathology on the same footing in every respect as the department of internal medicine. When the opportunities in pathology and internal medicine are equal then equally good men will be available in each subject.

4. I believe that the answer to 3 covers Question 4. When physiology and pathology offer careers corresponding to those of the clinical branches, they will have plenty of assistants, but until then, their assistants will be not only deficient in number but especially inferior in quality.

8

1. In the past this department has had difficulties in filling vacancies. The assistants in the department have almost invariably been candidates for the Ph.D. degree, i. e., they have been men of little experience in research, in teaching, and in general knowledge of physiology. Until this year we have had few men as assistants who have had the medical degree. The department here has also had difficulty in holding men. . . . The difficulty in filling vacancies and in holding men is in my opinion twofold. One is a financial difficulty, the other is more complex and will be considered in Section 3. First, with reference to the financial condition; the highest pay which we have been able to offer to assistants has been \$500 a year. . . . Furthermore, the higher places, such as instructorships, assistant professorships and the professorship, are inadequately compensated. In my opinion an instructor should not receive less than \$2,400 annually, and an assistant professor should receive \$3,600 or \$4,000.

Top salaries for professors in the preclinical subjects throughout the country are commonly regarded as appropriately lower than that given to full-time clinical men by half or at least by several thousand dollars. I have not seen any good reason for this arrangement except that which is based on the capability of the clinician to go outside, and by devoting his time to practice, to gain larger returns. This is a possibility which the laboratory man likewise had at one time. He should not be penalized because he has surrendered it in devotion to the advancement of medical knowledge. It seems to me that the object of having full-time clinical men, as it is in having full-time laboratory men, lies in the provision for research. If both types of investigators are conducting medical research, there is no reason either in the character of the research or in its results, which justifies the distinction that has been drawn. This distinction is likely to breed a feeling of injustice in medical faculties and possibly a restlessness due to unfair discrimination. If such an attitude does arise, it seems to me that there will be a tendency for the best men to seek clinical rather than laboratory chairs.

If there is anxiety lest the laboratory departments will not be manned by the best men, the danger of such a result should be provided against now.

2. With reference to securing the best qualified men, it may be stated at once that it is rare for such men to enter service here in the laboratory departments. They go into clinical work. This tendency has been especially marked since clinical research has become prominent. It is possible now for a person having an interest in physiology, for example, to obtain work in a first class hospital in which he can satisfy his physiological interest, use physiological methods, conduct physiological research, keep in touch with patients, have room, board and laundry supplied, and frequently a satisfactory salary in addition. The meager opportunities offered in the laboratories of the medical school as compared with those in the laboratories of a very good hospital are distinctly unfavorable to men pursuing careers in laboratory subjects.

3. With regard to plans for leading the best qualified men to take up preclinical subjects as a career I wish to suggest several considerations:

(a) Adequate financial return for beginners, as well as for persons who have gained experience, must be provided as indicated above.

(b) We are in a vicious circle by not being properly manned. If a department has a professor, an assistant professor and several instructors who are all well-trained, active investigators, they by contact with the students, are able to interest them in investigation and thus increase their chances of becoming permanently attached to investigation as a pursuit. Just because we have an inadequate or ill-qualified personnel we continue to have such a personnel.

(c) The most important means of interesting alert, keen-minded students in medical research is by contact with investigation. I believe that inquiry among our leading investigators would show that it was some chance oppor-

1. On account of lack of space, only seven of the twenty-eight replies selected for publication appear in this article, one from each of seven of the better supported schools. Each represents a different preclinical subject. The complete paper containing the twenty-eight representative replies will be reprinted as a pamphlet and will be sent on receipt of stamped, directed envelop.

unity of learning what research really is that led them to undertake it permanently. The rigidity of the medical curriculum and its complete filling of all available time result in a definite crowding out to the possibility of men undertaking special work in any of the preclinical subjects, unless they have had some previous experience and can therefore be released from the ordinary routine. . . .

4. I believe that the plan suggested under 3 will serve to increase the number of men from whom assistants might be selected for work in preclinical departments. . . .

Besides considerations which are directed in the main towards inducing *medical* students to go permanently into preclinical branches, there should be considered the probability that we shall have to depend to a considerable extent on possessors of the Ph.D. degree for adequately trained candidates for research positions. . . . I believe that any preclinical department would do well to get into relation with the academic department of the university and count upon receiving a certain number of candidates for the Ph.D. degree as assistants. I believe that it would be a mistake in the development of medicine to have the whole department thus manned.

12

1. No more than should be expected. The chief factor is "clinical opportunities": at least what the prospective assistant believes to be clinical opportunities.

2. Yes.

3. Clinical subjects, of course, are more attractive to the vast number of men. But that this is true in the case of the very best men, I am not so sure. I would suggest that clinical subjects are in need of men of high ideals and that it is better that they be allowed to go in that direction.

4. This has always been an economic question. The salaries paid to clinical assistants are so great by comparison as to exclude all competition.

16

1. Yes. Lack of either immediate or future remuneration, commensurate with remuneration in other lines.

2. No. They go into the clinical branches.

3. Much larger salaries for present and future.

4. Much larger salaries.

19

1. None . . . since we have a fairly large department. One professor, three assistant professors, three instructors, and three assistants. The small, two and three men anatomical departments have great trouble in getting and holding their men; only the professor can survive the burden of routine work. Young men also seem more inclined to work in departments where there are several more advanced men working. We need more fully developed laboratory departments in the medical schools before we can hope to attract capable men, as they must see work being done.

2. We have trouble getting the best medical students to come in the laboratory as assistants. They go into medical practice which was their initial aim on entering the medical college. To pull a medical student into the laboratory he must be diverted from his first idea which, in 98 per cent. of the cases, was practice. Naturally the best qualified men are the most difficult to divert.

3. Increase the size of anatomy departments up to a university basis with not one but four or five professors in the department with a number of assistants and instructors and sufficient janitor service. This is the one thing that makes university departments of chemistry, etc., full of students, college graduates, willing to work four or five years to become a professional chemist with a small salary in the future. A better rate of pay will help the situation but not cure it. Fellowships and low paid assistantships are of little avail.

4. By preventing the proposed fifth clinical intern year of the medical course from becoming in all cases simply a clinical intern year, instead of largely a laboratory course in the case of many. The full-time clinical instructorship will appeal to even the few that might have come into labora-

tories, since they have all the advantages, etc., and in case of failure one can step right into practice. Whereas if a man fails after four or five years in the preclinical department he is almost unfitted for practice. It looks as if the medical schools must still for a long time recruit their laboratory teachers from the university science departments, and this is too bad, as American medical schools should be self-supporting in their teaching supply. . . .

21

1. Yes. Mainly lack of funds.

2. Not always. They go into clinical work, not infrequently into clinical laboratory work for a period of some years. They are aware that the time spent in this form of laboratory work is likely to bring material rewards in the future.

3 and 4. Behind any plan which promises success must stand a very large increase in funds available for increasing salaries and facilities for work. A small increase is of little avail. While no doubt other factors are important, nearly all can be traced back to the economic factor. An increase of 100 per cent. in salaries, so that \$10,000 or \$12,000 posts would be as common as \$5,000 or \$6,000 just now, would in time have a great effect. The common idea that the so-called full-time clinical man should receive twice as much as the full-time laboratory man is quite erroneous. Both should be well paid. If there is any discrimination it ought to be in favor of the laboratory man, as in the past at any rate he has had on the average the higher quality of brains. This has a definite bearing on the question why it is becoming so hard to get or to hold the best type of man in the laboratory branches. . . .

22

1. Insufficient means to provide living expenses for a group of untrained men. Insufficient means to maintain a line of promotion offering increasing income as men grow older and acquire increasing responsibilities. A widespread conviction that the highest places attainable do not provide a comfortable living.

2. No. A considerable proportion of the men in this department who have been desirable to hold have been attracted to clinical departments in universities or have taken up practice of medicine.

3. There should be a number of junior appointments (six to ten) paying the equivalent of \$1,000 to \$1,200 (in some instances with residence in the hospital). Several positions, at least four, ranging from \$2,000 to \$5,000. Salaries to heads of departments in fundamental sciences having closer approximation than exists at present to those attainable with reasonable success in other walks of life and particularly in clinical medicine. With existing conditions this requirement must be fulfilled in order to elevate the status of teaching in the community.

4. Recognition by the clinical departments that the training of men to fill the highest places in medicine or surgery requires a more intimate knowledge of pathology. A large proportion of those who are pursuing academic careers in clinical medicine should have one or two years as assistants in pathology. Provision for much more numerous junior places to train men both for clinical work and for a career in pathology.

ANALYSIS OF REPLIES -

The replies often are couched in indefinite terms so that we cannot be certain that in every case we have correctly grasped the author's meaning. It would seem that at least three of the departments replying do not have assistants of any kind; that two, possibly more, have only student assistants; and that eight, namely, Hooper Institute at California; physiology at Stanford; anatomy at St. Louis University; pathology at Nebraska; physiology at Albany; physiology at Columbia University; physiology at Syracuse, and pharmacology at Western Reserve recently have not had vacancies in the full-time staff. It may be added that it is not always correct to infer that because a department has not been in

the market for assistants the conditions within the department therefore are satisfactory.

However this may be, there remain 125 departments which have recently been in quest of full-time assistants. Of these, fourteen, namely, anatomy and biochemistry at California; biochemistry and pathology at Stanford; pathology at Yale; anatomy, biochemistry, physiology and the School of Hygiene at Hopkins;² anatomy at Cornell; biochemistry and physiology at Jefferson; anatomy at Colorado, and physiology at Bowdoin, state more or less definitely that they have had no difficulty or no more than the usual difficulty in filling their vacancies. In many of these instances unusual circumstances are referred to, such as climate, funds or university relations, which, in the opinion of those interrogated, tend to compensate for recognized difficulties. One hundred and nine state definitely that they are unable to fill, or are having difficulty in filling vacancies, or are unable to hold men.

The second question, namely, "Do you succeed in obtaining as assistants the best qualified men from among those eligible?" was framed for the purpose of ascertaining whether students from preclinical departments, who seemed best able to develop the preclinical sciences, were entering and remaining in the departments of the preclinical sciences. The replies to this question show that of the departments that are manned by full-time assistants and within recent years have been in the field for men (126 in number) all believe either that they do not, or do not in general get as assistants the best qualified men, or that when they do get such men they cannot as a rule hold them longer than from one to three years, or they give a noncommittal answer, excepting one department in each of the following eight schools: Colorado, California (Hooper Institute), Stanford, Bowdoin, Hopkins (?), Michigan, Jefferson and Hopkins School of Hygiene.

According to the answers, the better men on graduation mainly go into practice; some go into commercial and hospital laboratories, while the pick of them go into the full-time clinical departments or research institutes. This also seems to be the fate of the promising men who enter the preclinical departments, usually to leave after one to three years of experience.

In our opinion these statistics leave no reasonable room for doubting that there is a paucity of satisfactory assistants in the departments of the preclinical sciences. The better graduates as a rule do not seek positions in these departments; or, having for one reason or another become members of such a department, they do not as a rule remain very long in it. The effect this deficiency in satisfactory assistants must have both on the quantity and on the quality of research accomplished in the fundamental sciences, not alone by the assistants themselves but also by the older and better trained men who are making or hope to make the preclinical sciences their life work, is so obvious as not to require comment.

The difficulty in filling vacancies and in holding men (Question 1), and the inability to interest the better men in careers in the preclinical sciences (Question 2), both are attributable to the same causes and, to refer now to Question 3, any plan calculated to lead into the preclinical sciences their fair share of the best qualified men must of course take these causes into consideration. The replies show, both by the causes assigned and by the plans proposed, that the situation is quite complex; many, indeed most, refer to more than one factor. The opinion, however, is nearly unanimous that insufficient salaries is one of the causes—that improvement in the salary situation alone is all that is necessary to relieve the immediate situation. It is referred to as a cause of the difficulty, or is mentioned as one of the ways of

overcoming the difficulty in all of the replies save two or three. Two of those interrogated (Nos. 27 and 28) are of the opinion that inadequate salaries are not the chief factor.³ The fault, though, is by no means entirely with the salaries of the assistants; for, even under present conditions, it seems possible in many of the schools to obtain excellent assistants who remain for a year or two in order better to prepare themselves for practice, for commerce, or for a career in one of the clinical departments. Rather, the main deterrent is the prospect that if one actually should achieve success, the final goal would fall far short of furnishing as large a salary as preclinical heads feel they are entitled to receive. To quote an expression frequently found in the replies—the salaries are too low "all along the line."

The answers make it clear that it is no longer true, if it ever was, that a man will choose an academic career when he knows that even if he should achieve distinction he would have to forego the prerogatives and comforts that now can be gained by any one of similar attainments in other walks of life who meets with a fair degree of success. It would seem to be the general opinion that a small increase in salaries would not suffice to check the movement away from pure science.

Two of those interrogated seem to fear that any *great* increase in salaries "would defeat its own end by attracting men by reason of their unfitness." This danger could readily be avoided if, as some suggest, beginners were tried out for two or three years on annual appointments before they actually were made members of a department. All that can be said with regard to this opinion is that the men occupying the preclinical posts that pay the largest salaries certainly are not any less productive than men in other places. We are of the opinion that research would suffer less if the goal were a living in ease and comfort rather than a constant effort to maintain a respectable standard of living.

A fruitful source of discontent apparently is the present movement to pay full-time clinicians larger salaries than the men in the preclinical branches. This subject is specifically mentioned in twenty-eight of the replies, and many others refer to it indirectly. It is pointed out that "a man who studies medicine will naturally be more attracted to the clinical branches where he can now find good opportunities for research and at the same time not cut himself off from the possibility of earning a respectable living;" that "the remuneration of men in the preclinical branches must be raised to that of men doing full-time work in the clinical subjects," "or their assistants will not only be deficient in number but especially inferior in quality." One almost gains the impression that some would actually reverse the situation, so far as salaries are concerned, so as to offset the natural tendency on the part of medically trained men to remain in the clinic and deal with practical things. Further comment on this topic is unnecessary; the replies accompanying the report make the situation quite clear.

But while insufficient pay "all along the line" evidently is the most important factor accounting for the paucity of preclinical assistants, there are other factors that are not without significance. A surprisingly large number are mentioned in the replies. This perhaps is to be expected. For, owing to the state of mind the unsatisfactory conditions in the university world tends to develop, aggravations which ordinarily would not be worth mentioning assume an importance to the individual that compels emphatic assertion. Furthermore, a questionnaire of this kind affords an opportunity to lay bare difficulties and differences which may be more or less local in their significance. In an effort to ascertain the fundamental difficulties it is essential not to attach

2. The questionnaire was sent to but one of the departments of the School of Hygiene.

3. These are the two replies that are quoted in addition to the reply that has been selected as representative of opinion in its school.

due weight to such matters. A few of the factors mentioned as partly responsible for the present situation that seem worthy of more serious consideration are listed below, together with the running comments of the committee.

1. Insufficient staff—junior and senior.
2. Lack of facilities.
3. Difficulty in finding time for research.

If the necessary assistants could be found, these causes of discontent could be remedied by increasing budgets.

4. Supply not equal to demand due to call for men in the industries and in developing schools.

This state of affairs may be temporary, but in any event points to the need of increasing the number of men preparing for a career in science. Possibly, as most believe, the supply could be increased by increasing salaries and budgets, though changes in educational methods may also be necessary.

5. Dearth of men qualified to fill positions.

If true, either training is at fault, or it may be due to failure of men to prepare themselves for a scientific career because they know nothing of it, or, knowing of the career, they regard it unattractive or without opportunities or promise.

6. The men are committed to clinical work from the beginning.

This could be unqualifiedly true only of men who are slated for definite positions in practice. All others, after learning to know something of research, might be swayed to take it up.

7. Attractiveness of clinical work.
8. Majority prefer doing their work in relation with patients.
9. Greater pay and opportunities in full-time clinical departments, together with the possibilities of stepping into practice:
 - (a) If productive ability should cease.
 - (b) If promotion is blocked, or
 - (c) If larger returns are wanted.

Probably true; and if true it would be necessary to increase the attractiveness of the *fundamental* departments if the superstructure is not to topple over; this could be accomplished only apparently by supplying more funds for all purposes, and especially for the purpose of removing any discrepancy in salaries.

10. Possibility of doing as much research while practicing as while teaching.
11. Nonteaching positions offer better opportunities for research.
12. Commercial laboratories not alone offer more pay but the opportunity for research with no teaching.

This is true, at least in part, and such places will always be sought by those who are interested in research but not in teaching. Judging by the emphasis all have laid on investigation there is no doubt but that the vast majority of men who go into science do so because they are interested in research primarily. It must, therefore, be recognized that the best investigators will not go into or remain in university work unless ample time and every facility are provided for research. In addition, there should be university positions to take care of unusually productive men who do not care to teach. This should not be left solely to research and commercial institutions.

13. Falling off in attractiveness of teaching and research as a learned profession.
14. Few interested from the purely scientific side.

We doubt if teaching is any less attractive now than it ever was, present conditions merely serving to emphasize a condition which always has existed in the sciences. The indications are rather that interest in research in pure science

by no means has waned; all are pleading for an opportunity to do more, and recommend that research be used as the lodestone by which to attract men into the preclinical sciences as a career.

15. Attitude of the public toward universities.
16. Commiseration.
17. Lack of academic recognition.

It is a mistake to believe, as many apparently do, that the average teacher and investigator is going to exert any influence over any but his immediate colleagues and students. Personal characteristics, but especially financial limitations, are largely the factors at the bottom of these sources of discontent.

18. Unsympathetic attitude of clinicians toward research.

Men holding this attitude toward research in general have no place in our schools.

19. Insecurity of tenure of office.
20. Autocratic university administration and university politics.
21. Treatment of men in departments as subordinates rather than as colleagues.

These are not very often referred to, though a number include in their plans for improving conditions security of tenure after ability has once been demonstrated by a probationary period.

22. Medical curriculum too rigid.
23. State board rule requiring an intern year and not permitting a laboratory year in its stead, limits choice of students.

These are frequently mentioned; they seem to discourage the preclinical heads because they reduce the opportunity for training advanced students, a type of teaching to which none object.

Without going into further detail, the main impression this list leaves is that the majority of men are attracted to the preclinical sciences because they are interested in research primarily. Therefore, to interest men in these subjects and to keep contented those who have already committed themselves to them, it would seem to be necessary not alone to increase salaries but also to give to those who are fitted for investigation the maximum of time and facilities for the conduct of such work, relieving them as far as possible of teaching and of departmental routine. This again becomes a matter of finance.

The opinion frequently is expressed that only rarely will it be possible under the present circumstances to obtain recruits, for some of the preclinical sciences, at least, from among medical students; that in the future it might be necessary or even advisable to depend on philosophical students as a source of supply. Some go so far as to maintain that we shall have to go outside of the medical sciences for men. If the preclinical departments were departments of a university, as they should be and often are, there is no reason why they should not, as they do now, choose assistants from their philosophical students and graduates as well as from their medical students and graduates. But to deprive the heads of the preclinical departments of the opportunity of training investigators, of turning out their own students, would merely have the effect of adding another source of aggravation to the many they are contending with already.

But, to judge by the replies, to substitute graduates in philosophy for graduates in medicine as assistants would merely have the effect of postponing the evil day; for it would seem that, recognizing the power of the M.D. degree, as many of the former, who are now in the preclinical sciences, as find it possible carry work toward that degree and then go into practice. Furthermore, it will be noted that

it is not alone the "medical professors" who are dissatisfied, but the "lay professors" as well.

Finally, attention might be drawn to a suggestion that is frequently found (in at least twenty-two of the replies), in connection with Questions 3 and 4, with regard to means by which men might be led to enter a preclinical science as a career, because it is one which possibly could be put into effect, though, perhaps, it should not be tried until the main difficulty has been met. This suggestion is to put at the disposal of the preclinical departments a number of attractive assistantships and research fellowships so that a man who wished to obtain additional training in one of the fundamental medical sciences, either for the purpose of better preparing himself for practice or for a post in a clinical department, would find no financial obstacle in his way. It is felt that some of the men availing themselves of such appointments might become sufficiently interested to give up their first intentions and become full-time members of a department of a preclinical science. In this way, possibly, depletion of the fundamental departments through transference of men to clinical departments could be avoided.

CONCLUSIONS

The committee is convinced that:

1. There is a great paucity of satisfactory assistants in the preclinical departments.
2. Insufficient immediate and prospective financial support of the preclinical departments as compared with financial support obtainable in other directions is the main, though perhaps not the only, deterrent.
3. This paucity is seriously hampering the development of the preclinical sciences and, through them, of medicine as a whole.

RECOMMENDATIONS

1. In the opinion of the committee, the only effective step the council could take in the matter would be immediately to inform of the actual state of affairs those who alone have it in their power to remedy the situation, namely, the trustees and executives of universities, the medical profession and public-spirited citizens.
2. In the committee's judgment, the most effective and only practicable way of accomplishing this end would be to publish the foregoing analysis of the replies to the questionnaire, together with a representative reply from each of some twenty to thirty schools, editing the replies only to the extent of obscuring the identity of the writer and of eliminating irrelevant matter.

Occupational Diseases.—In a monograph on the occupational factor in tuberculosis, Dr. G. M. Kober states that diseases of occupation are everywhere assuming more and more importance, not only to wage earners and employers, but also to physicians, who, in order to make an early diagnosis and give the patient the full benefit of treatment, should know the conditions injurious to health under which our fellow men and women live and work. In countries and states where reports of certain occupational diseases are compulsory, it is quite possible to secure fairly reliable data as to the number of cases of specific industrial poisoning. Such special investigations are all the more important when it is remembered that even the most complete statistics fail to reveal all the factors which influence the health and longevity of operatives. Great differences are found in the conditions under which the work is performed, some of which are entirely avoidable, while others are not, and it is hardly fair to characterize certain trades as dangerous when experience has shown that no harm results when proper safeguards have been taken. In the consideration of this question, the personal element of the workmen, their habits, mode of life, and their physical fitness cannot be ignored.—*Pub. Health Rep.*, March 26, 1920.

Social Medicine and Medical Economics

PROPOSED PUBLIC HEALTH REORGANIZATION IN NEW YORK

Senate bill 1533, introduced into the New York Legislature on March 25, provides for an extensive reorganization and amplification of the state public health machinery. It might be regarded as an alternative and substitute for the Davenport Compulsory State Health Insurance Bill. It seeks to remedy alleged evils through the development of state public health rather than through compulsory health insurance. The bill provides that the board of supervisors (which corresponds in New York to the county commissioners in other states) of the county, with the approval of the state commissioner of health, may establish such a county, or any part of a county, as a health district and in such event shall appoint a board of health for each district consisting of five members, at least one of whom shall be a physician. The members of the board are to receive actual expenses but no salary. The board is authorized to appoint a district health officer possessing such qualifications as the public health council (an advisory body to the state department of health) may prescribe. His salary is to be fixed by the district board of health. The board of supervisors is authorized to establish a health center, or centers, which shall include (1) the erection of a new hospital, or arrangements with existing hospitals, with special provisions for hospital treatment of tuberculosis and other communicable diseases, maternity cases, children and mental diseases; (2) clinics for outpatients, including maternity, prenatal and child welfare clinics and clinics for tuberculosis, venereal diseases, mental and nervous diseases and defects, dental clinics, schoolchildren clinics and general surgical and diagnostic clinics; (3) for clinical, bacteriologic, roentgen-ray and clinical laboratories, auxiliary to the state laboratories and affording facilities for the diagnosis and treatment of disease; (4) for public health nursing service for all parts of the district; (5) for cooperation with the department of education in securing proper medical supervision and medical school inspection for schoolchildren; (6) for a periodic medical examination for such inhabitants of the district as desire it and are willing to pay a proper charge therefor; (7) for headquarters for all other public health, medical nursing and other public welfare agencies of the district. In addition to levying taxes for these purposes, the board is authorized to accept and hold in trust for the county any gifts or bequests that may be made for this purpose.

The board of supervisors is authorized to appoint a board of managers of the health center consisting of seven members, one of whom shall be the county judge, one, a woman and two, legally qualified physicians. The board of managers is authorized to appoint a superintendent to the health center and to fix his salary, to exercise general management of the center and to make rules and regulations for the care and treatment of patients and the fixing of fees and salaries. Compensation for physicians and surgeons rendering services in hospitals and clinics is to be fixed by the board of managers. The board is also authorized to erect buildings, to appoint medical boards and members of the various staffs, to employ public health nurses, to equip and maintain the health center, to keep all records, and to collect and disperse all money received. The city council of any city in the state is authorized to establish one or more health centers in the city and to exercise all of the powers conferred on the county boards of supervisors.

The last section of the bill provides for state aid in the creation and administration of health centers. In the con-

struction and equipment of hospitals, one half of the cost, not to exceed \$750 a bed nor one bed for each 500 of the population affected, is to be defrayed by the state. A state grant is provided of 75 cents per day for each free patient and for one half of the cost of the installation of the outpatient clinic, not to exceed \$5,000, for the expenses of free clinical treatment, not to exceed 50 per cent. of the cost nor an average of 20 cents per treatment. The state will also pay one half of the actual cost of laboratories, not to exceed \$1,500 for the initial installation and equipment nor \$3,000 for the maintenance of each laboratory. The state is to contribute at the rate of 10 cents per capita per annum toward the salaries of deputy health officers in health districts with a population of less than 1,500, and of 5 cents per capita per annum in districts with a population of from 1,500 to 3,000, this amount to be in addition to the salaries paid the district health officers by the county board of supervisors. The work of all health centers, hospitals, clinics and laboratories is to be subject to inspection and standardization by the state department of health, and state grants are to be paid only on the written approval of the state commissioner of health following such inspections. One hundred thousand dollars is appropriated for expenses to be incurred by the state department of health in putting this act into operation.

This bill adroitly combines in one measure provisions for county boards of health and whole time health officers, county hospitals, local health centers and dispensaries, public health nurses and local laboratories and opportunities for periodic medical examinations for the public. It aims to meet the need for better medical services, especially in rural districts, through the development and expansion of state public health organization and activities rather than by the creation of a system of compulsory health insurance. The creation and administration of departments or boards for the conservation of the public health have come in the last fifty years to be recognized as a legitimate function of the state. Compulsory, state supervised insurance is a new and untried plan in this country. If the proposed elaboration and extension of state public health functions and activities will be as effective in correcting the alleged evils as the proposed compulsory health insurance plan would be, then the burden of proof is on the proponents of compulsory health insurance to show why their plan should be adopted rather than that of the extension of state public health functions with which the American people are familiar.

NEW YORK CHAMBER OF COMMERCE OPPOSES COMPULSORY HEALTH INSURANCE

The New York Chamber of Commerce at a regular meeting held April 1 unanimously adopted a report presented by its committee on insurance, opposing the bill introduced by Senator Davenport providing for compulsory state health insurance. The committee recommended, a year ago, that a commission be created to make a comprehensive study of health insurance on behalf of the state. This recommendation was not followed. Further study of the subject has convinced the committee that compulsory health insurance attacks the problems involved from the wrong point of view and is economically unsound and unwise. In support of this conclusion the committee submits nineteen general statements, from which we quote:

It is opposed to sound public policy in a democracy, in fostering objectionable class distinctions and a dangerous tendency toward a stratification of industrial society.

It is opposed to public policy in favoring a further encroachment on private rights and privileges, including the most personal concerns of the individual, and the supervision,

control and direction of the person in matters of health and welfare.

It is a danger to democracy, in that the promises made are impossible of fulfilment, and on this ground will ultimately create an unwholesome industrial unrest.

It is a delusion in that the poorest poor, who are most urgently in need of sympathetic medical and financial support and assistance, are largely if not wholly outside the sphere of social insurance activities of any and every kind.

Such demand for compulsory health insurance as exists has been artificially created by a skilful propaganda.

It is at best a palliative, and does not reach the seat of the difficulty.

It does not promote the health of the individual, but rather fosters a tendency toward malingering and an undue prolongation of minor ailments for the purpose of wrongful gain.

Experience in other countries shows that medical treatment under its rules results in a standardized method of mediocre practice—the doctor who gives his whole time to the service reduces his profession to a mere trade; the doctor who gives only part of his time to the practice is bound to give it indifferent attention.

Experience abroad has also shown that medical practice under this system tends strongly toward a system of public medicine, opinion being divided as to whether under such a system private practice should be allowed at all, or whether the system should be universal; in other words, whether the doctor should become a state employee, leaving private practice and the work of the specialists to the few who are unwilling to submit themselves to state control.

All the estimates in England have been more or less at variance with actual experience. The state contribution has been very much greater than had been assumed would be necessary at the outset.

Compulsory health insurance is an elaborate bureaucratic scheme which controls wage-earners' lives and wage-earners' incomes. The hope held out that the institution to be created will be thoroughly democratic and, apart from the overhead charges, self-sustaining, never has been and probably never will be realized. Control of essentials soon passes into the hands of the state authorities, with a corresponding increase in the power of bureaucracy.

Medicolegal

Mental Reservations of Illegal Practitioner Not Recognized

(*Pickard v. Commonwealth (Va.)*, 100 S. E. R. 821)

The Supreme Court of Appeals of Virginia, in affirming a judgment of conviction of defendant Pickard, a colored man, says that he was convicted and sentenced to pay a fine of \$250, and to confinement in jail for three months, for practicing medicine without having obtained a certificate from the state board of medical examiners. He had been for a number of years engaged in selling, through the agency of a drug store, certain proprietary medicines of his own manufacture. He maintained an office, where his patrons would resort to consult him, and he would advise them which of his remedies, if any, was suited to their case, and direct them to the drug store where it could be bought. Subsequently he had his business incorporated, and sold his medicines direct to the trade without the intervention of a druggist. He described his general course of business substantially as follows: When a customer would call for a particular medicine, he would sell the remedy wanted, while others would describe their symptoms, and he would prescribe which of his medicine would suit the case. In such instances he stated that he made no charge for advice and received only the price of the medicine.

A witness for the commonwealth testified that her son, aged 5 years, was ill, and she took him to the office of the accused for medical advice and treatment; that he placed the child on a table and felt his pulse and examined his tongue for a few minutes, and said: "Well, I tell you this child has the kidney trouble, and has it right bad," and if I didn't attend to it right away it would go into meningitis or something bad." The witness requested him to prepare the right medicine for the child; but he said it would take him a long

time, and told her to come back the next day. She returned accordingly and paid him \$2 for the medicine. She had heard that he could tell what was the matter with the child as soon as he saw it, and went to his office to consult him as a physician. He did not tell her the name of the remedy, but said he would prepare a medicine that would be suitable treatment. After taking the medicine the child grew worse, and she called the accused to the telephone and told him of the child's condition. He advised her to give him one or two tablespoonfuls of "Syrup of Figs" until it acted, and then give him his medicine again. The accused in essentials corroborated the testimony of the witness. He admitted that he diagnosed the case and prescribed for the patient, and compounded and supplied the remedy for compensation. He moreover acknowledged that he had done and was then doing the same thing for numerous other patients; that he claimed and announced to the public generally his ability to diagnose diseases and compound and furnish remedies for their cure. Yet he qualified his statement by alleging that he did these things, not as a physician, but to advertise his medicine, and charged for the medicine, and not for examinations and advice. He confessed that he had never been examined by the board of medical examiners, and held no certificate from them, and had no right to practice medicine in the state. The verdict of the jury was fully sustained by the evidence.

The law does not recognize the mental reservations of the accused, by which he bunglingly attempted to escape the consequences of his flagrant and habitual violations of the law. The object of the statute is to protect the public against just such impostors. A number of exceptions were taken by the accused during the progress of the trial to rulings of the court, but they did not call for special notice, since the case plainly came within the rule that, when the appellate court can see from the entire record that no other verdict could rightly have been found under correct instructions, or that the accused could not have been prejudiced by the rulings of the trial court, it will not reverse the judgment and set aside the verdict.

Hospital Treating White Patient as a Colored One

(*Collins v. Oklahoma State Hospital et al.* (Okla.), 184 Pac. R. 946)

The Supreme Court of Oklahoma, in affirming a judgment sustaining a demurrer to the petition in this action for alleged libel holds that a cause of action for libel cannot be maintained against a hospital for the insane on account of the act of its officers and employees in placing a white patient in that part of the institution set apart and used for colored patients. The court says that it was alleged in the petition that the defendant state hospital was the successor to a sanatorium company; that the plaintiff took his daughter, who was a white person and insane, to the sanatorium company for treatment, she being received and placed in a ward used by the white people; that a few days thereafter those in charge of the institution placed her in a ward set apart for negro patients, and entered on its records opposite her name the word "colored," and thereby held her out to the world as having negro blood, which condition continued about six months. To write of or concerning a white person that the person is colored is libelous, in and of itself, in Oklahoma. But, under the allegations of the petition, the writing of the word "colored" opposite the name of the patient, on the records of the institution, was not a publication, as it was not alleged that it was ever seen by any one, or that the books had ever been examined by any one whatsoever, or that the word thus written had ever been seen or read by any person whomsoever. This was necessary before an action of libel could be based thereon, so far as the writing of the word was concerned. Necessarily the person who wrote the word in the books must have seen it, but that person must have been the agent of the corporation, if the act was said to be the act of the corporation, and such agent was for that purpose the corporation itself. It can hardly be said to be a publication of a libel for one to show the libelous matter to himself.

Nor can the court say that placing a white patient in that part of the institution set apart for colored patients comes

within the application of the Oklahoma statute so as to make it libelous. However, if it were libelous, the court doubts exceedingly whether, under the provision of the statute, the plaintiff would have a cause of action therefor.

For a second cause of action it was alleged that the defendants did commit a wrongful libel by publishing a written statement made by them to the plaintiff, in the form of a letter which stated that, in answer to one of his, I "beg to say that Lee Collins (Col.) is in fairly good mental condition; also good physical condition," etc. But the court is of the opinion that the entire contents of this letter was privileged. It was written by the superintendent of an institution having in charge the patients of the state, helpless and unfortunate as they were, to the father of one of the patients, no doubt grievously interested in that patient's welfare. The law as well as the dictates of common humanity imposed on the superintendent of that institution the duty of answering inquiries of such character, and likewise the duty of answering fully, fairly and freely as to the condition of the patient inquired about. As the court views it, the subject-matter of the letter was Lee Collins, and it was the duty of the superintendent to write to her father, not alone as to her mental and her physical welfare, but any other fact or circumstance which he should know in order that he might be the better enabled to aid and assist in her comfort and welfare. If she was regarded at the institution as colored, it was his duty to inform the father of that fact, so that, if an injury was being done to her, it could be remedied; and if the letter, which was the publication complained of, was protected by the rule of being qualifiedly privileged in all other things save and except the use of the abbreviated word "Col.," then the entire subject matter of the letter was likewise within the rule.

Society Proceedings

COMING MEETINGS

- AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.
 Air Service Medical Assn. of the U. S., New Orleans, April 26.
 Alabama State Medical Association, Anniston, April 20-22.
 Alpha Omega Alpha Honorary Fraternity, New Orleans, April 26.
 American Association of Anesthetists, New Orleans, April 26-27.
 American Association of Physicians, Atlantic City, May 4-5.
 American Association for Thoracic Surgery, New Orleans, May 1.
 American Dermatological Association, Asheville, April 22-24.
 American Gastro-Enterological Assn., Atlantic City, May 3-4.
 American Gynecological Society, Chicago, May 24-26.
 American Laryngological Association, Boston, May 27-29.
 American Medico-Psychological Assn., Cleveland, O., June 1-4.
 American Otological Society, Boston, May 31-June 1.
 American Pediatric Society, Highland Pk., Ill., May 31.
 American Proctologic Society, Memphis, Tenn., April 22-23.
 American Psychopathological Assn., Cleveland, O., June 5.
 American Radium Society, New Orleans, April 26.
 American Surgical Association, St. Louis, May 3-5.
 American Therapeutic Society, Philadelphia, May 7-8.
 Arkansas Medical Society, Eureka Springs, June 8-9.
 Assn. for Study of Internal Secretions, New Orleans, April 26.
 Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
 Assn. of Military Surgeons of the U. S., New Orleans, April 24.
 California State Medical Society, Santa Barbara, May 11-13.
 Connecticut State Medical Society, New Haven, May 19-20.
 Georgia Medical Association, Macon, May 6-8.
 Illinois State Medical Society, Rockford, May 18-20.
 Iowa State Medical Society, Des Moines, May 12-14.
 Kansas Medical Society, Hutchinson, May 5-6.
 Louisiana State Medical Society, New Orleans, April 24-26.
 Maryland, Med. and Chir. Faculty of, Baltimore, April 27-29.
 Massachusetts Medical Society, Boston, June 8-9.
 Medical Veterans of the World War, New Orleans, April 26.
 Michigan State Medical Society, Kalamazoo, May 25-27.
 Mississippi State Medical Association, Jackson, May 11-12.
 National Tuberculosis Association, St. Louis, Mo., April 22-24.
 Nebraska State Medical Association, Omaha, May 24-26.
 New Hampshire Medical Society, Concord, May 12-13.
 North Carolina State Medical Society, Charlotte, April 20.
 Ohio State Medical Association, Toledo, June 1-3.
 Oklahoma State Medical Association, Oklahoma City, May 18-20.
 Rhode Island Medical Society, Providence, June 3.
 South Carolina Medical Association, Greenville, April 20-21.
 So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
 Texas State Medical Association, Houston, April 22-24.
 The Radiological Society, New Orleans, April 23-24.
 Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
 West Virginia State Medical Association, Parkersburg, May 18-20.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, 1920, **19**, No. 3

- *Dilation of Colon in Children. A. E. Meyers, San Francisco.—p. 167.
*Osteogenesis Imperfecta Congenita. H. M. McClanahan and W. W. Willard, Omaha.—p. 181.
*Chondrodysplasia: Multiple Cartilaginous Exostoses. H. L. Dwyer, Kansas City, Mo.—p. 189.
*Calcium Metabolism of Infants and Young Children and Relation of Calcium to Fat Excretion in Stools. L. E. Holt, A. M. Courtney and H. L. Fales, New York.—p. 201.
*Renal Function in Scarlet Fever. B. S. Veeder, St. Louis and M. R. Johnston, M. C., U. S. Army.—p. 223.
Improved Needle for Sinus Therapy. A. Goldbloom, New York.—p. 229.
Review of Literature on Respiratory Diseases. L. C. Shroeder, New York.—p. 231.

Dilation of Colon in Children.—Myers is of the opinion that spasm is a cause of dilation of the colon. He reports one case in a child, aged 4 years, which was diagnosed both clinically and with the aid of the roentgen ray. Constipation dated from infancy and had been persistent. All sorts of drugs were tried, but no attention was given to the preponderance of starch in the diet. Assuming that spasm was playing a rôle in this condition, the child was put on increasing dosages of atropin, starting from 5 drops of a 1:1,000 solution, until the child complained of dryness of the mouth. Gradually, well done toast, cooked fruit and green vegetables were added to the diet and the atropin was decreased. The constipation ceased after the spasm was relieved and normal defecation followed. Five other similar cases are cited in which the starch free diet and atropin yielded equally good results.

Osteogenesis Imperfecta Congenita.—The study of the bone in the case reported by McClanahan and Willard showed evidence that the osteoblasts rising from vascular fibrous bone marrow, because of insufficient nourishment or some toxic influence, did not develop properly, but remained polygonal and later underwent metaplasia into osteoclasts. The patient was only 3 months old. Death occurred from exhaustion. According to the authors, this patient is the youngest dying from this disease on who a necropsy was performed with subsequent histologic study of the bones. A complete report of the findings is made.

Chondrodysplasia: Multiple Cartilaginous Exostoses.—Three members of one family were victims of cartilaginous exostoses. They were aged 7 and 29 years, and 20 months, respectively. The oldest patient was the father of the other two patients. The mother and another daughter, 5 years of age, were not affected. The bones involved were the tibia, femur, humerus and scapula. The cases are reported in detail, and the literature is reviewed.

Calcium Metabolism of Infants and Young Children.—In this paper the authors discuss the calcium metabolism of older children taking a mixed diet. Both healthy and rachitic children were the subjects of this study. With children taking a mixed diet, the absorption of calcium per kilogram was lower than that of infants taking modifications of cow's milk, averaging when the intake was adequate, 0.055 gm. of calcium oxid per kilogram. An intake of at least 0.09 gm. of calcium oxid per kilogram is necessary to insure a good absorption by children taking a mixed diet. The best absorption of calcium oxid occurred when the intake of fat exceeded 3.0 gm. per kilogram, and when, at the same time, for every gram of fat there was in the diet from 0.03 to 0.05 gm. of calcium oxid. When calcium in the form of chalk mixture (calcium carbonate) were added to the diet, there was a greatly increased absorption of calcium. When calcium was added as calcium acetate or as calcium phosphate the absorption was not increased. The excretion of calcium was not so closely related to the intake of calcium as in the case of infants taking modifications of cow's milk, and was not at all related to the fat intake. The calcium absorption of children with active rickets was lower than that of normal

children, even though the calcium intake was ample. The calcium excretion in the stools was somewhat higher than the average excretion in the stools of normal children. During recovery from rickets, the absorption of calcium was higher than the average for normal children. This improvement accompanied the taking of cod liver oil or additional butter with a diet containing an ample amount of calcium. The calcium excretion in the stools of children recovering from rickets was lower than in the stools of normal children. Cod liver oil increased the absorption of calcium, except in cases in which the intake of calcium or of fat was very low. The substitution of vegetable fats for milk fat did not affect the calcium metabolism of children taking a mixed diet.

Renal Function in Scarlet Fever.—The observations made by Veeder and Johnston in seventeen cases of uncomplicated scarlet fever and in two cases of scarlet fever with nephritis proved that, as a routine measure, the urinary examination for albumin, as ordinarily carried out in scarlet fever, is of more value than the functional tests in announcing the onset of an impending kidney complication.

American Journal of Public Health, Boston

March, 1920, **10**, No. 3

- Defense of Public Health Appropriations. E. C. Meyer, New York.—p. 201.
Control of Degenerative Diseases. F. S. Crum, Newark, N. J.—p. 210.
*Studies on Malaria Control. X. Cure of Infected Persons a Factor. C. C. Bass, New Orleans.—p. 216.
Standard Budget; Health Officer's First Need. H. Emerson, New York.—p. 221.
Vital Statistics in Canada. R. H. Coats, Ottawa.—p. 224.
African Aboriginal Therapy. P. A. E. Sheppard, Boston.—p. 227.
Causes of Army Rejections; What Health Officers Can Do to Remedy Conditions. F. R. Keefer, Carlisle, Pa.—p. 236.
Ideal Program for Child Hygiene. A. J. McLaughlin, Washington, D. C.—p. 240.
Illinois Program in Child Hygiene for 1920. C. W. East, Springfield, Ill.—p. 241.
Need of Standardization in School Hygiene Methods. H. O. Jones, Chicago.—p. 243.
School Hygiene for Rural Communities. G. Whitford, Ozone, Fla.—p. 246.
Some Important Factors in Preparation of Culture Mediums. L. Davis, Detroit.—p. 250.
Health Hazards of Dye Industry. A. K. Smith, Wilmington, Del.—p. 255.

Studies on Malaria Control.—Abstracted in THE JOURNAL, Nov. 22, 1919, p. 163.

American Journal of Roentgenology, New York

January, 1920, **7**, No. 1

- Plea for Use of Fluoroscope in Examination of Heart and Great Vessels. J. G. VanZwaluwenburg, Ann Arbor.—p. 1.
Roentgenographic Findings in Pericarditis with Effusion. G. W. Holmes, Boston.—p. 7.
Roentgen-Ray Studies of Seminal Vesicles and Vasa Deferentia After Urethroscopic Injection of Ejaculatory Ducts with Thorium. A New Diagnostic Method. H. H. Young and C. A. Waters, Baltimore.—p. 16.
Roentgen-Ray Diagnosis of Patent Ductus Arteriosus. Report of Case Complicated by Presence of Saccular Aneurysm. M. J. Hubeny, Chicago.—p. 23.
Roentgen-Ray in Canadian Expeditionary Force. R. Wilson, Toronto.—p. 26.
Radiotherapy of Forty Cases of Uterine Fibromyomas. A. Beclere, Paris.—p. 30.
Radiation in Inoperable Cases of Carcinoma in Female Genito-Urinary Organs. J. G. Clark and F. E. Keene, Philadelphia.—p. 36.
Three Years' Experience with Radium in Cancer of Uterus. E. C. Samuel, New Orleans.—p. 42.
Biological Reaction of Carcinoma Cells Produced by Radium Rays. Technique of Radium Therapy in Gynecology. H. Schmitz, Chicago.—p. 52.

Boston Medical and Surgical Journal

April 1, 1920, **182**, No. 14

- Osler as a Bibliophile. E. C. Streeter, Boston.—p. 335.
Osler as His Students Knew Him. J. H. Pratt, Boston.—p. 338.
Osler in the Early Days at the Johns Hopkins Hospital. W. T. Councilman, Boston.—p. 341.
Renal Function in Vascular Hypertension. J. P. O'Hare, Boston.—p. 345.

California State Journal of Medicine, San Francisco

March, 1920, **18**, No. 3

- Organization and Management of Hospitals. W. E. Musgrave, San Francisco.—p. 71.
Neuro-Otology: Its Relation to General Medicine. F. C. Lewitt, San Francisco.—p. 72.

- *Comparison of Action of Roentgen Rays and Radium. A. Soiland, Los Angeles.—p. 76.
 Refraction and Medicine. P. Sumner, San Francisco.—p. 78.
 Goiter. A. B. Cooke, Los Angeles.—p. 82.
 Cancer of Ear, Nose and Throat; Tuberculosis, Lupus and Various Minor Affections Treated by High Frequency Current. C. E. Welty, San Francisco.—p. 84.
 Aviation's Debt to Medicine. C. G. Stivers, Los Angeles.—p. 87.
 *Abducens Palsy; Transplantation of Vertical Recti in Three Cases. R. O'Connor, Oakland.—p. 90.
 Treatment of Fresh and Ununited Fractures of Femoral Neck. E. Jones, Los Angeles.—p. 92.
 War Wounds of Sinuses. H. A. Fletcher, San Francisco.—p. 94.
 Examination and Classification of Aviators with Special Reference to Effects of High Altitudes. J. F. Grant.—p. 96.

Comparison of Action of Roentgen Rays and Radium.—Soiland believes that the roentgen rays offer decided advantages in the treatment of lesions covered by, or affecting, the epithelium. On mucous membranes or in cavities where soft tissues predominate radium becomes the element of choice. This is particularly true in lesions involving the mouth and upper respiratory tract, the vagina, the uterus and the rectum. The best results in general are obtained by a judicious combination of both.

Abducens Palsy: Transplantation of Vertical Recti in Three Cases.—O'Connor states very emphatically that in cases of abducens palsy relief is possible, in spite of statements to the contrary in most textbooks on ophthalmology. Therefore, these patients should not be dismissed as incurable or told to wear a patch over one eye permanently but should be referred to the ophthalmologist early in order that the progress may be watched and operation done as soon as it is certain that power is not returning. The author describes his method of procedure and reports cases.

Iowa State Medical Society Journal, Des Moines

March 15, 1920, 10, No. 3

- Gallbladder from the Surgeon's Standpoint. O. J. Fay, Des Moines.—p. 63.
 Application to Civil Practice of Therapeutic Principles Established in Treating War Injuries to the Thorax. J. L. Yates, Milwaukee.—p. 67.
 Value of Public Health Education. E. G. Birge.—p. 69.
 Xerophthalmia. Report of Case. R. H. Parker, Des Moines.—p. 71.
 Some Suggestions. G. Kessel, Cresco.—p. 74.

Indiana State Medical Ass'n Journal, Fort Wayne

March 15, 1920, 13, No. 3

- Child Hygiene and the Doctor.—A. E. Schweitzer, Indianapolis.—p. 73.
 *Relation of Ophthalmology to Child Hygiene. J. R. Newcomb, Indianapolis.—p. 77.
 *Relation of Otolaryngology to Child Hygiene. D. W. Layman, Indianapolis.—p. 79.
 *Meningitis: Neurologic Manifestations. C. D. Humes, Indianapolis.—p. 85.

Relation of Ophthalmology to Child Hygiene.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1237.

Relation of Otolaryngology to Child Hygiene.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1237.

Meningitis: Neurologic Manifestations.—This paper was abstracted in THE JOURNAL, Oct. 25, 1919, p. 1308.

Journal of Laboratory and Clinical Medicine, St. Louis

March, 1920, 5, No. 6

- Chemical Changes in Blood in Disease. V. C. Meyers, New York.—p. 343.
 *A Third Model Illustrating Some Phases of Kidney Secretions. M. H. Fisher and G. D. McLaughlin, Cincinnati.—p. 352.
 Epidemiology of Influenzal Pneumonia. C. Lynch and J. G. Cumming, Newport News, Va.—p. 364.
 Studies on Pathogenic Anaerobes; Bacillus Welchii. B. Jablons, Washington, D. C.—p. 374.
 *Method for Collection of Urine in the Dog From Each Kidney Separately. F. S. Hopkins and W. C. Quinby, Boston.—p. 384.
 Some Limitations of Flotation Method of Fecal Examination. J. D. McDonald, Berkeley.—p. 386.

Some Phases of Kidney Secretion.—The question is raised by Fisher of the mechanism by which water is secreted by such a secreting parenchyma as a kidney. The experimental evidence is reviewed which indicates that only "free" water can be separated from the blood and that the separation of such water costs the kidney no work. This supports the conclusion that such separation is a mere filtration process,

and since the secreting parenchyma of such an organ as the kidney is a hydrated colloid which has properties closely akin to a solid hydrated soap, the filtration properties of such a soap (sodium stearate) were studied to see whether any analogy exists between its behavior and what may be observed biologically. Hydrated sodium stearate allows water to pass through it under slight hydrostatic pressure, the ease of such passage being increased as the concentration of the hydrated colloid is lowered. While "free" water passes readily through such a hydrated colloid, water tied to a hydratable colloid (liquid sodium oleate) cannot. Salt solutions lead to a greater filtration of water than plain water, and this (a) according to their concentration and (b) their kind, generally speaking. The higher the concentration of any salt, the greater the filtration of water. On the other hand, at given concentration, salts of ammonium or potassium produce less filtration than salts of sodium, and these less than those of magnesium or calcium. The theory of the action of these effects is discussed, it being pointed out that because of the existent differences in chemical composition of fatty acids and of the polymerized amino-acids known as protein it is possible in the former to produce only one series of salts as different bases are introduced into the fatty acid. In the case of the proteins a similar series may be produced, but because of the existence in the latter of NH groups, a second may be produced, through the linking of acid with these groups. Colloid chemical and physiologic behavior are, then, an expression of the solvation and solubility properties of the different compounds thus formed. The dangers of applying without due reserve indicator methods and the laws of dilute solutions of electrolytic dissociation, etc., to the normal cells and fluids of the body but not to their secretions is reemphasized.

Collection of Urine from Each Kidney Separately.—Hopkins and Quinby use the uterus as a receptacle of the products of one kidney while the normal relations between the bladder and other kidney are maintained.

Kentucky Medical Journal, Bowling Green

March, 1920, 18, No. 3

- Physical Examination of School Children. A. O. Pfingst, Louisville.—p. 63.
 Fractures of Cervical Vertebrae; Diagnosis and Treatment. F. P. Strickler, Jr., Louisville.—p. 64.
 War Surgery of Bones and Joints as Applied to Civil Practice. I. A. Arnold, Louisville.—p. 68.
 Transylvania Medical Library. A. H. Barkley, Lexington.—p. 74.
 Influenza or La Grippe. W. E. Reynolds, Hopkinsville.—p. 78.
 Pneumonias and Their Treatment. A. Baker, Berea.—p. 81.
 Diagnosis of Pulmonary Tuberculosis. S. R. Fairchild, Kevil.—p. 84.

Maine Medical Association Journal, Augusta

March, 1920, 10, No. 8

- Treatment in Tuberculosis. C. B. Sylvester, Portland.—p. 235.
 Incomplete Mastoid Operation as a Cause of Delayed Healing. F. T. Hill, Waterville.—p. 243.
 A Permanent Board of Organization for the Maine Medical Association. J. A. Spalding.—p. 250.

Medical Record, New York

March 27, 1920, 97, No. 13

- *Influence of Male on Production of Twins. C. B. Davenport, Cold Spring Harbor, N. Y.—p. 509.
 Medical Aspects of Endocrinology. J. J. Hertz, New York.—p. 511.
 Oral Sepsis: Role in Certain Orthopedic Conditions. J. Grossman, New York.—p. 514.
 *Feet, and Rebuilding Broken Arches. C. Cross, San Francisco.—p. 519.
 Saccharin. S. H. Blodgett, Boston.—p. 521.
 Measures of Intelligence Diagnostically Remeasured. J. V. Haberman, New York.—p. 523.

Influence of Male and Lethal Factors on Production of Twins.—The presence of lethal factors in the ovum or spermatozoon is regarded by Davenport as an influence in the fertilization and development of an ovum. Lethal factors may be brought into the zygote by the egg alone, by the sperm alone, or by both. They are not found in all the germ cells; it may be, in only a small proportion of them. When they occur in the gametes of both consorts, small families with some feeble children may be expected. But when they are absent in the germ cells of both parents, then,

in a good environment, the fertilized egg will develop vigorously with good prospects of reaching maturity. It is in such families that any tendency toward double ovulation will be expressed in the production of healthy twins. Statisticians have long recognized that the proportion of twins is larger in highly fecund families than in those that produce few offsprings, and this is now seen to be because in such highly fecund families the germ cells contain few lethal factors and there is a larger chance that double ovulation will result in twins. Davenport is convinced that it is thus clear where the male factor comes in in twin production, for the father can, as much as the mother, determine whether both of a pair of simultaneously ovulated eggs shall be fertilized, and whether or not they shall receive lethal factors.

Rebuilding Broken Arches.—A plan of treatment to rebuild the broken arch, while the feet are in daily use during the process of rebuilding, is reported by Cross. The plan consists of a system of exercises on specially designed exercising appliances, massage, manipulation, mechanical force, static and dynamic force, support, and then gradual removal of the support. In rebuilding broken arches, the aim of this system of treatment is to reconstruct the arch and to strengthen the foot that it will stand ordinary usage, without the aid of an arch support. Cross emphasizes that arch supports, at best, are but splints and should be used only as such. Constantly wearing any kind of a rigid splint weakens the muscles because free action is restricted. This is especially true when metal splints, in the form of arch supports, are worn under the feet, and the general results from their use is a degree of atrophy of some muscles and weakening of others. The process of rebuilding broken arches by this system aims to follow the same lines followed by engineers to replace a bridge span, or a house foundation, that is out of alignment. A careful drawing is made of the foot and this is surveyed to determine the degree of distortion or displacement. Then begins a system whereby the broken arch is blocked up or strapped up by degrees, as rapidly as possible with comfort, until normal function is restored. Clumsy and freak shoes are not a part of this system of treatment. Any shoe the patient selects which is long enough and wide enough can be worn.

Modern Hospital, Chicago

March, 1920, 14, No. 3

- Brief Review of Hospital Standardization in 1919. J. F. Bresnahan, Chicago.—p. 163.
Hospital Construction in 1919. R. E. Schmidt, Chicago.—p. 173.
Development and Progress in Field of Hospital Administration. A. R. Warner, Cleveland.—p. 176.
Progress in Nursing Education During 1919. I. M. Stewart, New York.—p. 179.
The Present Trend of Medical Social Work. E. G. Henry, Indianapolis.—p. 185.
Salient Points of Progress in Tuberculosis Sanatorium Development in 1919. T. B. Kidner, New York.—p. 188.
The 1919 Laboratory Field Retrospect. L. B. Wilson, Rochester, Minn.—p. 191.
Health Progress in Industry in 1919. B. B. Lyons, Chicago.—p. 193.
Progress in Mental Hygiene, 1919. F. E. Williams.—p. 197.
Progress in Out-Patient Service During 1919. M. M. Davis, Boston.—p. 201.
Developments in Dietetics During the Year 1919. L. Graves, Ithaca.—p. 203.
Year's Review of Drugs and Chemicals. J. K. Thum, Philadelphia.—p. 207.
Progress in Eradication of Venereal Disease. A. N. Thomson, New York.—p. 208.
Health Center Movement in United States. J. A. Tobey, Washington, D. C.—p. 212.
Hospital Relay of World War. F. Kramer and R. H. Kettell, Washington, D. C.—p. 215.
Landscape Treatment of Hospital Grounds. C. W. Leavitt.—p. 229.
Suggestions for Health Legislation. H. W. Jordan, Syracuse, N. Y.—p. 230.
Health Insurance. A. R. Warner, Chicago.—p. 233.
Group Action Helps Raise Rates of Milwaukee Hospitals. C. W. Munger, Milwaukee.—p. 239.
Commercial Syrups. J. P. Street, Indianapolis.—p. 248.
A History Method for Gonorrheal Cases. H. A. Fisher, Brooklyn.—p. 252.

New York Medical Journal

March 27, 1920, 111, No. 13

- *Pregnancy Complicated by Large Fibroid Tumor. J. C. Applegate, Philadelphia.—p. 529.

- Lethargic Encephalitis. Report of Cases. H. Climenko, New York.—p. 531.
Umbilical Hernia. N. A. Ludington, New Haven, Conn.—p. 540.
Two Cases of Displacement of Ilium. E. F. Cyriax, London.—p. 546.
*Case of Wladimiroff-Mikulicz Operation. M. H. Vegas, Buenos Aires.—p. 550.
Extensive Destruction of Sella Turcica Without Clinical Symptoms. C. Rosenheck, New York.—p. 554.
What is the Cause of Goiter? J. C. O'Day, Honolulu.—p. 556.
Buccal Leukoplasmia. C. G. Cumston, Geneva.—p. 556.

Pregnancy Complicated by Large Fibroid Tumor.—The point made by Applegate in connection with the report of this case is, that sterility from any of the well known causes, including abnormalities of position of construction of the uterus, tubes or ovaries, faulty internal secretions, and hyperacidity of the vaginal secretions, may be regarded at least as a predisposing cause of fibroids of the uterus. In other words, absence of the childbearing functions favors hyperplasia of the loosely constructed involuntary muscle fibers and connective tissue cells of the uterus.

Case of Wladimiroff-Mikulicz Operation.—This operation consists in the removal of the tarsus and of the distal end of the bones of the leg and then placing the foot in a marked equinus position in such a way as to transform the walk from plantigrade to digitigrade. The indications for this operation are tuberculosis of the tarsus and ankle, chronic ulcers of the heel, fractures accompanied by osteomyelitis of the calcaneus and neighboring bones, as in the case described by Vegas. Of late indications have been extended to include the lengthening of limbs shortened by pathologic luxations in the coxalgia or ample resections of the knee followed by shortening of the member in advanced equinoparalytic feet.

Northwest Medicine, Seattle

March, 1920, 19, No. 3

- Principles of Healing. J. D. Windell, Spokane.—p. 59.
Review of Military Urologic Service. A. H. Peacock, Seattle.—p. 64.
Urinary Frequency. A. E. MacKay, Portland.—p. 68.
Urinary Fistulae. G. S. Whiteside, Portland.—p. 69.
Phosphatic Index as Aid in Diagnosis. J. H. Dowd, Buffalo.—p. 71.
Differential Diagnosis in Epidemic Lethargic Encephalitis. K. Winslow, Seattle.—p. 73.

Oklahoma State Medical Ass'n Journal, Muskogee

March, 1920, 13, No. 3

- Hypertrophic Stenosis of Pylorus in Infancy. G. A. Wall, Tulsa.—p. 87.
Exophthalmic Goiter. W. H. Livermore, Chickasha.—p. 94.
Acute Infections of Upper Respiratory Tract. A. L. Guthrie, Oklahoma City.—p. 96.
Primary Glaucoma; Recovery Without Operation. J. R. Phelan, Oklahoma City.—p. 99.
Surgery of Tonsil. H. C. Todd, Oklahoma City.—p. 100.
Ear in Recent Influenza Epidemic. L. C. Kuyrkendall, McAlester.—p. 102.

Rhode Island Medical Journal, Providence

March, 1920, 3, No. 3

- Anesthetic Problem in Lung Surgery. J. T. Gwathmey, New York.—p. 41.
*Theilerium Hominis. C. F. Peckham, Providence.—p. 47.

Theilerium Hominis.—Peckham reports a hematozoic parasite found in cases of mucous colitis and describes its life history. In searching the literature of human parasites, he was unable to find any report of the observation of a hematozoic organism of dumbbell form.

Southwestern Medicine, El Paso, Texas

March, 1920, 4, No. 3

- Influenza Epidemic Among Employees of Consolidated Arizona Smelting Company, Associated Companies and Their Families. C. S. Vivian and E. R. Charvoz, Globe, Ariz.—p. 1.
Smith-Indian Cataract Operation. E. N. Bywater, Tucson, Ariz.—p. 6.

Tennessee State Medical Ass'n Journal, Nashville

March, 1920, 12, No. 11

- Headache; Its Constitutional Causes. O. S. Warr, Memphis.—p. 399.
Headaches from Nasal Origin. J. J. Shea, Memphis.—p. 402.
Roentgen-Ray Diagnosis in Some Bone Pathology. J. H. King, Nashville.—p. 404.
Malformations of Anus and Rectum. D. R. Pickens, Nashville.—p. 406.
Dental Sanitation. F. W. Brownfield, Granville.—p. 409.

Virginia Medical Monthly, RichmondFebruary, 1920, **46**, No. 11

- Relation of Etiology to Treatment of Pelvic Inflammation. C. R. Robins, Richmond.—p. 279.
- *Treatment of Bronchial Asthma with Vaccines. J. M. Hutcheson and S. W. Budd, Richmond.—p. 281.
- Enterostomy for Postoperative Intestinal Obstruction. A. S. Brinkley, Richmond.—p. 283.
- Diabetes. W. W. Silvester, Norfolk.—p. 286.
- Tetany in Adults. W. H. Higgins, Richmond.—p. 290.
- Perineum, As It Concerns Obstetrics. G. B. Byrd, Norfolk.—p. 295.
- Old Age. R. H. Carthright, Vinton.—p. 297.

Treatment of Bronchial Asthma with Vaccines.—Of a series of ninety patients examined and in whom a diagnosis of bronchial asthma was made, eighty-one have been treated with autogenous vaccines by Hutcheson and Budd. So far as possible, those cases were selected in which obvious and accessible foci of infection had been removed. Most of these patients had suffered over a considerable period and were well versed in the various cures, while in many instances one or more operations on the nose, throat or sinuses had failed to give relief. Where the first series of injections was ineffective, if possible, a second vaccine was prepared and administered and this was also done in a number of cases after relapse had occurred. In fifty-three cases (74.6 per cent.) there followed the administration of the vaccine either complete freedom from asthma or a definite decrease in the frequency and severity of the attacks. The longest duration of complete relief was three years. The longest period of relative relief was four years and two months. In eighteen cases (25.4 per cent.) no definite benefit was derived from the vaccine. In none of these cases, however, was the treatment repeated after the first series of injections had failed.

West Virginia Medical Journal, HuntingtonMarch, 1920, **14**, No. 9

- Surgery of Chest. O. F. Covert, Moundsville.—p. 321.
- Treatment of Ununited Fractures. A. J. Noome, Wheeling.—p. 337.
- Principles Preliminary to Treatment of Functional Nervous Disorder. T. A. Williams, Washington, D. C.—p. 346.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

February, 1920, No. 235

- History of Electrotherapy. W. J. Terrell.—p. 277.

Dublin Journal of Medical Science

March, 1920, Fourth Series, No. 1

- Dysentery in Dublin in 1919. A. Stokes and J. W. Bigger.—p. 3.
- Problem of Dublin Voluntary Hospitals. R. J. Rowlette.—p. 9.
- Case of Lethargic Encephalitis. G. E. Nesbitt.—p. 24.
- *Modified Kjeldahl Method for Estimation of Nitrogen. Carbazol Test for Nitrites. Color Test for Tryptophane in Urine. W. A. Fearon.—p. 28.

Tests for Nitrogen, Nitrites and Tryptophan in Urine.—The most important alterations in the original technic of the Kjeldahl method made by Fearon concerned the incineration. He found that a mixture of sulphuric and phosphoric acids gave a much better result than sulphuric acid alone. The following mixture is recommended: sulphuric acid, 100 c.c.; phosphoric acid, 200 gm.; copper sulphate, 5 gm. The mixture is best made by dissolving the phosphoric acid and the copper sulphate in the minimum amount of water, and then adding the sulphuric acid. The amount required for incineration will depend very much on the material under examination. Generally, from two to three times its volume will be sufficient. For extensive work the steam distillation method has been found the most satisfactory. Rapid estimations can be carried out very well by the Cole method of distilling with alcohol. For titrations, methyl red, 0.1 per cent., was found to be a very good indicator. The following is stated to be a simple test for nitrites in urine or similar fluids: To a few cubic centimeters of strong sulphuric acid in a test tube a very small quantity of carbazole is added and well shaken. If the sulphuric acid is pure, no color

change will be observed. Then, on adding a drop of urine, if nitrites are present, a deep green color will develop. The test is extraordinarily sensitive, and will show nitrites to the extent of about one part in half a million. If urine containing tryptophan be treated with excess of the glyoxylic reagent and a drop is added to strong sulphuric acid, the tryptophan condensation body interacts with the nitrites of the urine to give a deep green color. This test is not given by indol or skatol.

Indian Medical Gazette, CalcuttaFebruary, 1920, **55**, No. 2

- Ulceration of Stomach and Duodenum and Resultant Obstruction in Outlet of Stomach Treated by Posterior Gastro-Enterostomy in a Series of One Hundred Cases. S. H. Pugh.—p. 41.
- Typhus and Typhus-Like Fevers in Birjand, East Persia. A. S. Fry.—p. 47.
- Medical Inspection of Schools. B. N. Ghose.—p. 50.
- Kala-Azar. S. Kundu.—p. 53.
- Second Series of Twenty-Five Cases of Malaria Treated by Hypodermic Injections of Cinchonin Bihydrochlorid. D. S. Ollenbach.—p. 57.
- Acute Necrotic Parotitis. R. C. McWatters.—p. 57.
- Case of Pneumococcal Arthritis Complicating Tonsillitis. C. Corner.—p. 58.
- Congenital Abnormalities. J. C. Aich.—p. 59.
- Cobra Poisoning. K. K. Alandikar.—p. 60.

Japan Medical World, TokyoFeb. 7, 1920, **10**, No. 6

- Nature of Virus of Typhus Fever. S. Kusama.—p. 125.
- Action of Epinephrin and Hydrochloric Acid against Tetanus Toxin. R. Kobayashi.—p. 126.

Feb. 14, 1920, **10**, No. 7

- Anthropometry of Civilized Man. A. Macdonald.—p. 145.

Feb. 21, 1920, **10**, No. 8

- Anthropometry of Civilized Man. A. Macdonald.—p. 165.

Journal of Pathology and Bacteriology, Cambridge

- *Bacteriologic Characteristics of Tubercle Bacilli from Different Kinds of Human Tuberculosis. A. S. Griffith.—p. 129.
- Serologic Groupings of Vibrios Septique and Their Relation to Production of Toxin. M. Robertson.—p. 153.
- *Inagglutinable Form of Shiga's Dysentery Bacillus, Experimentally Derived from an Agglutinable Culture. T. H. C. Benians.—p. 171.
- Method of Determining Several Viscosities Simultaneously. J. Holker.—p. 177.
- Viscometer as a Means of Determining Specific Gravity. J. Holker.—p. 185.
- Method of Testing Temperature Sense. J. Holker.—p. 188.
- Methods of Cultivating Anaerobic Bacteria. J. Holker.—p. 192.
- *Streptococcal Ulcerative Endocarditis of Aortic Valves, Occurring in an Infant Aged Six Months. J. H. Dible.—p. 196.
- Classification of Forty-Eight Strains of Flexner Y and Allied Bacilli Mainly by Serologic Tests. E. M. Berridge and E. Glynn.—p. 199.
- Serum Reaction in Bacillary Dysentery. Observations on Agglutination, with Special Reference to the Use of Freshly Prepared Bacillary Emulsions. J. W. McLeod and A. G. Ritchie.—p. 217.
- Synthesis of Tryptophane by Certain Bacteria; Nature of Indole Formation. W. J. Logie.—p. 224.

Bacteriologic Characteristics of Tubercle Bacilli from Different Kinds of Human Tuberculosis.—The main objects of Griffith's investigations were (1) to determine by the examination of unselected cases the relative proportions of the human and bovine types of tubercle bacilli in different kinds of human tuberculosis, and (2) to ascertain the frequency of occurrence and the distribution in the human body of variant strains of tubercle bacilli. Of 1,068 persons examined, 803 showed human bacillus infection; 194 bovine bacillus infection and five a mixed infection. Of various regions involved, the examination showed that bovine infections occurred as follows: Bones and joints, 19.7 per cent.; genito-urinary organs, 17.65 per cent.; cervical glands, 46.3 per cent.; meninges, 20 per cent.; scrofuloderma, 34.65 per cent.; lupus, 48.9 per cent. As to the age periods, bovine infection occurred as follows: during first five years of life, 37.55 per cent.; from 5 to 10 years, 29.45 per cent.; from 10 to 16 years, 14.66 per cent.; after 16, 6.25 per cent.

Inagglutinable Form of Shiga's Dysentery Bacillus Derived from Agglutinable Culture.—An inagglutinable strain of Shiga's bacillus was experimentally produced by Benians from an agglutinable strain by subcutaneous inoculation into a guinea-pig of the agglutinable bacteria suspended in mucilage of tragacanth. This inagglutinable bacillus (as

isolated from a separate colony), from time to time threw off agglutinable strains, especially soon after it was first isolated. The inagglutinable colonies were of two types, clear and opaque, on agar, but not distinguishable in broth cultures. The inagglutinable strain usually sedimented both in broth and saline. The inagglutinable strain failed to absorb agglutinin from a standard serum; it also failed to produce agglutinin when injected into rabbits. The agglutinable strain, derived from the inagglutinable, absorbed agglutinins entirely from a standard serum; on injection into rabbits it produced an agglutinating serum. Both strains were highly pathogenic for rabbits, the inagglutinable strain apparently more so than the other. Rabbits immunized against either strain were protected against a lethal dose of the other strain. In the animal injected with the inagglutinable bacillus an immunity developed against both agglutinable and inagglutinable strains without the production of any agglutinins. The development of agglutinins is not, therefore, necessarily a part of the processes of immunity. The inagglutinable strain was much more rapidly destroyed by the bactericidal bodies of the serum than the agglutinable. The guinea-pig inoculated with the bacteria embedded in mucus formed no agglutinins or demonstrable protective antibodies. It is suggested that the experiment throws light on two clinical conditions: (1) chronic typhoid abscess; (2) the "carrier" condition of enteric and dysentery bacilli in the alimentary system.

Streptococcal Ulcerative Endocarditis of Aortic Valves in Infant Aged Six Months.—The total duration of fatal illness of the infant whose case is cited by Dible was only eight days. The condition developed while the child was in the hospital, suffering from crusted impetiginous sores on the head and upper part of the chest, and emaciation; there was also a discharging ear. It was noted, on admission, that the child was small. It frequently vomited its feeds, and also suffered from diarrhea. Under treatment the general condition improved, and three weeks after admission the sores on the head and body were healed, the diarrhea had ceased, and the general condition was improving. This improvement continued until the twenty-seventh day of residence in hospital. Up till this period the temperature had been within normal limits, but on the evening of this day it commenced to rise and on the following evening reached 101 F. During the six succeeding days the temperature oscillated irregularly between normal and 102 F., usually remitting in the mornings. No cause for this acute illness was discovered, and on the seventh day of its duration the child died rather suddenly. The examination of the thoracic and abdominal viscera showed the presence of moderate bronchopneumonic consolidation of the lower lobes of both lungs. The spleen was enlarged and somewhat soft, but not diffuent. The kidneys showed numerous well marked miliary infarcts of recent date, a number of which contained minute centers of suppuration. The heart weighed 30 gm.; its external surface, and that of the pericardium, was normal. On slitting up the cavities, the posterior cusp of the aortic valve showed recent acute, ragged, friable granulations, situated somewhat below the line of contact of the cusps; a similar patch of granulation was present on the wall of the ventricular septum below the valve. The affected cusp was found to be perforated, and the interventricular septum nearly so, the process having reached as far as the endocardium of the right ventricle, but not having perforated it. The other valves and cavities of the heart were healthy. None of the other organs available for examination showed changes worthy of note. Histologic examination of a piece of the vegetation, and sections of the infarcted areas of the kidney, showed very clearly, however, that the infecting organism was a streptococcus. The interest in this case lies in the fact of the extremely early age at which the affection occurred, and of its acute course. It was clinically unconnected with the gastro-intestinal disturbance for which the child was admitted, since the acute symptoms were only developed at the end of the period of stay in hospital when the impetigo and gastro-intestinal condition had disappeared. This case does not come within the category of the so-called "rheumatic" form of malignant

endocarditis which is met with in childhood, and in which the necropsy findings differ only in degree from those of "simple" endocarditis; it rather corresponds to the more virulent of the adult types of endocarditis associated with the suppuration of infarcts derived from the diseased valves.

Lancet, London

March 13, 1920, 1, No. 5037

- Surgical Aspect of Dysentery. Z. Cope.—p. 579.
*Pleural Effusion: Its Cytology and Results of Paracentesis. D. S. Page.—p. 585.
Periodicity of Influenza. B. E. Spear.—p. 589.
Use of Univalent Serum in Treatment of Cerebrospinal Fever. H. S. Banks.—p. 591.
Etiology of Effort Syndrome. R. G. Barlow.—p. 593.
Use of Autogenous Bone Grafts in Treatment of Certain Simple Fractures of Bone. B. Hughes.—p. 595.
*Torsion of Appendix. E. C. Bevers.—p. 597.
Tobacco Amblyopia in a Woman. M. L. Hinc.—p. 597.
*Case of Juvenile Tabes. D. Kerr.—p. 598.

Cytology of Pleural Effusion.—Page points out that a predominance of polymorphonuclear neutrophilic cells occurs not uncommonly in chronic pleural effusion complicating pulmonary tuberculosis. When it occurs, in the absence of secondary infection of the fluid, it suggests the possibility of hydropneumothorax being present; probably it may occur without this complication as the result of a virulent tuberculous infection. A predominance of small mononuclear cells is usual in tuberculous pleural effusions. It is not uncommon in effusions associated with neoplasms. It may occur in renal cases. Effusions in which coarsely granular eosinophilic cells are found in large numbers are probably not tuberculous. Basophilic cells occur rarely, and only in small numbers. On theoretical grounds it seems better to reserve paracentesis for the relief of urgent symptoms. In the analysis of this series of cases no clear evidence is obtained either in favor of or against paracentesis.

Torsion of Appendix.—When Bevers first saw this patient, she was suffering from abdominal pain and vomiting; sixty hours before admission she was seized with severe pain in the right iliac fossa during the night and vomited almost at once. The pain increased in severity and vomiting continued at intervals. On admission her pulse was 120 and her temperature 100 F.; the abdomen was slightly distended and generally rigid, this rigidity being most marked over the lower half of the right rectus, and there was acute tenderness on pressure in the right iliac fossa. Bevers regarded the case as one of acute appendicitis with perforation, and operation was at once undertaken. The appendix was found hanging over the brim of the pelvis; both it and the meso-appendix were much swollen and dark purple in color, and in places becoming black. At the base of the appendix and close to the cecum were two complete twists, there were no adhesions, and the appendix was quite free in the peritoneal cavity. The appendix was removed and the abdomen closed without drainage, recovery being uneventful. The appendix was 3 inches long, in a condition of acute gangrene, and contained a small concretion near the tip.

Juvenile Tabes.—Kerr's patient was only 14 years of age. The three striking features of the case: (1) lightning pains, (2) primary optic atrophy, (3) absent knee jerks, established the diagnosis of juvenile tabes in spite of the absence of a history pointing to hereditary syphilis and of the negative blood and cerebrospinal fluid Wassermann.

South African Medical Record, Cape Town

Feb. 14, 1920, 18, No. 3

- Blackwater Fever in Central Africa during the War. A. P. Morse-Anderson.—p. 43.
South African Cereariae. F. G. Cawston.—p. 49.

Bulletin Médical, Paris

Feb. 7, 1920, 34, No. 7

- Reorganization of the Hospitals of Paris. A. J. L. Brocq.—p. 113.

Feb. 21, 1920, 34, No. 11

- *Radium Therapy in Gynecology. Fabre.—p. 169.

Radium Treatment in Gynecology.—Mme. Fabre reviews the various indications and the technic for radium treatment

in disease of the female genital organs, saying that the gynecologist of yesterday was a physician, today he is a surgeon, and tomorrow he may be a radium therapist.

Journal de Médecine de Bordeaux

Feb. 25, 1920, 91, No. 4

- *Diphtheria Mortality. Dubourg and Guénard.—p. 83.
- *Subconjunctival Lipoma. Cabannes and Dupérié.—p. 86.
- Anatomy of Veins in Leg. G. Jeanneney.—p. 87.
- *Medical Inspection in Schools. Gèzes.—p. 89.

Diphtheria Mortality.—Dubourg and Guénard review the experiences with diphtheria at the Children's Hospital at Bordeaux during the last thirty years. The mortality was 54 per cent. in 1888, but the annual average after antitoxin was introduced has been 7.28 per cent., with a minimum of 1.53 per cent. of 195 cases in 1907.

Subconjunctival Lipoma.—The fibrolipoma described was removed from the conjunctiva in the outer portion of the inferior culdesac of a healthy woman of 29. The tumor had been first noticed two months before.

Necessity for Examination of Ear and Nose in Medical Inspection of Schools.—Gèzes found in 117 children of the upper school grades at Bordeaux that over 42 per cent. had spurs on the nasal septum. Over 36 per cent. had coryza with hypertrophy; 56.4 per cent. had chronic otitis media, and 12.8 per cent. cicatricial otitis, in addition to the over 34 per cent. with enlarged tonsils and the 35.9 per cent. with adenoids.

Journal de Radiologie et d'Electrologie, Paris

January, 1920, 3, No. 12

- *Electric and Roentgen-Ray Treatment of Sciatica. A. Zimmern.—p. 533.
- Electrocardiography and Roentgenoscopy of the Hearts of Eight Athletes. J. Cluzet.—p. 540.
- *Precautions in Radiotherapy. M. L. Gunther.—p. 544.

Electric and Roentgen Treatment of Sciatica.—Zimmern assumes that true sciatica can be traced to irritation or compression of the roots of the nerve, not severe enough to arrest the motor impulse. It may be amenable to direct irradiation or to indirect revulsion by a faradic or high frequency current or jet of hot air. Other physical measures seem to have only a symptomatic action. His experience warns against trying to combine roentgen-ray treatment with electric revulsion; the latter seems to undo the effect of the former. He usually gives 2 H units at a sitting. Relief may be obtained at the very first, but the second or third is generally followed by the subsidence of all the pain. Sometimes there is an exacerbation of the pain the evening or the day following each sitting. This exacerbation always proved a sign of favorable omen. If three sittings do not accomplish the result, he waits eight or ten days, to save the skin, and then repeats the course with doses of 3 instead of 2 H. The Achilles tendon reflex seldom returns, or not until very late.

Precautions in Roentgen-Ray Work.—Gunther is the director of an establishment for manufacture of electric and radiologic apparatus and devices, and he gives a long list of special precautions to be observed by the radiologist, for himself and for the patient, to avert immediate and tardy injury.

Presse Médicale, Paris

Feb. 7, 1920, 28, No. 11

- *Fibrotuberculoma in the Larynx. G. Portmann.—p. 101.
- *Quantitative Test for Albumin in the Urine. L. Dupuy.—p. 104.
- *Gas Cysts in the Abdomen. C. Lenormant.—p. 104.

Laryngeal Fibrotuberculoma.—Portmann was able to watch through several years the evolution of a fibrous tuberculous tumor in the larynx. It had been mistaken for cancer at first, and the larynx was exposed for laryngectomy. The tissues around were found infiltrated and thickened, so the proposed operation was abandoned, and the patient has been in fairly good health during the three years since he has been wearing his tracheal tube.

Albumin Test.—Dupuy compares the turbidity of a standard solution of albumin with that of the urine being examined after each has been treated with Esbach's citric-picric acid reagent.

Gas Cysts of the Abdomen.—Lenormant analyzes twelve recent (since 1910) works on the subject of cystic pneumatosis. It was recently discussed editorially in THE JOURNAL, March 13, p. 739.

Feb. 11, 1920, 28, No. 12

- Functioning of the Diaphragm in Pleurisy with Effusion. P. E. Weil.—p. 113.
- Technic for End-to-End Anastomosis of Small Intestine after Resection. H. Costantini.—p. 113.
- *Radium Therapy. Baud and L. Mallet.—p. 115.

Radium Therapy.—Baud and Mallet announce that they are preparing receptacles for radium which will allow its use in many more conditions than have hitherto been possible with the comparatively bulky capsules in use. By this means radium salts can compete with the emanations in the only point in which the latter have been superior to date.

Feb. 14, 1920, 28, No. 13

- *Inaugural Lecture of Parasitology Course. E. Brumpt.—p. 121.
- Efficacy of Sodium Taurocholate as Local Preventive of Gonorrhea. L. Cheinisse.—p. 127.

Parasitology.—In the course of this inaugural lecture, Brumpt remarks that although the most common species of our parasites were known to the ancient Egyptians, yet there is nothing to show that the forbidding of the eating of pork by certain religions had anything to do with the danger of disease therefrom. He cites S. Reinach to the effect that nowhere in the Bible is there any reference to disease attributed to food, and that the idea of hygiene was born in Grecian civilization. The Abyssinians to this day, Brumpt says, do not eat pork or elephant meat, but they eat beef raw. He asked an Abyssinian chief the reason for this and for circumcision, and the reply was that both were done because their ancestors had taught them to do so, and because the mutilations "distinguished them from other people who, keeping as God made them, were like animals." Brumpt thinks that this, and not hygiene, is the key to the problem. In parasitology, as well as in surgery, Paré was a pioneer, with his advice to boil meat. F. Redi, in the seventeenth century, showed the origin of maggots from flies and of itch from an acarus, but the medicine of that day paid no heed to their discoveries.

Schweizerische medizinische Wochenschrift, Basel

Feb. 5, 1920, 50, No. 6

- *Revision in Workmen's Compensation. F. de Quervain.—p. 101.
- *The Leukocyte Blood Picture in the Mountains. E. Ruppner.—p. 105.
- *The South Wind and Pathology. K. Helly.—p. 108.
- *Fatal Infection with Mouse Typhus. H. Staub.—p. 114.

Revision of Workmen's Compensation.—The Swiss law provides for a pension allowing revision during the first three years and again at the end of the sixth and the ninth years. De Quervain discusses the workings of the law in concrete examples. Among 94 cases of traumatic arthritis reexamined later, 38.9 per cent. of the supposedly disabled had regained their earning capacity; the figure was 55.8 per cent. among those cases dating from 1906 and 1907. On the other hand, in 4.2 per cent. of the reexamined, arthritis had developed as a tardy complication of the trauma.

The Leukocyte Picture in the Mountains.—Ruppner's investigation of 100 healthy persons showed a special leukocyte picture in the Engadine and at still higher levels (1,750 meters and 2,250 meters). The total number of leukocytes was normal or below, keeping at the lowest range of normal, as a rule, while the number of lymphocytes was above the normal figure, and of neutrophils was below. The proportion of mononuclears was somewhat above normal. His research demonstrated further that persons coming to the mountains generally displayed a pronounced leukocytosis at first—an acclimation leukocytosis, as it were, which yielded in about six weeks to the mountain leukocyte picture as above. He remarks on the scanty literature on the leukocyte picture at high altitudes when so much has been written on the erythrocytes and hemoglobin changes.

The South Wind and Pathology.—Helly has been impressed with the wave of pathologic conditions which often pre-

cedes and accompanies a period of strong southerly winds. The number of deaths is higher, especially among persons with damaged hearts, and in those of unstable constitution, the thymicolymphatic status, as evidenced in the increased number of deaths under anesthetics, from myasthenia or in various diseases, the weather evidently depressing the resisting forces. The number of suicides also increases, and the number of accidents. The muscular, nervous and mental systems seem to be depressed, their vitality lowered, and physicians and surgeons should bear this in mind during the periods of strong southerly winds. Helly refers to the southerly wind called the sirocco in Italy and the föhn in Switzerland, and says that for fifteen years he has been studying its influence on the morbidity and mortality of the most varied classes of people and over a broad range of latitude, from Naples to Berlin, and found the evidences of its influence both in the living and at necropsies. Many persons feel the influence two or three days before the sirocco arrives, and are depressed and irritable.

Fatal Case of Mouse Typhus.—The previously healthy man of 62 ate five pieces of potato which had been spread with mouse virus to kill mice in the barn, made with *Bacillus typhi-murium*. He developed a fulminating infection which proved fatal in five days. There was no fever at any time, but the course corresponded to the cholera-resembling form of paratyphoid B.

Feb. 12, 1920, 50, No. 7

Supracondyloid Fracture of Humerus. H. Iselin.—p. 121.

*Acute Aortitis with Two Aneurysms. F. Merke.—p. 122.

Volvulus. A. Walker.—p. 126.

Blood in Sputum. S. Pollag.—p. 127.

Typhoid Epidemic in 1884. C. Kaufmann.—p. 127.

Aneurysms with Acute Aortitis.—There were two aneurysms, and the aorta ruptured in the case reported in a man of 57 with chronic cystitis. The bacteriemia had induced phlegmonous aortitis. In Stumpf's similar case there was a verrucous endo-aortitis. In both cases the aortitis was evidently of metastatic origin, from the focus in the bladder.

Annali di Clinica Medica, Palermo

October, 1919, 9, No. 4

*The Thyroid and Infections. M. Barbàra.—p. 1.

*Treatment of Pulmonary Tuberculosis. A. Fagiuolo.—p. 21.

*Elimination and Retention of Urea in Nephritis. A. Venza.—p. 66.

*Experimental Conjunctivitis. F. P. Borello.—p. 85.

*Blue Disease. M. Lombardo.—p. 113.

*Mediastinal Tumors. V. Piazza-Martini.—p. 136.

Quinin Prophylaxis of Malaria. A. Pitini.—p. 173.

*Phenol-Lipoids in Therapeutics. V. C. Piazza.—p. 183.

Pleural Effusion with Heart Disease. M. Lombardo.—p. 190.

The Thyroid and Infections.—Barbàra ascribes an important rôle to the thyroid in the struggle against infection. His experiments showed that after thyroidectomy some of the factors in immunization notably declined, including the complement, bacteriolysins, opsonic power and phagocytosis, but no modification in the antitoxin content could be detected after thyroidectomy. This lowering of the defensive forces rendered the thyroidectomized animals more susceptible to infections. The changes in the thyroid with acute and chronic infection readily explain certain symptoms observed in infections. The clinic and experimental pathologic physiology thus supplement and confirm each other. This opens a field for research on the effect of thyroid treatment on the serologic and cellular defensive forces in the course of infections.

Treatment of Pulmonary Tuberculosis.—Among the other measures applied at the Ferrarotto public sanatorium, artificial pneumothorax was induced in 56 patients and all were improved except 5 in whom conditions remained stationary, and 5 others in whom the disease progressed; 5 may be considered clinically cured and 15 immeasurably improved. In a previous series of 15 cases in which the course was concluded by 1912, all are in good condition still with the exception of 3; the marked improvement in these had persisted for two years, but their symptoms returned and 2 have died.

Elimination and Retention of Urea.—Among the points brought out by Venza in this study of the present status of

this subject, is that he often found patches of apparently normal tissue in kidneys which at first glance seemed to be totally pathologic. Sometimes these normal areas gave evidence of compensative hypertrophy. He tried to estimate this reserve capacity of the kidney by comparing the urea content of the urine before and after test ingestion of 20 gm. of urea. The increase ranged from 1 to 18 gm. but the findings did not correspond to the known condition of the kidneys. Those showing the largest increase were not those with the mildest kidney disease, and repetition of the test gave variable findings. He emphasizes further that little reliance can be placed on the concentration of the urine from day to day. The maximal concentration is said to be more instructive, that is, the highest concentration in which the special substance can be eliminated. This is determined from the total urine for three or four days. It is said to be peculiar to the individual and constant in him. But in Venza's cases this maximal concentration was not constant. It seemed as if the urea had acquired a threshold below which its elimination was impossible. The kidneys seemed to be unable to respond to slight stimuli; only powerful ones affected them, and not always proportionately to the stimulus. This may be the reason why the Ambard ureosecretory constant is not always a reliable guide. The authorities even differ as to the normal standard, Ambard changing his early figure of 0.040 to a range from 0.065 to 0.070, and Weill accepts a range from 0.063 to 0.080 and, in the elderly, from 0.097 to 0.1. Raimoldi states that the normal limit is 0.080. In Venza's cases the constant was always above normal but not often proportionally to the severity of the disease, and it varied from time to time. In one patient it was 0.5 on two occasions and then 0.146, and in another 0.875, 0.633 and finally, as death approached, 0.328. The azotemia kept constantly high throughout, and the urea content of the urine did not change enough to justify this change in the Ambard constant. The azotemia in all his cases was constantly above 0.5 per thousand. An increase in the azotemia as edema subsides is always a grave sign, as the kidneys are unable to eliminate the urea which the edema fluid had been holding in solution. An increase in the azotemia as edema is forming shows the hampering of kidney function by the mechanical obstacle of the edema. The urea content of the blood with edema is therefore instructive, but only when the dilution is known. A few days of a diet to get rid of chlorids insure much greater precision. Five patients with azotemia above 2 or 3 per thousand soon died, and one with 1.70 per thousand did not survive more than a few months.

Factitious Conjunctivitis.—Borello induced conjunctivitis in rabbits' eyes with castor-oil seeds and then obtained positive responses with an antiricin serum, with a diagnostic ricin collyrium, and with the deviation of complement test. With the latter it is a simple matter to detect factitious conjunctivitis induced with the seeds in man. The findings are illustrated.

Blue Disease.—Lombardo gives four pages of bibliography and the details of two cases in a man of 31 and a youth of 15.

Mediastinal Tumors.—Piazza-Martini reports twenty cases of mediastinal tumors causing unusual clinical manifestations. In some cases a frequent paroxysmal cough was the only symptom; it was worse on reclining, which suggested a movable tumor. In one case the symptoms indicated a tumor in the anterior mediastinum and it retrogressed in thirty-five days under sodium iodid, and all traces of it had disappeared by another month. There had been no need to apply the Wassermann test or radioscopy as improvement was so promptly evident under the specific treatment. In one case the tumor causing the cough was discovered when the reclining patient was drinking. The swallowing movements brought an accessory and enlarged thyroid, close to the isthmus, into view. It retrogressed to a clinical cure under iodids and there was no further coughing in any position. Paralysis of one vocal cord was the only symptom in one case from a clump of enlarged peribronchial glands. One woman of 50 developed symptoms testifying to compression of the azygos where it entered the vena cava, with dysphagia from engorgement of glands in the right posterior medias-

tinum. Under large doses of sodium iodid the symptoms rapidly retrogressed, although there was nothing to suggest syphilis. Emphysema, acute catarrhal bronchitis, or compression of the descending vena cava were the only symptoms in some other cases. No operation seems to have been attempted in any of the cases. All proved fatal except the few mentioned above.

Phenol Lipoids.—Piazza's experiments in chemotherapy have resulted, he says, in demonstrating peculiar properties in a combination of phenol and various lipoids, differing from the properties of either alone, and differing further according as the lipoids were derived from egg yolk, brain tissue, cholesterol or lecithin, and with or without addition of camphor. Addition of 2 gm. of the phenol-cholesterol-camphor combination to 10 c.c. of tetanus toxin annulled the toxicity so that guinea-pigs bore without harm five times the lethal dose of the tetanus toxin thus treated. The bactericidal action was most pronounced with the Shiga dysentery bacillus, and least with the pneumococcus and streptococcus. No irritating nor analgesic action on the skin or mucosa could be discovered, even with prolonged contact.

Annali d'Igiene, Rome

November, 1919, 29, No. 11

Autovaccines in Treatment of Disease from Filtrable Virus. D. De Blasi.—p. 717.

Production of Secondary Hemolysins in Rabbits Inoculated with Ricin. D. De Blasi.—p. 727.

Action of Phenol on Rabies Virus. V. Puntoni.—p. 730.

*Prophylaxis of Malaria. M. Rizzi.—p. 748.

*Infectious Abortion in Horses. M. Carpano.—p. 752.

Municipal Prophylaxis of Malaria.—Rizzi relates experiences in Italy which demonstrated the advantages of keeping the domestic animals between the dwelling places and the pools or marshes that breed the mosquitoes, when it is impossible to keep the pools thoroughly oiled to destroy the larvae. At Trinitapoli, where malaria has long been prevalent, the stables and barnyards were removed outside the city limits and on the side toward the marshes. The stables swarmed with mosquitoes, and as they were killed off day by day, new hosts arrived, but the city escaped. No mosquitoes entered the city, and no new malaria cases developed, although the endemic was severe in the country around. The barns for the animals attract and collect the mosquitoes, and they can be destroyed readily while collected here, repeated attacks on them keeping the hosts under control. Roubaud in Paris has also recently called attention to this means of segregating the mosquitoes.

Infectious Abortion in Horses.—Carpano has isolated a bacterium of the paratyphoid group from mares with this disease and from the polyarthritis of the colts born from these mothers. It was frequently associated with a streptococcus, and he has reproduced with it a fatal disease in rabbits, guinea-pigs and dogs. It responds to agglutination tests. Characteristic cultures of both are shown in two plates.

Archivio Italiano di Chirurgia, Bologna

August, 1919, 1, No. 1

Latent and Atypical Tetanus from War Wounds. M. Donati.—p. 1.
Tardy Slow Tetanus After Preventive Antiserum. A. Biancheri.—p. 15.

*Serotherapy of Gas Gangrene. G. M. Fasiani.—p. 35.

*Tuberculosis in Remaining Kidney. G. G. Forni.—p. 85.

Antiserum for Gas Gangrene.—Fasiani discusses the preparation and the action of immune serums against the anaerobes responsible for experimental gas gangrene.

Tuberculosis in Single Kidney.—Forni induced a tuberculous process in both kidneys and then removed one the fifteenth day in four guinea-pigs and slaughtered the animals the thirtieth day. The same procedure was applied to a series of eight rabbits. In a third series the interval before nephrectomy was two months and before killing three months. Some colored plates accompany the article. The data presented confirm the favorable effect on a tuberculous kidney of removal of its mate. The remaining kidney hypertrophies and it becomes functionally more capable. In animals, at

least, the tuberculous process is retarded and modified by processes of sclerosis which tend toward healing and to recovery.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 13, 1919, 40, No. 91

*Lavage of Spinal Cavity in Epidemic Meningitis. C. B. Farmachidis. p. 988.

Rinsing Out the Spinal Cavity in Meningitis.—Farmachidis emphasizes the benefit in a case in which he rinsed out the spinal cavity with a 7.5 per thousand physiologic solution, using up to 360 c.c. at each sitting, and keeping this up daily for twenty-five days. He first withdrew 30 c.c. of the spinal fluid and then injected the same amount of the physiologic solution. After a minute or two this was then gently aspirated or allowed to flow out, and 30 c.c. were injected again, repeating this ten or twelve times at a sitting, thoroughly rinsing out the cerebrospinal canal, the fluid finally coming away clear. The procedure is not painful, but injection of antimeningococcus serum causes some pain. By the second application in the case described the fever disappeared, and the young man became conscious, while the procedure seemed harmless. The cerebrospinal fluid was clear by the twenty-third day. Aubertin reported in 1915 having treated fifty men with three injections of 50 c.c. of the antiserum, preceded by rinsing with a total of 150 c.c. of physiologic solution, and a cure followed.

Policlinico, Rome

January, 1920, 27, Surgical Section No. 1

*Solid Hard Ovarian Tumor. E. Bussa-Lay.—p. 1.

Healing of Pseudotuberculous Peritonitis After War Wounds of Chest and Abdomen. G. Egidi.—p. 8.

*Ether in Surgical Infections. G. Fantozzi.—p. 19. Contn.

Solid Ovarian Tumor.—The large tumor described by Bussa-Lay was so hard from infiltration with lime salts that knife and saw made scarcely any impression on it.

Ether in Surgical Infections.—In this instalment of Fantozzi's long report of research on this subject, he describes the results of flushing the peritoneal cavity of rabbits, guinea-pigs and dogs with ether, according to Morestin's technic, after inducing peritonitis. Other experimental work showed that ether has only very weak antiseptic properties. His experiences on the whole warn decidedly against the use of ether for rinsing out the diseased abdominal cavity. One special drawback is the intense cold which it induces. In abdominal operations it is one of the cardinal indications to keep the viscera warm. In some of the animals, even small amounts of ether induced hemorrhagic lesions in the viscera and degenerative changes in the kidneys, besides the active hemolytic property of the ether. When poured into the peritoneum and its evaporation prevented, all the animals died from shock. When the abdomen was left freely open, so the ether fumes and any excess of fluid could escape, two of the seven rabbits (15 to 50 c.c. ether) died, and two of the three guinea-pigs (20 to 30 c.c.). Only one survived of seven guinea-pigs given intraperitoneal injection of from 0.5 to 1 c.c. of ether, and four of seven rabbits. The guinea-pigs died in a few minutes, the rabbits not until the fifth and eighteenth days. The volatilized ether evidently paralyzed the respiration by reflex action from pressure on the diaphragm. Normal rabbits bore the ether with comparatively little disturbance. The report of his clinical experiences will form the next instalment of his article.

Riforma Medica, Naples

Jan. 10, 1920, 36, No. 2

*The "War Big Belly". C. Guarini.—p. 30.

Surgery of the Brain. C. Oliva.—p. 38.

*Appendicitis and Tuberculosis. T. Silvestri.—p. 43.

Italian Science and the Histology of the Nervous System. C. Ciaccio.—p. 44.

*Telegony. V. Diamare.—p. 48.

The "War Big Belly."—Guarini states that enteroptosis, atony and dyspepsia were responsible for the meteorism and displacement of the diaphragm in his eleven impressive cases in soldiers.

Appendicitis and Tuberculosis.—Silvestri found manifestations of tuberculosis in 45.63 per cent. of 103 persons with appendicitis.

Telegony.—Diamare recalls Paladino's demonstration of spermatozoa found buried in the immature ova of a guinea-pig, as explaining telegony.

Rivista di Clinica Pediatrica, Florence

December, 1919, 17, No. 12

Postdiphtheric Paralysis. L. Spolverini.—p. 617.

Foot Phenomenon in Meningitis. A. Nizzoli.—p. 637.

Postdiphtheric Paralysis.—Spolverini queries whether the postdiphtheric flaccid condition of the muscles should properly be called paralysis, as the disturbances are more in the nature of myasthenia in the majority of cases and in four he describes here and compares with similar cases on record. In three of his cases the disturbances were arrested with antitoxin, and they retrogressed completely in from twenty to forty days. The larger the amount of antitoxin injected, the prompter the cure. In the fourth case the antitoxin had not been commenced until the twenty-seventh day, and only comparatively slight improvement was realized. These cases each further the necessity for taking smears from the nose with postdiphtheric paralysis, as this may reveal virulent diphtheria bacilli. Some even assert that nasal diphtheria is more apt than other forms to be followed with paralysis.

The Foot Phenomenon in Meningitis.—Nizzoli cites conflicting evidence from various writers on the constancy and significance of the various signs of meningitis in children, of which he enumerates a long list. The excitability of the nervous system in children causes a host of symptoms which obscure the diagnosis. The signs which depend on reflex action are the most instructive in children, as they cannot fight against them. In two cases of tuberculous meningitis he noted dorsal flexion of the big toe and a fanlike spreading of the other toes when he tried to induce the identical contralateral reflex. The other leg became spontaneously flexed, and the toes assumed the position mentioned above. The reflex is induced on the recumbent child, with legs extended, by flexing one on the thigh and on the pelvis, with moderate compression, watching the behavior of the other leg. This foot phenomenon could never be elicited in healthy children, but could be induced at will in both these meningitic children. In others with the disease more advanced the response was negative, confirming that the phenomenon is an earlier sign.

January, 1920, 18, No. 1

Progressive Muscular Atrophy. G. Fiore and G. Guidi.—p. 1.

Progressive Muscular Atrophy in Children.—Fiore and Guidi give nearly four pages of bibliography on progressive muscular atrophy or dystrophy of muscles, and two colored plates of the findings in one of their three cases in infants. The latter died from pneumonia at the fifth, seventh, or fourteenth month. The muscular atrophy had been noticed soon after birth, and displayed a rapidly progressive course, with lax paralysis. The children seemed otherwise normal. Two had the same parents; they were born about four years apart, and two other children in the family were said to have shown symptoms resembling these. Two other children in the family are normal and in good health. The pathologic anatomic findings in the third case demonstrate the existence of an intermediate form between the idiopathic and the spinal muscular atrophy type.

Rivista Critica di Clinica Medica, Florence

Dec. 13, 1919, 20, No. 50

Scleroderma with Sclerodactylia; Two Cases. C. Capezzuoli.—p. 589. Cont'n.

Dec. 20, 1919, 20, No. 51

Echinococcus Intradermal Reaction. A. Testi and C. Zoli.—p. 601.

Echinococcus Intradermal Reaction.—Testi and Zoli announce that when this intradermal test is negative, exploratory puncture is justified. But it should never be done when this test elicits a positive response, and this is the rule in echinococcus disease. The exceptions are rare. The test

is made by inoculating one arm with 0.5 c.c. of fluid from an echinococcus cyst on a guinea-pig or beef, drawn less than twenty-four hours before. A control inoculation is made with physiologic saline on the other arm. Long series of tests on other patients and on the healthy failed to elicit the slightest response, but in thirty patients with echinococcus disease the local reaction was unmistakable in both adults and children. In one child the test was negative until cyst fluid from a sheep was used. This elicited a typical reaction. The absence of the local reaction is a sign that either there is no echinococcus disease, or else that the products of the cocci have not sensitized the organism. In either event exploratory puncture is harmless. On the other hand, a positive reaction indicates a phase of sensitization in which exploratory puncture is liable to induce symptoms of serious anaphylaxis. In some cases a positive reaction could be elicited even years after operative cure of the cyst.

Anales de la Facultad de Medicina, Lima

September-October, 1919, 2, No. 11

*Tuberculous Pneumonia. M. Gonzalez Olachea.—p. 81.

History of Yellow Fever in Peru. J. Arce.—p. 86. Cont'n.

Sudden Death. F. Quesada L.—p. 113. To be cont'd.

*Indigo in Ancient Peru. M. A. Velasquez and A. Maldonado.—p. 134.

Normal and Pathologic Language. L. D. Espejo.—p. 144. Cont'n.

*Peruvian Pseudomeloidae. E. Escomel.—p. 160.

The Anatomists of Peru. H. Valdizan.—p. 164.

Tuberculous Pneumonia.—Gonzalez reports a typical case of what he assumed to be chronic pneumonia of the fibroid hyperplasia type, for which attenuated tuberculous infection was probably responsible. The symptoms were those of lobar pneumonia, but there was a history of moderate hemoptysis twenty-five years before, with no other symptoms of tuberculous infection. The tubercle bacilli are seldom to be found in the sputum in such cases, but tuberculin-iodid treatment, begun the thirtieth day in his case, induced specific reactions, brought down the fever, the symptoms subsided, and the man of 54 has felt perfectly well during the four months since he left the hospital apparently cured by the tuberculin stimulating the production of antibodies.

Indigo in Ancient Peru.—Velasquez and Maldonado review the history of the use of indigo in America, many textiles, etc., dyed with indigo having been found in tombs from pre-Columbian days. They give an illustration of part of a garment dating from the Inca period, decorated with indelible blue figures.

The Pseudobeetles of Peru.—Escomel adds another to the list of eight pseudomeloidae which have been described in Peru, five first by him. The blood of these insects seems to have been used from time immemorial to cure warts. The papilloma becomes blanched and looks as if it has been cauterized with a strong acid. The active principle has been identified with cantharidin.

November-December, 1919, 2, No. 12

Early History of Lima Medical School. H. Valdizan.—p. 244.

*Study of Maize and Chicha Liquor Made Therefrom. M. A. Velasquez and A. Maldonado.—p. 268. Cont'n.

Maize and Chicha.—This latter term is the name of the common alcoholic beverage long made from corn in Peru, and Velasquez and Maldonado give an illustrated description of its production from prehistoric days to date. They also review the history of maize, giving a bibliography of 139 works.

Anales de la Facultad de Medicina, Montevideo

December, 1919, 4, No. 12

*Influenza, Suprarenal Insufficiency and Manic-Depressive Psychoses. S. C. Rossi.—p. 801.

*Gallbladders with Partitions and Gallstones. D. Prat.—p. 813.

Classification of Motor Disturbances: Hyperkinesia. A. Ricaldoni.—p. 842.

Suprarenal Insufficiency as Factor in Psychoses.—Rossi has encountered nine cases in which a manic-depressive psychosis developed during the weakness following influenza. He ascribes it to the suprarenal insufficiency which was manifest. This assumption was confirmed by evidences of suprarenal insufficiency in six other patients with manic-depressive

psychoses who had not had influenza. It was placed on a still more solid basis by the efficacy of suprarenal treatment. The beneficial action of epinephrin in these cases seems to lift the veil of mystery from the manic-depressive psychoses, and expose their origin and means to treat them.

Partitions in Gallbladders.—In one of the cases illustrated, constriction of the walls of the gallbladder, at about the lower third, had imprisoned a large gallstone; in another case two were imprisoned by an hour-glass constriction. In others the gallstones were lodged in a diverticulum, or a fibrous septum had walled off part of the gallbladder and with it a stone. In one case the gallbladder had bent double, shutting off communication between the two halves. This partitioning off of the gallbladder may be of inflammatory origin, or from deformity from the weight of stones, or from a tumor nearby, or from some mechanical valve formation. If we bear the possibility of such anomalies in mind, we will not waste so much time waiting for spontaneous expulsion of the calculi which is absolutely impossible in these conditions.

Amazonas Medico, Manáos

July-September, 1919, 2, No. 7

- *Rhodnius Brethesi n. sp. A. Da Matta.—p. 93 and p. 104.
- Influenza in Northern Brazil. G. Victor.—p. 95.
- Urethroscopy in Men. F. Costa Fernandes.—p. 98.
- Posthumous Testimony to Validate a Will. J. F. De Araujo Lima.—p. 107.
- J. Barbosa Rodrigues, the Botanist. A. Da Matta.—p. 137.

Insect Host of South American Trypanosome.—Da Matta has been studying the life history of a beetle which he has named *Rhodnius brethesi* and which is an intermediate host for Chagas' trypanosome. It is found in the Amazon region where both the trypanosomes and the animal ancestral host for the latter, the armadillo, are encountered. The trypanosome does not seem to cause disease in the latter, and Chagas' disease has never been known in human beings in that region to date.

Boletín de Medicina y Cirugía, Guayaquil

December, 1919, 17, No. 127

- *Etiology of Yellow Fever. VI to VIII. H. Noguchi.—p. 165.

Yellow Fever.—The *Boletín* here continues its translation into Spanish of Noguchi's various publications on this subject. The fine plates and tabulations showing the results of experimental research on *Leptospira icteroides* are reproduced.

Brazil-Medico, Rio de Janeiro

Nov. 22, 1919, 33, No. 47

- Colloidal Gold in Treatment of Varicose Ulcers. Ataliba Sampaio.—p. 369.

No. 29, 1919, 33, No. 48

- *Transmission of Disease by the Fly. L. Rocha.—p. 377.

Flies in Transmission of Disease.—Rocha appeals for a national campaign against flies, and says that Paré in 1575 attributed to flies a certain rôle in the propagation of the plague.

Dec. 20, 1919, 33, No. 51

- *The Fixation Test in Diagnosis of Mycetoma or Madura Foot. A. L. B. Barreto and C. Burle Figueiredo.—p. 403.
- Foreign Body in Rectum. A. A. de Carvalho.—p. 404.
- *False Angina Pectoris. Athayde Pereira.—p. 405.

Dec. 27, 1919, 33, No. 52

- Mechanism of Death After Experimental Vagotomy. M. Ozorio de Almeida.—p. 411.
- Epidemic Poliomyelitis in Uruguay. V. Escardo y Anaya.—p. 412.
- Conc'n.

Serologic Test for Mycetoma.—The deviation of complement test was positive in the case of mycetoma or Madura foot described. The antigens used were emulsions of *Endomyces brasiliensis* and of *Discomyces bahiensis*, which happened to be on hand.

False Angina Pectoris.—Athayde describes a case of liver colic with spasm of the stomach which simulated the clinical picture of angina pectoris in the man of 43. Under measures to tide the cholelithiasis into a latent phase, the recurring false angina pectoris permanently subsided.

Crónica Médica, Lima, Peru

November, 1919, 36, No. 677

- *Case of Ainhum. O. Soto and J. L. Raffo.—p. 373.
- Electrocardiographic Diagnosis of Extrasystoles. M. A. Schreiber.—p. 378.
- Rupture of Membranous Urethra. E. P. Manchego.—p. 381.
- *The Tuberculin Reaction in Blastomycosis. S. Lozada Benavente.—p. 389.
- Dystocia from Defective Development of Lower Segment of Uterus. E. A. Boero.—p. 390.
- The Progress of Medicine in Spain. C. Maturana Vargas.—p. 395.

Ainhum.—Soto and Raffo report the first case of ainhum to be published in Peru, but the patient tells of other cases in his environment.

The Tuberculin Reaction in Blastomycosis.—Lozada found the intradermal tuberculin reaction constantly positive in his fifteen cases of blastomycosis. Two of these patients died from influenza, but necropsy failed to reveal the anticipated tuberculous lesions. It seems as if the positive reaction must have been the work of the blastomycosis.

Plus-Ultra, Madrid

September-October, 1919, 3, No. 15-16

- *Technic for Suturing the Intestine. A. Perera.—p. 125.
- Recent Progress in Bacteriology.—p. 131; Therapeutics.—p. 141; Otolaryngology.—p. 148; Instruments.—p. 154; Pediatrics.—p. 160; Obstetrics and Gynecology.—p. 162; Heart Disease.—p. 174.
- Operative Treatment of Traumatic Radial Paralysis. M. Bastos.—p. 135.
- Treatment of Disease of Lacrimal Apparatus. Barraquer.—p. 147.
- *Hyperthyroidism and Pseudohysteria. C. Juarros.—p. 152.
- *Lipomatosis of the Kidney. M. Serés.—p. 168.
- The Thermal Springs of Spain. H. Rodríguez Pinilla.—p. 171.
- Epidemic Meningitis. C. García Luquero.—p. 177.
- Recent Surgery of the Digestive Apparatus. L. Urrutia.—p. 179.
- Scientific Care of the Insane. H. F. Delgado.—p. 185.
- Anomaly of the Kidney. García Urdiales.—p. 190.
- *Glycogen in the Auriculoventricular System. P. Rojas.—p. 192.

Technic for Suturing the Intestine.—Perera presents thirty-nine illustrations of the various steps of suturing a perforation and of anastomosis, with comment based on his personal series of fifty-eight cases.

Hyperthyroidism and Pseudohysteria.—Juarros declares that every day he encounters more and more persons whose disturbances have been ascribed to hysteria with the consequent therapeutic indifference, when in reality closer study of the case reveals excessive functioning of the thyroid as a factor. This hyperthyroidism can be easily cured or at least much attenuated, he continues, when the thyroid symptoms are discovered, tremor, sweating and mononucleosis, besides the usual triad of tachycardia, palpitations and the ocular signs. The tremor is rendered evident by having the patient extend his arms and hands, spreading the fingers. A sheet of paper laid on the hand renders plainly manifest any tendency to tremor. Hysteria can be excluded by the mentality, the hysteric character being easily recognized, so that, he says, "there is no excuse for labeling as hysteria every feminine neurotic manifestation." The instability of the thyroid may induce attacks of hyperthyroidism which may simulate in every respect the phases of a neurosis with the arthritic constitution. The excessive thyroid functioning may even entail obsessions, phobias, hallucinations and delirium, still further confusing the diagnosis. He has recently seen a case with the set of symptoms described by Block in 1912, and it yielded to antithyroid treatment. The patients in this category are usually old maids, and pigmentation is a characteristic symptom, most marked in the muscles, cheeks and side of the brow. They are self-centered, melancholy and irritable, complain of fatigue and insomnia, and are doomed to suffer incurably so long as hysteria is regarded as responsible. A prompt cure in all these hyperthyroid cases may usually be realized under antithyroid plus ovarian treatment, with calcium salts and sodium cacodylate as adjuvants. The main thing is to give adequate doses and persevere long enough.

Renal Lipomatosis.—Serés' patient was a woman of 26; during convalescence from influenza constant pain developed in the left kidney and the urine was turbid, but there were no other signs suggesting a tuberculous process. The pains grew so severe that the kidney was removed, and it was

found full of fat, the soft yellow fat having taken the place of the true kidney tissue, only a narrow shell of the latter being left. In the three analogous cases on record the patients soon died, as also Serés' patient but in none was the kidney process directly responsible for the death. Serés' patient succumbed to pleurisy a month after the operation.

Glycogen in Auriculoventricular Conducting System.—Rojas reports as the results of extensive microscopic and chemical research on the impulse-conducting system of the heart, that there seems to be a larger proportion of glycogen in the tissues here than elsewhere.

Revista de Gyn., d'Obstet. e de Pediat., Rio de Janeiro
September, 1919, 13, No. 9

*Vesicovaginal Fistulas. H. F. Werneck.—p. 263.
Gravity of Otitis in Infants. N. Gurgel.—p. 313. Conc'n in No. 10, p. 367.

October, 1919, 13, No. 10
Uterine Cancer: Diagnosis and Treatment. A. Monjardino (Lisbon).—p. 321.
Hysterectomy from the Social Standpoint. Idem.—p. 342.
Organization of Maternities. Idem.—p. 355.

Genito-Urinary Fistulas.—Werneck had five women with these fistulas in his service during a recent two months. He describes the various operative measures applied, and compares them with others in the literature, giving thirty-one illustrations. In some of his cases labor had lasted from three to eight days; in one of these a calculus in the bladder had been a factor, and a pessary in others. In conclusion he says to emulate Sims' pertinacity, and keep on operating anew, undaunted by apparent failures, until finally the fistula is conquered.

Revista Medico-Cirurgica do Brazil, Rio de Janeiro
September, 1920, 27, No. 9

*Fulminating Otogenous Meningitis. F. Eiras.—p. 319.

Fulminating Otogenous Meningitis.—Eiras' 14 cases confirm the frequency of meningitis from this cause, and the danger of its nonrecognition. In one case a physician had been unjustly arraigned, and the day he should have appeared in court he died suddenly. No one knew he was sick, but necropsy revealed meningitis from catarrhal otitis. The course of the meningitis had been so fulminating that the death had been ascribed to suicide. In the 3 fatal cases in Eiras' practice, 2 of the patients had changed doctors because he had insisted on an operation, and the third consented to intervention only when practically moribund. Two of the 6 successful operative cases were in infants of 4 and 11 months. In one young adult the meningitis was consecutive to gonococemic otitis, mastoiditis and arthritis of the temporo-maxillary articulation, and the operative measures were supplemented with vaccine therapy according to Wright's method. A cure was realized without operation in 5 cases, draining the suppurating otitis media and rinsing with hydrogen dioxid once or twice a day; these were all children but one. The otitis had developed during convalescence from influenza in 3 of them. Even a simple catarrhal otitis is liable to set up meningitis. There had been no pus in the discharge from the ear in one of his cases, but the operation disclosed a large collection of pus. This frequent finding sustains the theory that otitis media is not always due to invasion from the nasopharynx but may be a local explosion from a general infection. This mechanism was evident in his gonococemia case; there was no suppuration in the middle ear, but it contained the gonococcus. The mastoid antrum should be opened up at the slightest suspicion of involvement of the brain. We must remember, he says, that the most treacherous cases may show very few symptoms, and that an exploratory operation here is the most harmless of all surgical ventures. During the 1917 epidemic of acute otitis media he often encountered 2 or 3 or even 6 cases in one home.

Revista de Medicina y Cirugía, Havana
Nov. 25, 1919, 24, No. 22

*Treatment of Trachoma. R. Guiral.—p. 535.
*Treatment of Glaucoma. R. Guiral.—p. 537.

Dec. 25, 1919, 24, No. 24

Twin Pregnancy with Placenta Praevia, etc. L. Huguet.—p. 569.
Paratyphoid plus Colon Bacillus Fever. M. A. de Villiers.—p. 572.

Brush Treatment of Trachoma.—Guiral has applied with good results Howley's aspirating cannula for treatment of trachoma but this does not scrape off the sago-like elevations so perfectly as a dentist's circular brush run by an electric motor. The small, narrow, rapidly revolving brush sweeps off the granulations without the slightest harm to the mucosa. The surgeon thus realizes more than he can ever obtain with the vacuum cannula or other means, he says, while the conjunctiva is left as smooth and clean as if there had been no granular disease. He applies it under ether, and compresses the lid at the operation to expel the blood somewhat. After thus sweeping the conjunctiva clean, he applies the vacuum cannula to aspirate all secretions, blood, etc. Several stereoscopic views accompany the article.

Glaucoma.—Guiral describes the technic for Elliot's method of treating glaucoma, and declares that it is superior for all forms of glaucoma. He has recently had to apply it to six young persons under 20, all belonging to two families in which the parents and grandparents had required treatment for acute glaucoma. The young people had simple glaucoma; the rapid decline of vision was arrested by the Elliot operation, and vision is now excellent.

Mitteilungen aus der Med. Fak. der Univ. zu Tokyo

March 28, 1919, 21, No. 2, German Edition

*Colloidal Gold Reaction in Body Fluids. H. Iida and S. Tominaga.—p. 217.
*Banti's Disease. T. Mitamura.—p. 245.

Colloidal Gold Test of Body Fluids.—Iida and Tominaga have been studying the colloidal gold reaction in the cerebro-spinal fluid, in effusions and exudates and in urine, milk and bile, and its relations with the Wassermann, Nonne and other reactions, in health and in pathologic conditions. Their charts and the tabulated comparative findings in fifty-one cases show parallel reactions as a rule with the first phase of the Nonne reaction and pleocytosis, but the colloidal gold reaction was sometimes negative when the Wassermann was positive, and vice versa. Scarcely any of the exudates induced the maximum precipitation below a dilution of 1:10,240, but with transudates the range was wider. The reaction indicates that there are three kinds of transudates. With one the maximum of precipitation is between 1:10 and 1:320; with the second kind, between 1:940 and 1:1,280, and with the third, at 1:2,560. No difference between the urine from sound and diseased kidneys could be detected. Precipitation occurred with human milk, blister fluid and bile. They warn that in preparing the colloidal gold, the vessel must not be covered, as retention of the gas generated interferes with the reaction later. They specify a few other minor points in the technic.

Revision of Banti's Disease.—Mitamura presents evidence that the spleen in true Banti's disease shows fibroid degeneration of spleen tissue while the liver may in time develop cirrhosis or atrophy, but it differs essentially from that with Laennec's and other forms of cirrhosis. He cites 141 articles on the subject from the literature, and gives five plates of photomicrographs of the necropsy findings in seven cases reported with minute detail. There was a history of syphilis in two, and it was suspected in a third case. He declares that the term Banti's disease should be restricted to this type of primary splenomegaly with gradually increasing simple anemia, with finally, sometimes, ascites, and in the later stages gastro-intestinal hemorrhage. Splenic anemia and Banti's disease are therefore synonymous terms, he adds. The latter is essentially much like hemolytic jaundice, especially the acquired form, although not exactly the same. Thrombosis in the portal system is mainly responsible for the late ascites in the Banti's syndrome. In Mitamura's cases the enlargement of the liver was noted under 10, under 20, or under 30 years of age in about half the cases, and this stage of splenic anemia lasted from a few years to twenty years. Then the stage of ascites without impairment of the bile

secretion lasted about a year. In the third, terminal, stage the liver was much reduced in size and bile production was diminished. This phase lasted two or three years. No operation had been attempted except in two of the cases; fatal peritonitis followed in one, and the other patient succumbed to heart weakness. The others died in time from marasmus or gastro-intestinal hemorrhage.

Berliner klinische Wochenschrift, Berlin

Nov. 24, 1919, 56, No. 47

- *Prohibition of Hypnotic Exhibitions. E. Schulte.—p. 1105.
- Delivery of Milch Cows to the Entente. Rott.—p. 1108.
- *The Sachs-Georgi Reaction. W. Wolffenstein.—p. 1110.
- *Deep Roentgenotherapy in Leukemia. E. Rosenthal.—p. 1113.
- Pectoral Fremitus in Croupous Pneumonia. Arneith.—p. 1116.
- Morphology of Lymphocytes. H. Klien.—p. 1117.

Prohibition of Exhibitions of Hypnotism.—Schultze deplors that hypnotic exhibitions are becoming so frequent, as he has seen great harm result to subjects who have been hypnotized. He recites in detail the case of a young woman who after being hypnotized one evening by a traveling hypnotist presented marked mental disturbances. As she started for home, she insisted that she must go back, again and again, and at home she ran about with fixed eyes and outstretched hands, apparently insensible to her surroundings, though she recognized her friends. The hypnotist was finally sent for at a late hour, and he succeeded in quieting her. After a restless night she went to her work, but was unable to attend to her duties and had to be sent home. She felt compelled to return to the hypnotist, and complained that she could not think clearly. After a week of this, Schultze hypnotized her in presence of a colleague, and impressed on her that in future only Schultze and his assistant could hypnotize her, and that after this she would have no more trouble. She was then very slowly and cautiously brought out of the hypnotic state and in a few days had entirely recovered. He emphasizes that hypnosis cautiously applied is the best means to cure the effects of hypnotism improperly carried out. Before the war, some of the German states had laws prohibiting exhibitions of hypnotism, but they are not being enforced now. Austria and Italy have also passed laws of the kind.

The Sachs-Georgi Reaction.—Wolffenstein and his associates made comparative tests by the Sachs-Georgi and the Wassermann methods in 1,000 cases, from which, it seems, four conclusions may be drawn: 1. Even with the most careful technic, misleading results seem bound to arise on account of the seemingly unavoidable errors in preparing the solutions, and it is therefore important always to use more than one type of reaction, in order by comparing results to reduce the percentage of error to a minimum. 2. The Sachs-Georgi reaction becomes manifest in syphilis earlier and may be elicited later than the Wassermann reaction. 3. The number of unspecific Sachs-Georgi reactions is relatively high, being especially common with ulcer molle and in febrile conditions. Clinically healthy subjects may for the time being give positive Sachs-Georgi reactions. 4. The foregoing observations limit materially the usefulness of the Sachs-Georgi reaction as compared with the Wassermann reaction. A diagnosis of syphilis and conclusions as to continuing treatment can therefore not be based entirely on a positive Sachs-Georgi reaction, nor even on a series of positive reactions.

Treatment of Leukemia with Deep Roentgenotherapy.—Two years ago Rosenthal published a preliminary report of his treatment of leukemia with deep roentgenotherapy. His experience at that time had been that after only one sitting the number of leukocytes was reduced to normal in from ten to fourteen days, during which time the spleen had become much smaller. The subjective symptoms disappeared in cases in which other therapeutic methods had failed. He gives in detail the history of his oldest case: The white cell count varied from 250,000 to 300,000. Feb. 5, 1917, the patient received a deep roentgen-ray treatment. February 14 the white cell count was 30,000, and later went down still further and remained under 50,000 until the end of April, 1917. End of October the white cell count was back to 250,000 again. The patient returned and received another single treatment. The count fell by crisis to 5,000 and remained stationary for

several weeks, but by June, 1918, after gradually rising, it had reached 230,000 again. A third treatment brought the count promptly down to from 5,000 to 10,000, but by January, 1919, it had again reached 230,000. After a fourth treatment the count was 20,000. The spleen decreased in size after each treatment. For five or six months after each treatment the patient felt well and was able to work, but then a slight weakness set in, with a feeling of pressure in the region of the spleen; these symptoms were promptly relieved by renewed treatment. Rosenthal's experience thus indicates that the favorable effect of a deep roentgen-ray exposure wears off in about eight months, when treatment must be renewed. He still considers this the most reliable treatment in leukemia. Severe reactions, however, do result, and he admits a mortality of 12 per cent. in 25 cases, which he considers a fair showing in view of the seriousness of the prognosis in leukemia.

Deutsche Zeitschrift für Chirurgie, Leipzig

July, 1919, 150, No. 5-6

- *Prolapse of the Rectum. E. F. Curt Heinemann.—p. 289.
- Operative Treatment of Recent Fracture of Forearm. A. Szenes.—p. 333.
- Intra-Abdominal Loss of Fat as Factor in Hernia and Ileus. Bode.—p. 344.
- Unusual Cases of Mechanical Ileus. R. v. Wistinghausen.—p. 352.
- *Arterioesenteric Occlusion of Duodenum. F. Ranzel.—p. 361.
- Hyperemia and Edema from Constricting Band. Mende.—p. 379.
- Extensive Resection of Intestine for Infarct from Arterio-Embolism. H. Smidt.—p. 399.
- *Etiology of Cleft Face. R. Drachter.—p. 409.
- Simple Perforating Ulcer of Large Intestine. J. Dubs.—p. 415.
- *Fat in Plastic Operations on Lungs. K. Stromeyer.—p. 420.

Prolapse of the Rectum.—Heinemann advocates a method of operative treatment with which he has been successful in nearly all of twenty-six exceptionally severe cases. He sutures the anus, and then through a median incision, from the anus to the coccyx, with a semicircular extension at the edge of the anus, he slits the muscles and loosens up the rectum walls. Then he passes three threads lengthwise through the rectum wall, except for the mucosa. As the threads are tied, they take up three deep transverse folds in the rectal wall. By tying the ends of the threads from each side together, a lengthwise fold is taken up also. The higher threads are fastened to the coccyx or a ligament to suspend the rectum. The levator ani muscles are then sutured, and if necessary a fold is also taken up in the sphincter.

Arterioesenteric Duodenal Ileus.—Ranzel cites experiences which demonstrate that this form of strangulation ileus can develop without dilation of the stomach, contrary to the opinion of some. He then reports a personal case in which a much emaciated man of 28 developed the arterioesenteric duodenal occlusion spontaneously. The symptoms came on suddenly while he was traveling, obliged to stand up, and he had been eating very little. There was no collapse, the colic-like pains being the main symptom. When he reclined, the pains were relieved. In this case and in four others on record there was bluish discoloration below the occlusion. In treatment, the knee-elbow posture should be tried, introducing the stomach tube with the head low. If these measures fail, he advises gastro-enterostomy before the debility becomes extreme, as he applied in his case, with prompt recovery.

Congenital Clefts in the Face.—The cleft in the face extended from both orbits to the mouth, the nose region forming thus a peninsula, as it were, and the umbilical cord was firmly impacted in the cleft, while an amniotic band was caught in one orbit.

Fat in Plastic Operation on Lung.—Stromeyer says that the cavity in the lung left from a war wound was large enough to hold two billiard balls, several ribs having been resected and three fistulas from the bronchi opening into it. He twisted a pedunculated flap of adipose tissue around to fill the defect, with a second flap to hold it in place. The bleeding and the coughing stopped at once, and recovery was soon complete except that the man still has to wear a corset to prevent the flapping of the lower part of the chest wall on that side.

Münchener medizinische Wochenschrift, Munich

Nov. 28, 1919, 66, No. 48

- Focal Illumination of the Eye. A. Vogt.—p. 1369.
Separation of *B. Typhosus* from *B. Coli*. E. Friedberger.—p. 1372.
Cerebral Reactions Following Salvarsan. G. L. Dreyfus.—p. 1374.
Silver Salvarsan Sodium. J. Hoppe.—p. 1376.
Technic of Silver Salvarsan Injection. C. Stern.—p. 1377.
Diphtheria in Wounds. Kehl.—p. 1377.
Intrathoracic Pressure and Respiratory Mechanism. R. Drachter.—p. 1378.
Deep Thermometry: II. B. Zondek.—p. 1379.
Diagnosis of Tuberculous Meningitis in Children. E. Rominger.—p. 1381.

Utilization of Capillary Attraction to Differentiate Typhoid and Colon Bacilli.—Friedberger dips strips of filter paper, 1 m. wide and 10 cm. long, for twenty seconds to the same depth in equally concentrated suspensions of typhoid and colon bacilli. After the fluid has mounted up the strips by capillary attraction, the strips are then pressed down side by side for a moment on Endo plates. As the cultures develop it is found that the typhoid bacilli have mounted higher, as a rule, than the colon bacilli. The experiment may be made with a mixture of the typhoid and colon bacilli, and the strips may be cut into pieces 1 cm. wide (as far as the fluid has climbed). If these pieces are then put in a physiologic sodium chlorid solution and cultures made on Endo plates, the colon bacillus cultures will be found almost exclusively on the lower portions of the strips. The higher on the strips, the more the cultures of *B. typhosus* predominate. He is continuing his research on this elective capillary attraction for different bacteria, and thinks that it will aid materially in differentiation of the various types.

Surgical Wound Diphtheria.—Kehl states that in order to pronounce a final diagnosis of wound diphtheria, examination of smears alone is not sufficient, as it is impossible to determine to what extent pseudodiphtheria bacilli may be mixed with the genuine bacilli. He therefore recommends that in all cases in which pole-staining bacilli are isolated, the final diagnosis should be made on the basis of animal inoculation. An accurate diagnosis is especially important in view of the fact that genuine wound diphtheria is just as infectious as pharyngeal diphtheria. Sixty wounds that looked suspicious were examined as to their *B. diphtheriae* content and found to be negative. There was one finding that seemed doubtful, but inoculation of an animal showed that the organisms were pseudodiphtheria bacilli.

Instrument for Recording Intrathoracic Pressure and the Respiratory Mechanism.—Drachter describes a syringe instrument which serves to give a clear idea of intrathoracic pressure relations under physiologic and pathologic conditions.

Deep Thermometry.—Zondek gives a series of tables illustrating the varying temperature found in different parts of the body. The temperature in the musculature of the abdominal walls and the extremities is lower than that of the rectum, but near large blood vessels the temperature of the muscles is slightly higher, although still lower than the rectal temperature. The differences are not constant, and vary in different subjects. The temperature of the tissues gradually diminishes toward the surface of the body. Each centimeter marks a difference of 0.25 C. on an average. Layers of fat are poor conductors of heat and serve as a protection in the heat economy, consequently a dry skin presents a lower subcutaneous temperature than an oily skin. If the skin is oily, there is thus a marked contrast between the epidermis and the underlying fascia. The temperature of subcutaneous tissues depends on the character of the underlying tissues, being lowest over bones. The temperature of organs, taken during operations, showed that the liver, the kidney and the uterus had temperatures between the preoperative and post-operative rectal temperatures. During the operation, the body temperature falls. The lungs have almost rectal temperature, the difference being 0.2 C. In one suppurating uterine myoma the temperature exceeded the rectal temperature, doubtless owing to acute inflammatory phenomena. In a hydrocele a surprisingly low temperature was noted.

Diagnosis of Tuberculous Meningitis in Children.—Rominger comments on the tendency to regard tuberculous menin-

gitis as a distinct disease, whereas it is important to bear in mind that it is in reality only one aspect of general miliary tuberculosis, and that the condition of the other organs, especially the lungs, may offer valuable evidence for an early diagnosis. Although tuberculous meningitis is usually easily recognized if there are pronounced brain symptoms, yet in the beginning of the disease, as long as only dubious general nerve symptoms are present, diagnosis is often difficult. Even when meningitis is diagnosed, it is often difficult to ascertain what form of meningitis is present. Roentgenograms of the lungs should be made, and they are often valuable, especially if the lungs already show signs of miliary tubercles, but negative results do not by any means exclude tuberculous meningitis, as miliary tubercles in the lungs often develop late, sometimes only shortly before death. Lumbar puncture is instructive. The tubercle bacillus is found only in from 80 to 90 per cent. of the cases and often requires several days of patient search. Lymphocytosis can only be regarded as a possible indication. Increased pressure as shown by lumbar puncture is important, but more valuable still is evidence of an increased albumin content of the cerebrospinal fluid, for which Pandy's reaction is the most reliable and practical method. This consists in adding a drop of cerebrospinal fluid to 1 c.mm. of 7 per cent. phenol solution. Cloudiness at the zone of contact is a sign that the fluid contains easily precipitable albuminous substances in pathologic quantities. In a series of fifteen cases the Pandy reaction was positive.

Therapeutische Monatshefte, Berlin

December, 1919, 33, No. 12

- *Treatment of Gas Bacillus Infection. E. Vogt.—p. 474.

Gas Bacillus Infection.—Vogt warns that the premonitory symptoms of gas bacillus infection are intense pain and a peculiar odor of the wound, distress, and the disproportion between the findings in the wound and the general condition. Metastasis is rare, but it is favored by ischemia at any point, even remote.

Therapie der Gegenwart, Berlin

December, 1919, 60, No. 12

- *Predisposition to Accidents. C. Widmer.—p. 441.
Potency of Extracts of Digitalis. O. A. Rösler.—p. 447.
*Treatment of Shriveling Processes in the Chest. J. Zadek.—p. 450.
Sprays in Treatment of the Eyes. E. A. Heilmann.—p. 459.
Treatment of Malaria. W. Brandt.—p. 475.
*After-Treatment of Dislocation of the Hip Joint. G. Müller.—p. 479.

The Predisposition to Accidents.—Widmer argues that the inbred experience of countless ages enables us to sidestep injury unconsciously. Only when we focus our consciousness on the reaction to the occurrence is injury liable to result. By practice or by diverting the attention, the consciousness of the act becomes eliminated, and the inbred experience then carries us safely past the danger point. He refers in particular to industrial accidents.

Treatment of After-Effects of Pleurisy, etc.—Zadek gives case histories which show the remarkable benefit that can be derived from the special breathing exercises he describes in warding off and curing adhesions and many chronic pathologic conditions entailing retraction and shriveling of lungs and pleura. Inspiration is slow and deep "as if to burst one's belt"; expiration is aided with the hands applied to the chest wall below the breast, the thumb turned toward the back, the little finger on the costal arch at the nipple line, the fingers in the interspaces. There should be no active pressure from the hands. Inspiration should take about four seconds and expiration three seconds, and the exercise should be repeated from three to six times a day. Three inspirations at first are enough, but later from three to eight minutes or longer are given to the exercise. The exercise should always stop short of inducing palpitation, etc.

After Correction of Dislocation of the Hip Joint.—Müller applies a splint or other appliance after correction which relieves the hip joint of weight bearing, while at the same time it presses the head against the acetabulum. As the hip joint is used, the head bores a niche for itself. By this prophylactic treatment in all cases in which conditions seemed to invite recurrence, it has been warded off except in

two of his hundreds of cases in the last fifteen years, and in these two there had been fracture of the neck.

Zentralblatt für Chirurgie, Leipzig

Feb. 7, 1920, 47, No. 6

- *Experimental Production of Pseudarthrosis. M. Katzenstein.—p. 122.
History of Osteochondritis of the Hip Joint: Legg-Perthes-Calvé Disease. G. Perthes.—p. 123.
Retroperitoneal Access to Deep Abscess in the Abdomen. J. Keppich.—p. 125.
Plastic Operation on Under Lid for Support of Artificial Eye. H. Teske.—p. 128.

Avoidable Cause of Pseudarthrosis.—Katzenstein relates experiences which apparently demonstrate that the capacity of the bone marrow for regeneration of bone is sufficient for the healing of a fracture but that if any periosteum tissue is in contact with the bone marrow, the regenerating capacity of the latter is modified. Instead of producing bone, only a bone-like cartilage is produced. The result is a pseudarthrosis instead of normal healing. In experiments on animals, the bones could be made to heal normally or develop pseudarthrosis at will, by preventing or allowing any contact between periosteum and bone marrow.

Zentralblatt für Gynäkologie, Leipzig

Feb. 7, 1920, 44, No. 6

- Puncture of the Uterus to Facilitate Delivery with Hydramnion. E. Wormser.—p. 137.
*The Fatalities After Sacral Anesthesia. E. Zweifel.—p. 140.
*Eclampsia and Vomiting of Pregnancy. J. Hofbauer.—p. 144.

Feb. 14, 1920, 44, No. 7

- Mechanical Dilation of the Uterine Cervix with Inflatable Bag and Weight Traction. A. Mueller.—p. 161.
Genital Hemorrhages in Cholera in Women. H. Kritzer.—p. 170.
Case of Bilateral Tubal Pregnancy. H. Brösmann.—p. 174.

Fatalities After Sacral Anesthesia.—Zweifel analyzes the ten fatalities that have been published as following sacral anesthesia, among the 4,200 cases on record in which this technic has been applied. In only three of the total ten fatal cases could the sacral anesthesia be held responsible. In these cases death followed in a few seconds, in seven minutes or in ten minutes, evidently from acute procain poisoning. In all the cases, 0.6 gm. of procain was the smallest dose used, and in some it was up to 0.9 gm. No mishaps have been recorded with doses of 0.4 or 0.5 gm.

Treatment of Eclampsia and Hyperemesis.—Hofbauer presents a number of arguments that the pituitary and suprarenal glands play an important part in the pathogenesis of pregnancy disturbances. The brain, liver, kidneys, and stomach are affected by the hormones from these two glands, and in ovarian treatment we have a means to inhibit the action of the pituitary and suprarenals on the sympathetic nervous system. By this antagonistic organotherapy he thinks we now have a specific causal means of treatment. Cases of severe hyperemesis at the second month and of eclampsia at the ninth month in two primiparas treated in this way with ovarian extract showed marked benefit. This treatment seems to paralyze the pathogenic excessive functioning of the pituitary-suprarenal system. He advises to give the ovarian extract early and freely, from the first symptoms, with sedatives, but strictly avoiding morphin and pituitary extract. He warns also against chloral for more than a single dose of 2 gm., by the rectum, saying that chloral injures the heart, and its action on the respiratory centers also calls for extreme caution. It may induce cyanosis and pulmonary edema.

Zentralblatt für innere Medizin, Leipzig

Feb. 7, 1920, 41, No. 6

- Specific Treatment and Prophylaxis of Tuberculosis in Man and Animals. A. Strubell.—p. 97.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 3, 1920, 1, No. 1

- *Medicine in Europe a Hundred Years Ago. H. T. Deelman and C. C. Delprat.—p. 1.

Medicine a Hundred Years Ago.—Three young physicians started from Holland to visit the medical centers in France

and Germany in 1818. One was C. B. Tilanus, and Deelman and Delprat have compiled an account of the medicine of that day from their diaries and notebooks, particularly those kept by Tilanus. Dupuytren and Larrey at Paris seem to have shone by their kidney stone, hernia and fracture operations, but abdominal surgery was practically unknown. Only one of the mastectomies for cancer proved successful among the many they witnessed. All the other patients succumbed to infection. Only one survived of ten women operated on by Dupuytren for cancer of the cervix, and he knew of only one woman still living two years after an operation of the kind.

Hygiea, Stockholm

Jan. 31, 1920, 82, No. 2

- *The Diagnosis of Exophthalmic Goiter. A. Troell.—p. 33.
*Lumbar Puncture in Treatment of Acute Wood Alcohol Poisoning. M. Zethelius.—p. 45.

Hypersensitiveness to Epinephrin in Hyperthyroidism.—Troell gives charts showing the clinical response to subcutaneous injection of 0.5 c.c. of a 1:1,000 solution of epinephrin in six patients with manifest exophthalmic goiter and in four with ordinary goiter. The findings on the whole confirm those reported by Goetsch (1918) in 195 cases of goiter, including fifty of the exophthalmic type, demonstrating the peculiar hypersusceptibility to suprarenal extract in clinical states of hyperthyroidism. This characteristic response to epinephrin and also the discovery of extreme functional activity of the thyroid cells, as indicated by the mitochondria contents, will aid in the differential diagnosis from other nervous disturbances, and also in estimation of the value of different modes of treatment. The surgeon also may be interested in the peculiar hypersensitiveness to epinephrin with hyperthyroidism, as affecting his routine use of epinephrin with the anesthetic at operations.

Lumbar Puncture in Treatment of Blindness from Wood Alcohol Poisoning.—Zethelius gives here a preliminary communication on the benefit from lumbar puncture as he witnessed it in three cases of blindness from methyl alcohol poisoning. Great improvement in vision followed the lumbar puncture at once and continued to progress, as the punctures were repeated, in one case, with vision up to 1 in about a month. There had been an interval of four days before any appreciable symptoms had developed, and then all the symptoms except the visual soon subsided. In the second case the punctures were begun the second day after ingestion of the liquor, with vision of 0.1/60 in the right eye and only perception in the left. The amaurosis persisted for twelve days but by the end of the second month vision had become 3/50 and 0.1. In the third patient, vision increased from amaurosis by the tenth day to 0.3/60 and 1.5/50 in about seven weeks. In these last two cases there was persisting atrophy of both papillas. The lumbar puncture was repeated three or four times in each case. The benefit from it, Zethelius says, surpassed that from any other known method of treatment. We know that alcohol or its derivatives pass into the cerebrospinal fluid; they have been found in it at necropsy in wood alcohol cases, and release of the toxic fluid is thus directly indicated, while reduction of intracranial pressure may lessen to some extent the chance for absorption by the nerve substance of the poison in the fluid.

Ugeskrift for Læger, Copenhagen

Feb. 26, 1920, 82, No. 9

- *Experimental Leukemia. V. Ellermann.—p. 279.
*Treatment of Uric Arthritis. L. Petersen.—p. 290.

Experimental Leukemia.—Ellermann describes further experiences with strain H of the virus of fowl leukemia cultivated through twelve generations.

Treatment of Gouty Arthritis.—Petersen gives potassium iodid and hexamethylenamin, determining the tolerance of the iodid by examining the urine for retention of iodine. This combined treatment has often given excellent results with pains in the joints, and tophi. At first the pains are increased, but by the end of the week improvement is evident, and in six or seven weeks the maximal effect is reached.



Rear Admiral William C. Braisted
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THE SOMATIC CAUSES OF PSYCHONEUROSES *

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Wandering through a bookshop some months ago, I saw two counters piled up with literature devoted to varieties of psychic experience and elucidation. There were books on new thought, on dreams, on personality, on the disadvantage of being inferior, on pschanalysis (adapted to any intelligence), on psychic research; also on slips of the tongue, Christian science and the life beyond. It showed to me what a tremendous grip the psyche had taken on the unthinking but reading world. I still like the soul and follow its aspirations, but I feel as if the psyche was overworking her job and becoming psychopathic. Perhaps this experience had something to do with the trend of this contribution, which is an effort to show that there is a physical, a neuropathic factor in the causation of the psychoneuroses; also that the psychoneuroses may develop directly from concussions, traumatisms and toxins, and that some constitutional neuropathic condition is necessary for the psyche to work out its mechanisms of defense, readjustment, etc.

THE EMPHASIS PLACED ON PSYCHOGENESIS

The psychoneuroses are the so-called functional troubles which are grouped more specifically under the heads of hysteria, psychasthenia (compulsions, obsessions, fears), neurasthenia and anxiety states. Among these groups, the war neuroses were made up largely of hysterias and anxiety states, while in nontraumatic civil life we find a greater prevalence of psychasthenia and anxiety states.

There has been a tremendous amount of emphasis laid on the psychology and psychogenesis of these affections. The formula that war neuroses, taking them all in all, were nothing more than defense states, namely, the expression of a subconscious desire through awkwardly planned devices to get away from the front, was almost officially promulgated.

On the other hand, among the internists, there has been a large amount of activity of thought and emotion paid to the physical side of these conditions. Autotoxemia and sepsis dominate a field once occupied by malaria, the reflexes and other vague phases of pathogenesis. There is at present a sort of rivalry between the colon and the teeth, on the one hand, and the gonads and the psyche on the other. I do not attach myself to either of these groups, but I find that

there are always physical as well as psychic factors in the causation of the psychoneuroses; that pathologic reactions do not occur in anatomically and physiologically sound bodies.

DENIAL OF EXISTENCE OF FUNCTIONAL DISEASES

I do not suppose that any one denies now that there is really no such thing as a functional disease. In all the neuroses and psychoneuroses something material and neural has happened. To say, then, that a disorder is due to emotion or to some prompting of the subconscious or to a suggestion, is not giving the last word of explanation. There is some evidence that we can have no emotion without a previous physical change, and it is definitely known that emotion is always associated with and followed by notable physical changes. The neurotic disorders, such as hemiplegia or monoplegia, which follow an emotion have, one may be sure, also some underlying physical change. It seems to have been lately demonstrated that these physical changes which are usually associated with an emotion may also occur as the result of concussion or toxemia. In other words, psychoneuroses are not ever entirely psychogenic, but are sometimes somatogenic and sometimes of mixed origin.

Carver and Dinsley¹ state that there is a large group of war neuroses in which the causative factor is not emotional, but commotional. This commotional group of neuroses is composed of three subgroups: (1) one in which there is direct concussion by the missile on the tissues, overlying the nervous system, but no damage to brain, cord or membranes; (2) a subgroup in which there is no direct concussion but the patient is subjected to violent variations of pressure from proximity to the explosion, and (3) a subgroup in which the factor is extremely rapid vibrations which are one of the less known products of the detonation of high explosives. The vibrations are capable of agitating the nervous system in such a way as to produce a condition which clinically closely resembles that produced by emotion.²

Carver and Dinsley performed experiments on animals. They established a detonating station, X, and arranged a series of three zones about it. Zone A included the area of direct concussion; Zone B that of indirect concussion, and Zone C, an area in which high explosives detonate only if they have the same tonal standard as the explosion at X. They also experimented with fish and then with rats and mice.

1. Carver, Alfred, and Dinsley, A.: Some Biological Effects Due to High Explosives, *Brain* 42:113 (June) 1919.

2. Carver and Dinsley give some interesting facts about explosives. The pressure of high explosives may exceed 300 tons per square inch, and the waves of detonation run through the exploding mass at the rate of 10,000 meters per second. As the result of an explosion, there occur massive vibrations due to compression and decompression, molecular vibrations, and probably finer ethereal vibrations, such as are utilized in wireless telegraphy.

Finally, they made observations on men working in a demolition station and subjected to the effects of detonations but protected from any direct concussion and not subject to any element of fear. They found that in zones B and C fish lost for hours their sense of equilibrium; that in these zones rats and mice showed forms of paralysis and nervous disturbances, from which they eventually recovered, and that in zones B and C some of the men showed marked nervous disturbances.

They conclude that (1) while the neuroses of war may be and are brought on by purely emotional shock, the importance of this has been overestimated; (2) they may be caused also by "purely physical shock" as demonstrated in their experiments, or (3) they may be of mixed origin.

CLINICAL EVIDENCE

Clinical evidence of some physical and physiologic defects in the genesis of many psychoneuroses is very abundant. I have many recorded cases, but I shall refer to only one.

A boy, aged 19, whose family history was good so far as nervous or mental disorders were concerned, whose father died of hemorrhagic pancreatitis, and whose mother and a sister were living and well, when young had been well and normal, good at school and social in his habits, with some musical taste and talent. At the age of 14, while going to school, a boy said to him: "What is that on your ear?" This annoyed him and he felt as if there was something in the ear, and became nervous about it. Next day while going to school, he suddenly felt as if there were a burning torturing fluid in his head and pouring through his body. The sensation lasted only a moment, but immediately afterward he became very nervous, restless and apprehensive. He was afraid especially of having another seizure, etc., and did not dare to go to school. Then he became afraid to go out alone on the street and was in constant apprehension lest something would happen to him. The range of his fears enlarged; he feared he might have tuberculosis or paralysis, or some other disease. He had finally to give up all his school work, and he was placed under a private tutor. Finally he became too nervous to pursue his studies under any conditions.

In the first year of his illness, he had two or three more of these "seizures" followed by increase of nervousness. No attack was as severe as the first, however, and in none of them was there any fainting or twitching or palpitation. His family noted no physical change during the attack, though he thinks he became pale.

When 16 years old, his father secured a farm and put him to work on it. He tried this for a couple of years, but got no better and finally gave it up and came home. He was then 18 years old. One afternoon he went out with his father to see a fire. He used to love to go to fires, but at this one he became frightened and had another seizure. After this he was worse than ever. The sound of fire-bells threw him into hysterical excitement, and he would tremble and cry. He became afraid even of the sound of trolley cars. He could not go out of the house alone, he was afraid to meet people, and was continually running to his mother, telling her his troubles and asking for relief. His father meanwhile had died (which relieves us of considering the so-called Oedipus complex).

During all this time his symptoms were combated by his family and physician, by change of occupation and environment, therapeutic talks, sedative medicines, etc.

He was brought to me a short time after the fire episode, when he was at his worst. He had then been for four years nervous, apprehensive, hysterical and entirely lacking in courage, independence and capacity to concentrate or carry on any kind of study or work.

I was told that his habits were good, and there was no history or evidence of masturbation—a matter closely

inquired into. His physician thought he had deficient sexual activity. He slept badly, but he had no fear dreams except once—just after the first attack.

I found him to be an intelligent boy, affectionate, unselfish and very anxious to get well, and tremendously disturbed by his nervous condition. He showed no objective signs of nervous disease, nor any of the stigmas of dementia praecox. His story was not of the schizophrenic type.

The boy was 6 feet, 2 inches in height, but he had no marked pituitary anomaly. He had no signs of thyroidism except a slight tremor of the hands. His hair and teeth were normal. He had not the make-up of status thymolymphaticus; his hands and feet were often cold and blue; he had undue fatigability and indefinite myalgic pains, a constant subnormal temperature and a dry skin. The blood pressure was normal. He was not anemic.

He was placed on 5 grains of thyroid gland twice a day; later, 2 grains twice daily.

Within two weeks after treatment was begun, the boy was rather magically changed. He lost his fears and restlessness, and nervousness and insomnia. He was able to go out alone.

He went back to his farm, worked there daily, motored, and became practically well and continued so for nearly three years. He takes the thyroid intermittently, and if he feels nervous or panicky, he gets relief after using the gland.

Recently I had a letter from him saying he was practically well, though he occasionally got a little nervous and apprehensive.

Nov. 10, 1919, he came to my office and confirmed the foregoing story.

He described again his seizures. Suddenly, without any cause except perhaps some extra excitement, he felt as though a burning, torturing fluid were filling his head and body. He became pale; his hands sweat. The sensation left him at once, and sometimes he immediately felt normal. Then in two or three days, there came on him a condition of nervousness and apprehension, and he passed into a chronic condition of an anxiety neurosis, with restlessness and insomnia, and constant fears of a return of the seizure, or some other disaster.

This patient is not cured, and he may have some recurrence of his condition. I do not infer from this isolated case that psychasthenic conditions are always or even often due to hypothyroidism. I do not know even now that it was hypothyroidism in this case or that there was not other endocrine defects, and that thyroid feeding simply reestablished a balance.

There must have been behind his gland defect some instability of the nervous centers. There always is in these cases. But the case does demonstrate that sometimes a gland defect is present in the psychoses and that no amount of attention paid to mental conflicts, conversions, condensations, complexes, sense of inferiority or any other phases of the psychoanalytic and therapeutic effort would be of much use as long as his internal secretions were working defectively.³

The facts I have recited I am sure sufficiently emphasize the points I have wished to make and I might end my paper here.

But I would like to say something about the particular physical changes that occur, I believe, in part or in whole in the psychoneuroses.

THE SOMATIC MACHINE

We are told that these disorders are essentially bred by emotion; but from this point on, the method of development of the psychosis is different in accordance with the school of psychology to which one belongs.

We know, but perhaps we do not always realize, how intricate and delicate is the physical machinery

3. Dr. Beverley Tucker has reported three cases similar to the foregoing. Compare also Wechsler, I. S.: *Neur. Bull.*, 1919, No. 2.

connected with emotional states and the mental processes. We know the location in the brain of parts concerned in sensation, perception and memory; we know that the mental machine is made up functionally of many complex minor systems, and that consciousness is associated with the coordinated activity of a large portion of them. We know that the parts hang together by reason of very numerous tenuous threads and delicate contacts.

THE SYNAPSIS

An explanation of certain brain functions has been based on the hypothesis of the activity of the dendrites, and their ameboid movements. This view has been put forth by Mathias Duval and Lépine. It has been supported by Wiederham and half a dozen others. It has been contradicted by the experiments of Azoulay and others. Lugaro has another theory; that of the outgrowth and subsidence of the cell body and dendrites. Renaut has a somewhat similar view, and for the time Cajal invoked the movements of neuroglia. Later Cajal argues that new paths of psychic activity may be created by the growth and exercise of the fibrillae and dendritic processes, and weakened by disease and decay of these organs. Sherrington lays special emphasis on the functional importance of the synapsis.⁴

All these views came to the same point, namely, that the paths of conduction in the brain may be blocked or made more free by physical and mental agencies, and that in the activities of life there are continual shiftings and realignments.

I am going to venture on some speculations connected with these known anatomic facts. There is no reason why theorizing should be confined to psychologic machinists. And, besides, what I advance is not without some laboratory support.

It may be assumed that since the synapsis is a point at which the traveling nerve impulse has to pass over a break in anatomic continuity, it here meets its highest resistance. Some neural phenomena, therefore, might be expected to develop here, just as light or heat develops when an electric current meets a specially great resistance. The synapses of the cerebral cortex are thought to be the seat of consciousness (Macdougal). Whether this is so or not, I only use the term synapsis as symbolic of the fact that there are breakable points and points of variable resistance in the finer organizations of the brain.

The neural basis of disorders of association, such as occur in retardation, and of blocking of thought and of flight of ideas, may be in part explained by this mechanism.

Hysteria is a disease characterized by a dissociation of psychic systems functioning in sensation, perception or thought.

It is probable that the other psychoneuroses, neurasthenia, psychasthenia and the anxiety states, are due to dissociation of systems of neurons.⁵

4. Very early in evolution, we find that this mode of connection ceases and the cells, now known as "neurons," although in functional continuity, are separated from each other at the "synapse" by a membrane which plays a very important part in the mechanism of the reactions which take place in nerve centers. . . . The phenomena of fatigue, summation, irreciprocal conduction, excitation and inhibition are connected with this membrane (Bayliss: *Principles of General Physiology*, pp. 474, 477).

5. This view was given and elaborated on in the last edition of my textbook (1915); and Dr. Boris Sidis has independently worked out the same hypothesis, that the anatomic seat of the psychoneuroses is in the synapses, or due to their disturbed functioning. Experience confirms me in the opinion that this is a good working theory.

Recent experiments have given some laboratory proof of this kind of reasoning.

A. R. Moore⁶ has shown that strychnin, which greatly increases the reflex excitability of animals with a synaptic nervous system, has no effect on the neuro-molecular system of coelenterates which have no synaptic elements. It has a slight influence on echinoderms and a much greater one on crustaceans and mollusks which have more developed nervous systems.

Such a view, namely, the blocking of a functionally similar group of neurons or a decrease in its resistance, seems also to explain therapeutic results. In certain forms of psychasthenia with an underlying fatigue state, strychnin or small doses of opium will in a short time clear the mind and entirely relieve the patient. In some cases of very marked obsessions and anxiety and fears, feeding with pituitary and thyroid extracts promptly changes the whole character of the patients. A young man with an obstinate psychoneurosis was always promptly relieved by the administration of the "panacea" of Antonius Muca, the formula for which I obtained from Galen's works.

The morbid somnolence of dyspituitarism, due perhaps to some synaptic block in the thalamic region, has been relieved by gland feeding (Niles).

We know that the seat of the mental activities is not so much in the cell as in the conducting fibrillae, and it is these that are most disturbed in functional psychoses. The functions of the cerebral nerve cell are trophic and perhaps mnemonic.

The cell rapidly deteriorates and changes its content and form, but the nerve fibers are practically unfatigable, although they have as active metabolism as that of gray matter. These fibers are so persistently active because they are supplied with nourishment as well as with protection by the medullary sheath, except at the dendritic and peripheral endings; so we ought to expect exhaustion at the synaptic points sooner than in the cell or in the nerve itself. They would be also more exposed to the influences of toxins and fatigue products.

When a person has a great emotional shock, and there follow tremors, speech defects, paralyses or anesthesias, it may well be because the synapses of certain groups of neurons functionally selected and embryologically of similar development are blocked by the torrent of impulses aroused by fright or pain combined with excess of epinephrin or other toxic material thrown into the blood. Certain parts of the nervous centers are specially sensitive to infections and poisons, as shown in the case of encephalitis lethargica. The Lange-James theory of emotion and the physiologic experiments of others indicate that some physical change takes place in the nervous system which produces or precedes the mental state. In other words, the elaborate psychologic mechanism of the psychoneuroses with its theories of conflict, repression, conversions, compromise formations, condensation-inversion, uncompensated feeling of inferiority, may exist, but all these are not always necessary, and they are always agencies which have to act through a neural mechanism. If this is sound we shall rarely if ever get any psychosis.

The cause of psychoneuroses is not altogether a repressed sexual wish, an uncompensated feeling of inferiority, the basic emotional state of fear, the unsuccessful subconscious conflict, the Oedipus complex, or

6. Moore: *Proc. Acad. Sc.* 3: 598.

the image-parent, if the whole thing disappears under pluriglandular feeding, nux vomica or codein. Yet I have seen all these things occur sometimes.

It is probable that very many kinds of conscious and subconscious mental disturbances, bad mental habits, misuse and misdirection of normal instincts as well as colonic and dental toxemias may lead to the same interference with the function of synaptic groups.

In the higher processes of mental activity there is an increased number of association-activities, and a greater danger of interference at these sensitive points.

In a motor-act, the nerve impulse passes through only two or three neurons. In a simple sensation, the impulse passes through four or five neurons. But in the mental state associated with fear and shock, with its aroused associated memories, the number of neurons and synapses involved is immensely greater and more widely diffused.

We know that in persons who are subject to psychoneuroses there is a congenital or acquired special instability of the nerve centers, including those of the sympathetic and autonomic nervous system. This means, for one thing, that there is a weakness or defect in association and consequently a defect in those associations which give control and balance, the processes of deliberate thought and judgment.

When a slight emotional shock throws a person into morbid panic or tears, it is because some of the associative strands that ordinarily feed into the conscious mind do not act. Some synapses are blocked; some are spastic and overtight in their connections.

There is reason to believe that we can at times control these synaptic functions by force of will—if one chooses to use that now tabued word—or by changing the field of attention. We raise the threshold of consciousness in our intentness and we no longer hear annoying sounds. By training, we prepare the brain and mind against painful impacts. Some persons can lie down and so direct their attention that they put themselves to sleep in a few minutes. We certainly, directly or indirectly, hold much control over the dendrites, if they are healthy. So I am supposing that in psychoneuroses, a sick synapsis may be the factor on which the activities, aroused by some emotion, or by the vibration of Zone C play, and thus, by attacking it, we get all the clinical phenomena of these disorders.

THE MECHANISM OF SOMATIC ORIGIN OF PSYCHONEUROSES

When an emotional state, say of fear, exists, I suppose that vibratory waves and auditory sensations have produced neural changes associated with an intense consciousness of fear, and then perhaps there follows unconsciousness. Many physical changes, vasomotor, glandular, etc., occur at the same time. If this condition now is followed by a hemiplegia or stuttering and tremor, I contend that these latter conditions may be due to subtle changes in the nervous systems. Cellular swelling, varicosity of the dendrites, blocking of synapses, or neuroglia movements. I would add focal injury with diaschisis; for the principle of diaschisis may play a part in minor as well as major local injuries.

The other view, which also may be true, is that after the detonation or concussion and emotion a certain subconscious psychic power is exercised by which the patient determines that he shall tremble and stutter or be hemiplegic or blind in order to accomplish a certain

object. This is to assume that some kind of conscious or subconscious force like that of a "censor" loosens certain inhibitions, or sends out or checks a certain intelligently directed morbid neural discharge.

This view is an interesting and plausible hypothesis. I put the matter somewhat like this:

X is the center of detonating force; Zone A, of direct concussion; Zone B, of indirect concussion; Zone C, of indirect concussion by high frequency waves.

The patient in B or C receives and feels:

1. Concussion waves on the brain and hears
2. The detonation.
3. Physical changes occur in the nervous system due to concussion with gross, or fine, or molecular waves.
4. Emotion, e. g., of fear, leading to Nos. 6 and 7.
5. Subconscious desires, defense activities, adjustment activities leading to No. 7.
6. Organic or biochemical disturbances in the nervous system (toxic or endocrinic, leading to No. 7).
7. Psychoneurotic phenomena.

What is claimed by me and shown by experiment is, that Nos. 4 and 5 may not be present and are not always causative factors; also, that in the nontraumatic psychoneuroses, such as the psychasthenias, neurasthenias and anxiety states, Nos. 4 and 6 are dominant, acting on a neuropathic nervous system. This particular form of the neurosis is determined by the special structural weaknesses in the individual's make-up.

REPLY TO OBJECTIONS

Of course, the first and obvious retort to the view I am supporting is this: If a monoplegia, for example, or other form of neurosis has an organic cause, how can it be cured by a single mental effort or by suggestion?

My reply is that the organic change is in more than a majority of cases biochemical, yet real as a sclerosis, brought on by a shifting of neural changes through attention or concentration on a certain object.

In certain emotional and exhaustion states the stomach does not secrete juice, and in the same way the neurons do not transmit their currents. In emotional states the total of neural or cerebral energies is massed in certain minor and major association groups connected with the particular form of apprehension or terror. By effort of volition or by a counteremotion, the equilibrium is restored. But some patients do not get well by any of these easy methods.

The sacred formula of dynamic psychology is that mental activity is a biologic phenomenon—to which we gasp and assent. Every action of the mind must be preceded by a previous action, every thought by some previous mental state. Hence it is said, we can trace back the cause and mechanism of all mental states by sufficient analysis. This view, however, is not proved and is, indeed, proved untrue. Certain mental states may be caused by concussion or by toxins.

CONCLUSION

My argument, then, is to the effect that the psychoneuroses are organic as well as psychic conditions. Being thus in part neurologic diseases, I think it would be a disaster if neurology were to abandon the study of this exceedingly numerous and sorely handicapped group of patients. If this should happen, they would go first perhaps to various types of psychotherapeutic specialists and perhaps later to clinical psychologists

and pedagogues. The last is already happening. The management of these cases calls for the closest observation and the most accurate study of the personality, but also of physical, metabolic and endocrine defects. It is, therefore, to trained neurologists conscious of their responsibilities and familiar with the best technical methods that the care, and I would add the prevention, of psychoneuroses belongs.

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THE PHYSICIAN AND PROHIBITION

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The question now before us is not whether prohibition of the use of intoxicating liquors as beverages is right or wrong—though most of us are convinced that it is one of the most beneficent acts ever passed by a legislature—but, it being the law of the land, how we can aid in its enforcement not merely passively, by obeying the rules and regulations formulated by the authorities, but actively as well by devising ways and means of making easier the establishment of the new order. As the medical and pharmaceutic uses of alcohol offer, at present, some of the most perplexing problems in the administration of prohibition, it behooves us to formulate principles for guidance in our use of alcoholic liquids, most especially to determine to what extent we can dispense with the use of wine, whisky and brandy: for although alcohol prescribed under any other name is just as intoxicating—when it is less pleasant, it is less liable to cause addiction, especially when safeguarded by the regulations of the prohibition law.

USE AS SOLVENT AND VEHICLE

The employment of alcohol as a solvent, vehicle and preservative would be much reduced, and, with this, the chances of the abuse of medicines as intoxicating liquors greatly diminished, if some of the principles here outlined were incorporated in practice.

The solid form should be preferred to liquid medication, not only for this but also for other reasons. Solid medicine is smaller in bulk, and hence more portable. This is the reason traveling men often request that their medicine be prescribed in capsules. Disguising is much more readily accomplished, especially by encapsulation. In view of the fact that, for instance, the horrible taste of the iron, quinin and strychnin combination can be completely disguised by prescribing it in the form of capsules, it is poor technic, to say the least, to inflict the elixir "I. Q. and S." on a patient's palate. Danger from incompatibilities, as, for example, from formation of a poisonous sediment, is also done away with by prescribing in solid form. Furthermore, dosage is more accurate, as variations in the size of teaspoonfuls is eliminated. The chief reason for administration in liquid form is the necessity of minimizing gastric irritation by such agents as soluble iodids, bromids, salicylates or chloral.

The popularity of proprietary medicines, it has well been said, is directly proportionate to the amount of alcohol they contain and the inoffensiveness of their other ingredients. A principle which, it seems, if incorporated in legal regulations regarding proprietary

medicines might save the authorities much difficulty in eliminating the use of these nostrums as intoxicating beverages is this: Proprietary medicines must be put up in solid dosage form, unless the dry residue is so highly irritant as to be injurious to the stomach when given in this manner. Thus, the generally specious claim of the necessity of alcohol as a solvent and "preservative" might be done away with, and the use of these tipples ended. It will then be found that, for many proprietary medicines, alcohol was indeed the essential preservative of popularity.

In case of extractive preparations, the coming pharmacopeial revision might do away with tinctures of harmless drugs. The fluidextract of such drugs, being much more concentrated and active, is less likely to be used as a beverage. With poisonous drugs, on the other hand, there is no danger of their tinctures being put to such use.

The entire class of spirits, with the exceptions of the aromatic spirit of ammonia, the spirit of nitrous ether and the spirit of nitroglycerin—all of which are sufficiently medicated—might be deleted from the pharmacopeia, if formulas were devised for flavoring emulsions to take the place of the flavoring spirits. In point of fact, spirit of peppermint or other volatile oil containing spirits, when employed as carminatives or as flavors, are always used in the form of an emulsion, that is, the spirit added to an aqueous medium. Then why not dispense these oils in the emulsified form, which would detract naught from their medical or flavoring value, and eliminate their spirits from the list of possible intoxicants? Spirit of ether, spirit of chloroform and spirit of camphor, being simple, easily prepared solutions, are as superfluous in the pharmacopeia as would be aqueous solutions of iodid or of bromid.

As aromatic elixir is useful for the administration of alcohol-soluble drugs, it might be retained in the pharmacopeia. Until medicated, it is properly classed as an intoxicating beverage and subject to the regulations governing the sale of these. The elixir of glycyrrhiza, being merely aromatic elixir with the addition of 12.5 per cent. of fluidextract of glycyrrhiza, ought to be deleted. The aqueous elixir of glycyrrhiza of the National Formulary, being a valuable vehicle of very low alcohol percentage (4.5 per cent.), might, with advantage, be introduced into the pharmacopeia in its stead. Many of the feebly medicated elixirs of the National Formulary might well be deleted, especially if an "equalalcoholic vehicle elixir" were introduced, that is, one whose alcohol percentage would be subject to adjustment by the pharmacist so as to make it equal to the strength of the menstruum used in the preparation of the tincture or fluidextract, for which the elixir is employed as a vehicle. The physician cannot possibly be asked to carry in his mind the strength of all the various menstrua; and, if the alcohol percentage is not correct, a turbid liquid is the result liable to dangerous sedimentation. The pharmacist, on the other hand, with the aid of a tabulation, could readily adjust the vehicle to the medicament. This new "equalalcoholic vehicle elixir" might even take the place of the aromatic elixir, now official.

EXTERNAL USES

When alcohol is wanted as a disinfectant, the addition of 1 per cent. or more of iodine, phenol, cresol, or formaldehyd renders it, at one and the same time, more

efficient as a germicide and unfit for use as a beverage. Especially should the addition of iodine to alcohol increase its utility, when it is used for the production of hyperemia as well as for its disinfectant value under an occlusive dressing in the treatment of felons, boils and other subcutaneous inflammations. When, on the other hand, rubefaction is not desired, as in the treatment of infectious dermatoses, then the addition of boric acid to saturation (5 per cent.) cannot but enhance the antiseptic action. The same thing is true of its use in chronic otorrhea. In both conditions, the alcohol is to be used in as great a concentration as can be tolerated—from 25 to 95 per cent. When the astringent action of alcohol is chiefly aimed at, as when it is used for a backrub in a bed patient, a saturated solution of alum in diluted alcohol is preferable to plain alcohol. For antipyretic sponging of the fever patient, the use of alcohol is entirely unnecessary. Cool water will do as well and is much cheaper.

It is only when alcohol is to be used in the mouth as an astringent and possibly as a disinfectant that palatability must not be lost sight of. Even then the lotion may be made much more efficient as well as unsuitable as a tippie by synergistic additions, as for instance in the following prescription, which yields a mouth disinfectant, if such a thing is possible.

	Gm. or C.c.
R Phenyl salicylate	1.0
Menthol	1.0
Methyl salicylate	1.0
Alcohol	75.0
Water	to make 100.0

Mix. Label: Teaspoonful to tablespoonful as mouth wash.

This may be used without dilution or diluted with water, according to the potency of the effect desired.

INTERNAL USES

When pure reflex stimulation of the heart and the blood vessels is aimed at, the aromatic spirit of ammonia is as efficient, though not as pleasant to take, as whisky or brandy. If narcotic effect is required, in addition, as in the treatment of shock, the admixture of ether (up to 30 per cent.) makes alcohol at least as efficient as when it is given in the form of whisky or brandy and probably more efficient. It is, however, chiefly because of its value in gastric and other colics, that such solution has earned the name of "anodyne" ("Hoffman's Anodyne"). The diaphoretic and diuretic value of alcohol is enhanced by the presence of nitrous ether in the spirit of nitrous ether, which therefore ought to be superior to whisky for "breaking up a cold."

When desired for its stomachic action, whisky or brandy might find in an aromatic fluidextract of gentian a less intoxicant succedaneum. When wanted for its food value in a fever patient, alcohol in pure form, properly diluted as in milk punch—a teaspoonful to a tablespoonful per cup of milk—may be prescribed, though, of course, whisky or brandy might be employed here, if desired. Prohibition has done nothing to interfere with the use of these; it has merely surrounded it with certain formalities to safeguard the patient against the danger of becoming an addict.

PHARMACOPEIAL RECOGNITION

An attempt will be made, perhaps without any sinister motive whatever, to restore wine, whisky and brandy to the pharmacopeia. This would be a move in the wrong direction. The most that can be said for those liquors is that they are pleasant administration

forms for alcohol. However, their very pleasantness has endowed them with such seductiveness and destructiveness that they have become outlaws among us. To restore them to the pharmacopeia would be heralded by the liquor interests as an indication that alcoholic beverages are wholesome and important medicaments, indispensable in medical practice and that the medical profession is now acknowledging the mistake it made regarding them. Prohibition, as now constituted, would be distorted into the appearance of a medical monopoly. "Why should the ordinary man," people would be asked, "have to pay for a medical consultation every time he wants a little whisky to cure a common cold?" "If liquor is a good tonic for the sick, why should it not be a good energizer for the well?" Such and other considerations might start a political landslide into the wet abyss.

In point of fact, as has just been shown, whisky and brandy are entirely unnecessary in medical practice. Quite a number of hospitals of Chicago, such as the Presbyterian Hospital and the Cook County Hospital, as well as, of course, the Frances Willard Hospital, do not dispense any of these liquors; and yet their patients, so far as is known, are none the worse for it. As alcohol is the main active principle of the ardent spirits and of practically equivalent therapeutic activity, why burden the pharmacopeia with them? We might as well introduce pyroligneous acid, coal tar and crude petroleum, because it is claimed by some that these native mixtures have a therapeutic value superior to any one of their pure active principles. And, if we were to introduce whisky and brandy, why stop there? Why not also introduce into the pharmacopeia a dry white and red wine, port or sherry, gin and champagne, beer and stout, each of which has, under certain circumstances, special therapeutic virtues perhaps not possessed to the same extent by alcohol. The chief plea that can be made in favor of the reintroduction of liquors into the pharmacopeia is that, now that they are recognized as medicines, a standard for them is required. This standard may, however, just as well and much better be furnished by the authorities entrusted with the enforcement of the prohibition act.

CONCLUSIONS

The medical profession has every reason to welcome the advent of prohibition. It will protect the physician from the danger of causing inebriety in a case in which the patient might be benefited by the medicinal use of alcohol.

For most purposes for which alcohol is required in treatment, it may with advantage be medicated so as to render it unfit for use as a beverage.

The therapeutic employment of liquor, especially in the form of wine, whisky or brandy, ought to be minimized, so as to eliminate the possibility or even the suspicion of abuse. The authorities entrusted with the enforcement of the prohibition law ought, therefore, to have no difficulty in distinguishing between the *bona fide* and the *mala fide* prescriber of alcoholics.

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Good Health and Good Government.—Good health and good government are the two essentials of a great and permanent civilization. These conditions are reciprocal and complementary. Neither can exist without the other.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents*, 1919.

TYPHOID FEVER IN THE AMERICAN EXPEDITIONARY FORCES

A CLINICAL STUDY OF THREE HUNDRED AND
SEVENTY-THREE CASES

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DETROIT

(Concluded from page 1081)

THE PARATYPHOIDS

In the Allied armies the paratyphoid fevers have played the dominant rôle, while the typhoid bacillus itself has caused only a small proportion of cases. In contrast, the American Expeditionary Forces have had a comparatively insignificant number of the former. With our total of 270 cases of straight typhoid we have had reported to us only twenty-three cases of paratyphoid B and nine of paratyphoid A, with an additional twelve classed as paratyphoid fever, indeterminate. Reports of foreign observers are concerned chiefly with studies of paratyphoid infections in the straight typhoid vaccinated, and the consensus is that his type of vaccination exerts no protective influence against the paratyphoid organisms.

TABLE 7.—INCIDENCE AND AVERAGE DAY OF APPEARANCE
OF SYMPTOMS AND FREQUENT COMPLICATIONS IN
TWENTY-THREE CASES OF PROVED
PARATYPHOID B.

Symptom	Cases in Which Symptom Was Present, per Cent.	Average Day of Disease on Which It Appeared
Constipation.....	21.7	1.0
Anorexia.....	73.9	1.7
Malaise.....	65.1	1.7
Headache.....	47.8	1.7
Chill.....	39.1	2.4
Diarrhea.....	65.2	3.0
Vomiting.....	21.7	4.0
Bronchitis.....	52.2	4.1
Average date of admission.....	....	4.5
Hemorrhage.....	4.3	5.0
Bronchopneumonia.....	4.3	5.0
Abdominal pain and tenderness.....	42.4	6.6
Lobar pneumonia.....	4.3	7.0
Meteorism.....	21.7	10.4
Rose spots.....	30.4	12.4
Palpable spleen.....	30.4	13.3
Epistaxis.....	17.4	15.0
Delirium.....	13.0	16.0
Average length of fever.....	....	25.6
Relapse.....	4.3	32.0
Mortality.....	4.3	

Close study of the symptomatology among our cases of paratyphoid (Tables 7 and 8) have led us to these conclusions:

1. On the whole, the disease follows a much milder course than does the eberthian infection. The mortality, as contrasted with 11 per cent. in the latter, is 4.3 per cent. in paratyphoid B and 0 per cent. among our nine cases of paratyphoid A.

2. An individual case cannot be distinguished by its clinical characteristics from straight typhoid. Diarrhea occurred in a slightly larger proportion, but so also did initial constipation. The date of onset of diarrhea was, on the average, a little earlier. Rose spots and palpable spleen were not found as frequently. Relapses did occur, and the fever stopped at about the same day in all three types.

3. The only means of definite differentiation in the individual case is that of bacteriologic identification.

I have not presented the symptomatology in paratyphoid A and B infections graphically as I regard the number of cases too small for reliable statistics.

White blood counts plotted according to the day of disease as for the straight typhoid cases showed in general a higher count, which averaged, for the entire period, 10,000 in the paratyphoid B and 9,000 in the paratyphoid A cases.

TABLE 8.—SYMPTOMATOLOGY IN CASES OF PARATYPHOID A
INFECTION

Symptom	Present, per Cent.	Average Day on Which It Appeared
Anorexia.....	66.6	1.0
Malaise.....	88.8	1.0
Chill.....	11.1	1.0
Delirium.....	11.1	1.0
Headache.....	66.6	1.2
Epistaxis.....	11.1	2.0
Diarrhea.....	33.3	2.3
Meteorism.....	22.2	3.5
Bronchitis.....	44.4	6.2
Constipation.....	44.4	7.7
Palpable spleen.....	44.4	13.3
Abdominal pain and tenderness.....	22.2	15.0
Rose spots.....	55.5	19.5
Hemorrhage.....	11.1	22.0
Duration of fever.....	....	22.5
Relapse.....	33.3	35.0
Mortality.....	0.0	

CLINICAL TYPHOID FEVER

In addition to those classified as infected with one of the organisms of the typhoid-paratyphoid group, we have had fifty-nine cases presenting strong clinical evidence of typhoid fever, but in which the organism was not demonstrated either in the blood or in the stools. This number does not include all cases reported to the chief surgeon as clinical typhoid, as many did not show conclusive enough findings to warrant the diagnosis. The criteria for acceptance into this group were: (1) presence of rose spots and palpable spleen; (2) presence of either one together with a definite leukopenia and a clear history of a continued fever for two or more weeks, or (3) as in one instance, a continued fever of four weeks without rose spots or palpable spleen and without leukocytosis, but with intestinal hemorrhage occurring in the second week.

Tabulation of the symptomatology among these cases gives results quite similar to those of straight typhoid. The incidence of rose spots and palpable spleen is higher; but this is due to the fact that these signs were usually required for acceptance into the group. The logical explanation for the occurrence of these cases would be that bacteriologic examinations were not made often enough, and that had enough been made, the organisms would have been found. This probably is true, but it is also true that examinations were made no less frequently than in the cases of proved typhoid.

TABLE 9.—NUMBER OF BACTERIOLOGIC EXAMINATIONS PER
CASE IN PROVED TYPHOID AND IN CLINICAL TYPHOID

Source	Proved Typhoid	Clinical Typhoid
Blood.....	1.33	1.40
Urine.....	0.87	1.08
Feces.....	2.08	3.20
Total.....	4.28	5.68

We have been unable to find convincing evidence that vaccination lessens the probability of finding the infecting organism, and submit this series merely as cases in which the invading organism is unusually hard to demonstrate. The figures given are, moreover, somewhat misleading, because not in every case were five examinations made. In some there were only one or two, while in others there were many more.

The average white counts for all days combined were 6,700 in clinical typhoid.

TYPHOID CARRIERS

In all, thirty-two carriers were reported, of which fifteen were of straight typhoid, five of paratyphoid B and six of paratyphoid A, while six more were indeterminate paratyphoid infections. Of these thirty-two patients, eighteen denied any previous history of typhoid and three admitted the disease, four years, thirteen years and fourteen years, respectively, before. The individual with a history of typhoid infection four years before also had had a typical paratyphoid B infection in November, 1916. He was found to be a carrier of the paratyphoid B organism. In the remaining eleven cases there was no note as to previous history of typhoid.

Ten of the thirty-two gave a definite history of diarrhea, either occasional or chronic, while seven gave a negative history for this condition. In the remainder it was not discussed.

In the group, twenty-eight had received saline triple vaccine and seven the lipovaccine. Four of these patients had received both. One case was not recorded as to vaccine. All seven patients vaccinated within one month before admission to the hospital had received the lipovaccine, and of these, four had been vaccinated several months previously with the saline preparation. Those thus vaccinated had been so inoculated from one to twenty months previously.

All but one of the thirty-two were of the intestinal type of carriers, while the last had a positive urine culture.

CAUSES OF TYPHOID FEVER IN THE VACCINATED

As was stated at the beginning, this study becomes a study of typhoid fever in the inoculated individual. The records of the 270 cases of straight typhoid studied showed that all had received prophylactic inoculations, and in 207 of them the dates and type of vaccine were recorded. The possible causes of failure of so-called vaccination to protect against typhoid may be thus enumerated:

1. *Absence of Vaccination, Either Total or Partial.*—By this I refer to failure not because of impotent vaccine but because of failure to react in certain individuals. It is well known that after the same doses of vaccine, different persons form differing amounts of agglutinins. But agglutinin titer is not a measure of immunity. We have no criterion that will tell us when an individual is actually immunized, nor have we any means of determining the degree of immunity present.

2. *New Strains of the Organisms Against Which the Vaccine Does Not Immunize.*—Serologic and cultural determinations made in the various laboratories have not consistently produced anything to suggest such a condition.

3. *Failure of Proper Inoculation.*—Among the cases of true typhoid studied, vaccination had been performed in fifty different camps and posts in the United States. This fact, combined with the really excellent results in most individuals vaccinated, renders such a possibility rather remote.

4. *An Overwhelming Dose of the Infecting Organism.*—Absolute immunity to human disease does not exist in man. The highest immunity that can be produced by artificial methods will protect against the antigenic virus only up to a certain limit. I am of the opinion that the greater number of cases of typhoid and

paratyphoid in France occurred as a result of massive infection with a dose great enough to overwhelm the forces of immunity. This, I presume, was most frequently associated also with the first cause enumerated, "absence of vaccination, either total or partial," in that it occurred in those possessing a lower degree of immunity than their more fortunate comrades. As Bernard has so succinctly expressed it, vaccination raises against the typhoid bacillus a great barrier—high, but not insurmountable.

5. *"Back-Handed Typhoid," "Antibody Exhaustion" or "Immunity Exhaustion."*—I include the second designation of this condition as being the most readily comprehensible in view of the existing nomenclature and conceptions of immunity, while I prefer the third as being more scientifically correct. I developed the first term as I recognized more and more of this type in the field, and it has the particular advantage that it emphasizes the assumption that the successive stages of typhoid infection are therein, in a manner, reversed.

The present day conception of typhoid is that of a primary systemic infection. The organisms entering by way of the gastro-intestinal tract are absorbed into the circulation and do not primarily grow as saprophytes in the alimentary canal. After passing through the gastro-intestinal mucosa, the organisms reach the liver through the portal circulation, where they may be excreted through the bile; or some may pass into the general circulation, where they multiply and, after the usual period of incubation, cause typhoid fever. The organisms excreted in the bile may lodge in the gallbladder and there, growing, produce the carrier condition, even though the host has not had typhoid fever.

In a vaccinated person, the organisms entering the portal circulation are either broken up and destroyed by the body ferments or excreted into the bile, or both. In the gallbladder they may find lodgment and continue to grow, in reality outside the body organism, multiplying profusely even though the host be highly immune. The numbers of organisms that are continually discharged in the bile and resorbed through the intestinal mucosa call on the immunity mechanism for constant and exhausting action. There may be superimposed on this a local enteritis caused by one of the typhoid-colon group or any other organism, or even by the typhoid member of the group itself. This subacute or chronic condition, rendering toxic absorption more facile, serves gradually to undermine the constitution. Finally, added to all this, are the hardships of war and army life—exposure, food not always well balanced, fatigue, and perhaps at last some intercurrent infection—and all the conditions required to wear out a body immunity are then present.

It is this reversed process—a local infection or carrier state followed by systemic disease instead of the usual typhoid followed by a carrier condition—that I have chosen to call "back-handed typhoid." Overwhelming doses of the infecting organism and this exhaustion reaction were in my opinion two of the chief causes of typhoid among our troops.

From the nature of the condition it has been impossible to obtain convincing experimental evidence of its presence in France; but a certain amount of indirect evidence appears to warrant our assuming its presence. Our first case occurred in a colleague who, preceding his illness, had been billeted with a French family and who had been drinking unchlorinated water while at his billet. For two weeks or more he had been complaining

of general malaise and a moderate diarrhea, but not sufficient to keep him from his work. At the end of two or three weeks the illness became acute, the usual symptoms of typhoid developed, he became progressively worse, and he died within one week from the onset of the exacerbation.

These cases present the usual clinical histories of ambulatory typhoid, with the definite addition of a local gastro-intestinal pathologic condition and symptoms preceding the disease proper. Otherwise there is nothing unusual about the symptomatology. Especially frequent was this syndrome among the men who had seen active service at the front. From nearly all, a history was obtained of having drunk whatever water they could get, even from the stagnant mud of the shell holes.

To check up on the impression I had gained, I questioned 104 patients as to previous history of chronic local gastro-intestinal disturbance. All were straight typhoid cases. Forty-four denied attacks of diarrhea antedating the diarrhea of the disease itself. Thirty-nine admitted a continuous preceding enteritis varying from one week to three months in duration, and of these, twenty-three had had it for over one month. Fifteen had had diarrhea for from one week to three months while at the front, which had subsided and from which they had been free for from two to three months. Seven additional patients admitted having had a transient diarrhea of from one to five weeks' duration in the two months preceding their disease.

Subacute diarrhea is not a necessary nor the usual antecedent of typhoid fever. The disease begins frequently even with constipation. I would compare the foregoing figures, in which more than 60 per cent. had been afflicted with enteritis, with the statements of the Typhoid Commission in the Spanish American War, that in that epidemic "more than 90 per cent. of the men who developed typhoid fever had no preceding intestinal disorder." I do not believe that the figure of 60 per cent. would hold for all men attacked by this malady in the American Expeditionary Forces, but do assert that it was the case in a representative number of those who had been at the front.

There is no proof that these men were harboring the typhoid bacillus in their intestinal tract previous to coming down with the disease. It is here that my hypothesis fails of absolute proof. Such proof would have necessitated a survey of the stools of all the members of a division, to be followed by weeks or months of watching to see whether the carriers discovered would develop the disease. Moreover, had this been done, the carriers would have been hospitalized and treated, thus defeating the object of the experiment. But corroborative evidence is not lacking. Several observers have reported the finding of typhoid bacilli in the stools of patients a few days or more previous to the onset of the disease, while Battlehner¹² has reported four cases in whose excreta the bacilli were discovered from twenty-one to 117 days before the onset of the disease. These had been considered as healthy carriers. I have a record of one patient who one and a half months previous to admission cared for a typhoid patient and shortly thereafter developed diarrhea, which persisted for six weeks until the typical acute onset of typhoid. In the discussion of typhoid carriers I have called attention to ten out of the thirty-two carriers, with history of diarrhea, none of

whom had had preceding typhoid, and one carrier with no history of typhoid and no diarrhea, who, nine months previously at Camp Dodge, had had negative stools for the typhoid group.

I have shown, then, that carriers have been produced in France; that diarrhea is often associated with the carrier condition; that among 104 men, diarrhea preceded the disease in 60 per cent.; that in one instance exposure to the disease was followed by enteritis which persisted for six weeks, until the onset of typhoid. Before absolute proof of back-handed typhoid is produced, I must show that all these facts find sequence in individual cases.

6. *Unsatisfactory Vaccine, Either as Regards Antigenic Properties or Number of Doses Administered.*—Considerable experimental evidence has accumulated to show that with increasing numbers of inoculations the immunity increases. Four inoculations confer a greater degree of immunity than do three. One of the advantages of the method in use in the United States Army is that the men nearly all received the same vaccine in the same dosage and with the same number of inoculations. Observers in other armies were sometimes forced to draw their conclusions from patients who had received different kinds of vaccine and all numbers of injections, from one to four or more. The fact that our vaccine did protect in the great majority of the cases demonstrates the efficiency of our preparation and of the dosage. It may not be ideal, but it is thoroughly practical.

Reed, Vaughan and Shakespeare, in their report on typhoid in the war with Spain, draw these conclusions:

Typhoid fever is so widely distributed in this country that one or more cases are likely to appear in any regiment within eight weeks after assembly. With typhoid fever as widely disseminated as it is in this country, the chances are that if a regiment of 1,300 men should be assembled in any section and kept in a camp *the sanitary conditions of which were perfect*, one or more cases of typhoid fever would develop.

More than 90 per cent. of the volunteer regiments developed typhoid fever within eight weeks after going into camp.

Even an ocean voyage does not relieve an infected command from its infection.

About *one fifth* of the soldiers in the national encampments in the United States in 1898 developed typhoid fever.

We are prone to think of typhoid fever as being no longer prevalent in the United States. We must remember that more than 150,000 typhoid cases still occur each year, and that, according to Gay, these cause an annual production of 7,500 carriers. We may assume that the statements made in 1898 are equally true in 1919.

Official reports with the accurate numbers of cases of typhoidal infection in the American Expeditionary Forces will not be available for several months; but this total will be below 2,000 cases. This, with a total of more than 2,000,000 men transported overseas, represents a typhoid incidence of less than 0.1 per cent. Although antityphoid vaccination is partly responsible for this diminution in typhoid incidence compared with Spanish-American War figures, a place of great importance must be given to improved sanitary procedures.

SUMMARY

An attempt has been made in this report to study from the point of view of the clinician the disease produced by *Bacillus typhosus* when it invades the body of a person previously vaccinated against that organ-

12. Battlehner, R.: Dissertation, Strasbourg, 1910.

ism. There has heretofore been some difference of opinion as to how much antecedent vaccination will change the clinical picture of the disease. Recent work by several observers tends to corroborate the conclusions reached in this study.

A series of 270 cases in which it was proved by successful cultivation experiments that the patients were infected with *B. typhosus* forms the basis of the work. Although I have accepted in my report all cases reported since January, 1919, it must be borne in mind that in a sense we are dealing with a selected series of cases. That is, I have accepted only those in which we succeeded in isolating the organism. It is possible that many more cases of disease caused by the same germ occurred, but from which the organism could not be isolated. In this connection I have discussed the condition known as clinical typhoid fever in which the symptomatology was characteristic, but in which bacteriologic studies were without result. In the latter type I concluded that the typhoid bacillus or one of the typhoid group of organisms was the etiologic factor, but that its presence was demonstrated with much greater difficulty. On the other hand, I would call attention to the fact that in the 270 cases there was no difficulty in obtaining the germ, its presence in blood, urine and feces being noted in about the percentage usually described for typhoid in non-vaccinated persons.

Throughout the discussion we must bear in mind that a great number of mild and abortive cases of true typhoid may have occurred—cases in which the patients were never sick enough to be sent to the hospital, but which would have been typical typhoid had the patients not been vaccinated against the disease. I agree that there may have been hundreds or even thousands of such cases, how many we shall never know. Surely, many vaccinated persons drank typhoid bacilli and destroyed or excreted them, remaining totally unaffected by the exposure. Surely, also, many did react slightly to the exposure, perhaps with no further symptoms than a rise of temperature of a degree or more during a few hours or a day. It is this reaction which proves that they are immune and are destroying the organism almost as soon as it invades the body—in fact, that they are *not* going to develop typhoid fever. Such a person, though temporarily infected with *B. typhosus*, certainly cannot be said to be suffering from typhoid fever. If the clinical conception of the disease were so amplified as to include all these cases, we should have to admit that practically every vaccinated person when he ingests the germ develops typhoid fever: a *reductio ad absurdum*. There are probably all gradations from these simplest febrile reactions up to the typical typhoid fever as described. It becomes, then, a question at what stage the manifestation is to be given the name typhoid fever.

When the average man in the army really feels ill, he goes to the hospital. Particularly was this true during the period of this report, when there were no activities at the front—nothing more entertaining than “daily fatigue.” So, using the point of view of the clinician, I will arbitrarily say that when a man is admitted to the hospital as a result of typhoid infection he has typhoid fever, and that the others are successfully combating the disease with their immunity mechanism. This is purely arbitrary, and I would emphasize the point that the division is placed here so that we may have a basis for clinical comparison of the disease with

the typhoid of the nonvaccinated as they have been studied in hospital. I do not lose sight of the fact that the epidemiologic phase of the situation is far different—that every one of the mildly infected must be considered as typhoid individuals capable of spreading the organism broadcast.

There is no way of telling how many patients with typhoid infection were admitted to the hospital and never recognized as such. The number may have been great or small. A direct attempt to reduce it to a minimum was made at the inception of our work by the issuance from the chief surgeon's office of a rather lengthy circular letter which was sent to all hospitals and medical organizations, directing attention to the disease, describing both the typical symptomatology and that supposed to be found in the vaccinated, and dwelling in particular on the necessary care in differentiating the disease from influenza. All medical officers were requested to watch particularly for the disease in its atypical forms, and to request a laboratory confirmation in any case of doubt. The success of this attempt was indicated by the large number of clinical typhoids and typhoid suspects reported to the division of laboratories and infectious diseases.

In the study of our 270 cases of proved typhoid I have dwelt at some length on the routine laboratory examinations because I consider it desirable to show that in this field as well as in the syndrome of typhoid in the vaccinated, there is no essential difference from the findings in the nonvaccinated. Ten per cent. of relapses might appear a trifle high, but series in the nonvaccinated are reported with this figure. The delay in noting the appearance of rose spots and palpable spleen until the twelfth day, on an average, was probably due to the fact that these signs were not recognized on the first day of their appearance. Those cases studied personally by myself and certain co-workers showed these important signs, as a rule, earlier.

The total mortality in those who did contract the disease has not been shown to be lessened. Ten or 11 per cent. has been the generally accepted mortality for typhoid, but most of these figures have not differentiated between typhoid fever and the paratyphoids. Such, for example, is true of the figures of Osler and of Reed, Vaughan and Shakespeare cited above. It is possible that the mortality for typhoid fever among the nonvaccinated, considered apart from the paratyphoid infections, is higher than 10 per cent. Under any circumstances our figure is more likely to be too high than too low. Severe cases were not in such danger of misdiagnosis as were the mild ones.

Our records do not give us conclusive information on one point that would be of considerable interest to the epidemiologist, that is, the relative efficacy of saline vaccine and lipovaccine. By far the greater number of patients had received the saline vaccine; but those receiving the lipovaccine had the higher mortality. Furthermore, the time interval since inoculation was as a rule much shorter in the case of the lipovaccine. No just comparison can therefore be made.

CONCLUSIONS

1. A study of 270 cases in which the patients, all of whom had received triple typhoid vaccine, were infected with *B. typhosus*, leads to the conclusion that in these hospital cases the clinical picture of typhoid in the vaccinated was similar to that of the unvaccinated. Absence of leukocytosis, continued fever of the usual course and duration, rose spots, palpable spleen,

relapses and complications all remained characteristic of the disease.

2. In our series the mortality was 11 per cent.

3. Positive cultural results from blood, urine and feces were of about the same percentage as with non-vaccinated patients, and the duration of the bacteremia appeared to be the same.

4. Patients infected within eight months after vaccination had an average severity (fatal percentage combined with "severe" percentage) of less than 10 per cent. After eight months, the severity percentage gradually increased. Our figures for later months are not complete enough to allow us to draw conclusions as to the period of maximum immunity.

5. The onset of the disease was more frequently acute when occurring within the first month after inoculation.

6. In sixteen cases with onset from seven to twelve days after inoculation (the usual incubation period), the infection probably occurred during the interval after inoculation.

7. The paratyphoid infections, although much milder as a group, could not be clinically distinguished in individual cases from straight typhoid. They were of much less frequent occurrence than was the latter.

8. It is probable that a large number of vaccinated persons were infected with *B. typhosus* and allied organisms who never became sick enough to require admission to the hospital. In these the immunity mechanism was eventually successful in combating the infection, so that they did not develop clinical typhoid fever. Their epidemiologic importance is recognized. This report deals with the remaining persons—those who in spite of vaccination developed the disease.

9. There are six possible causes of failure of vaccination to protect against typhoid; a new clinical variety is for convenience called "back-handed" typhoid.

10. The incidence of the typhoid group of diseases in the American Expeditionary Forces was less than 0.1 per cent., as compared with 20 per cent. for the Spanish-American War.¹³

INDUSTRIAL BLOOD POISONS

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Some months after the outbreak of the war, large users of anilin, finding themselves deprived of their usual source of supply, were compelled to engage in the manufacturing business for themselves. Before manufacturing methods were improved, and the process finally discontinued, a number of benzene (benzol, C_6H_6) and anilin intoxications occurred which I had the opportunity to study first hand, and the most important of which are herewith reported.

REPORT OF CASES

CASE 1.—*Benzene intoxication*.—Mr. A., chemist, aged 30, in charge of operations, who had been working intensively in benzene for about two weeks, complained, June 12, 1916, of headache, anorexia, lassitude and loss of weight. Suddenly pain in the abdomen developed, accompanied by

nausea and vomiting. Physical examination detected nothing abnormal. Temperature and pulse were normal. An examination of the blood, however, revealed a marked leukopenia. The blood was normal in color, but seemed to be lacking in viscosity. There were 5,760,000 red blood cells per cubic millimeter; 1,200 white blood cells; hemoglobin, 85 per cent. (Sahli). The differential count revealed: large mononuclears, 39 per cent.; small mononuclears, 0; polymorphonuclears, 54 per cent.; eosinophils, 0; transitionals, 0.6; other cells, 0; total, 93.6 per cent.

The intoxication in this case was largely from inhalation. Aside from the blood findings, the physical picture is that of a nervous dyspepsia, which was probably true in this case, as the man was of a nervous temperament and anxious over the responsibility of his position.

After a month's leave of absence with complete rest, the leukocyte count became normal and the patient made a complete recovery. It was not our observation that a leukopenia alone, of the severity herein described, would cause symptoms. This view is supported by observation of the following cases:

CASE 2.—*Benzene intoxication*.—Mr. B., chemist, aged 26, exposed about two weeks, with no symptoms, when examined, June 15, 1916, gave a red blood cell count of 4,000,000; white blood cells, 1,250; hemoglobin, 95 per cent.

July 12, after the man had been instructed, but allowed to continue work, the red blood cell count was 4,352,000; white blood cells, 3,200; hemoglobin, 95 per cent.

CASE 3.—*Benzene intoxication*.—Mr. C., chemist, aged 35, exposed about two weeks, with no symptoms, when examined, June 15, 1916, gave a red blood cell count of 3,680,000; white blood cells, 1,700; hemoglobin, 90 per cent. The differential count was: large mononuclears, 9.6 per cent.; small mononuclears, 17.6; polymorphonuclears, 69.6 per cent.; eosinophils, 0; transitionals, 0.32; total, 97.12 per cent.

July 12, after being advised, but allowed to continue work, the patient's red blood cell count was 4,032,000; white blood cells, 3,800; hemoglobin, 90 per cent.

Both of these men completely recovered.

CASE 4.—*Benzene-anilin, mixed intoxication*.—M. S., aged 45, laboratory helper, inhaled vapors from an anilin reducer and received a mixture of anilin and free or unreduced benzene, which is occasionally present in an anilin reducer. The patient was seized with headache, chills, nausea and vomiting. I saw him, Oct. 20, 1916, within a few minutes after the onset of the symptoms. He was very cyanotic. The pulse was dicrotic, rate 110. The systolic blood pressure was 119; diastolic, 73. The blood was dark brown. The red blood cell count was 5,200,000; white blood cells, 10,200; hemoglobin, 90 per cent. (Sahli).

October 21, sixteen hours later, the cyanosis was gone, the pulse was of good quality, the systolic blood pressure, 137; diastolic, 92, and the blood normal in color. The red blood cell count was 5,600,000; white blood cells, 1,440 (check by another, 1,200); hemoglobin, 90 per cent.

October 24, seventy-two hours later, the patient felt well and was anxious to return to work. The red blood cell count was 5,491,000; white blood cells, 6,640; hemoglobin, 92 per cent.

The interesting observations in this case were the selective action of benzene on the white blood corpuscles, the depression of blood pressure, and the rapid recovery.

CASE 5.—*Anilin intoxication*.—R., aged 49, employed twelve years, climbed inside an anilin reducer, June 26, 1916, to clean out sludge with hose. He had worked only a short time when he began to feel dizzy and nauseated, and to experience a "warm sweet taste" in his mouth. With presence of mind he quickly climbed out of the reducer and was assisted to the hospital. According to his account, he did not entirely lose consciousness, but seemed to be overcome by mental confusion and great bodily weakness. I saw him within an hour after the onset of the symptoms. The picture was that of collapse. The complaint was headache and chilliness, although the man was perspiring freely. The skin and mucous membranes were intensely cyanotic; the temperature was 101 F.; the pulse was weak and dicrotic, rate 110. The

13. In addition to the references already given, the following will be found of interest:

Vaughan, V. C., Jr.: Report on Typhoid Fever in Troops Stationed in the Vicinity of Marseilles.
Freeman, A. W.: Med. Officer, London, 17: 71, 1917.
Vaughan, V. C., and Palmer, G. T.: J. Lab. & Clin. Med. 3: 635 (Aug.) 1918; ibid. 4: 587 (July) 1919.

systolic blood pressure was 110; diastolic, 60. Six hours after the administration of 3 grains of camphor hypodermically, the blood pressure rose to 130 systolic and 85 diastolic. The blood was chocolate brown, flowing very freely. The red blood cell count was 3,520,000; white blood cells, 10,600; hemoglobin, 95 per cent. The differential count revealed nothing important. Owing to a peculiar strangury, the patient was unable to void for several hours. The urine, when obtained, was dark, and contained no sediment. Its specific gravity was 1.020; it was acid in reaction and negative for albumin, sugar and bile. There was a trace of anilin. Methemoglobin could not be demonstrated in the urine.

June 30, the man still had headache and complained of soreness in his chest. He was still cyanotic, though improved. The pulse was very soft, the systolic blood pressure, 115; diastolic, 60. The red blood cell count was 2,944,000; white blood cells, 4,400; hemoglobin, 95 per cent. The urine was normal in color with negative findings.

July 7, he was still slightly cyanotic, but headache had disappeared. The pulse was 88, and of much better quality. The red blood cell count was 3,112,000; white blood cells, 4,140; hemoglobin, 90 per cent.

July 13, he was no longer cyanotic. He felt well except for slight nervousness and insomnia. The red blood cell count was 4,208,000; white blood cells, 4,300; hemoglobin, 91 per cent.

CASE 6.—*Anilin intoxication*.—S. B., aged 41, washed some clothing in anilin, Oct. 30, 1916, and immediately became ill, complaining of weakness and headache. Cyanosis was pronounced. His temperature was 99.5 F. The pulse rate was 88, the systolic blood pressure was 130, and diastolic, 98. The blood was chocolate brown. The red blood cell count was 3,420,000; white blood cells, 8,040; hemoglobin, 88 per cent. The urine was dark colored, with negative findings.

November 6, he was much improved. The blood cell count was 5,024,000; white blood cells, 8,800; hemoglobin, 90 per cent. The temperature and pulse were normal.

CASE 7.—*Anilin intoxication*.—J. K., aged 40, poured iron into an anilin reducer and inhaled the fumes, July 12, 1916. He became ill with headache, dizziness, cyanosis and perspiration. The temperature was 99 F., pulse 96, water hammer type. The systolic blood pressure was 112, diastolic 60. The red blood cell count was 2,262,000; white blood cells, 4,800; hemoglobin, 92 per cent. The differential count was not important. The urine was dark colored with negative findings. The patient made a complete recovery.

CASE 8.—*Anilin intoxication*.—N. M., aged 28, poured iron into an anilin reducer and inhaled the fumes, Aug. 9, 1916. He became cyanotic and complained of headache. The temperature was 98 F. The pulse was 92 and of good quality. The systolic blood pressure was 118 and diastolic 75. The blood was chocolate brown. The red blood cell count was 4,160,000; white blood cells, 4,400; hemoglobin, 95 per cent. The patient was unable to void for several hours.

August 10 he was much improved, but was still cyanotic. The red blood cell count was 3,800,000; white blood cells, 6,200; hemoglobin, 95 per cent. The urine was dark amber with negative findings.

August 16 the red blood cell count was 4,000,000; white blood cells, 6,000; hemoglobin, 95 per cent.

In this case, although the cyanosis was pronounced, and the blood very dark, the cell destruction was slight. The poison apparently overwhelms the oxygen carrying capacity of the blood by the formation of methemoglobin, which may be more important in producing cyanosis than either disintegration of the red cells or formation of anilin black, as described by Engelhardt.¹

CUMULATIVE ACTION

In December, 1916, I began the study of ten cases subject to more or less exposure, to determine if possible the cumulative properties of benzene. The service of these men ranged from one week to five years and

seven months. Monthly blood counts were made, and all were found to be practically normal.

It is my opinion, not that benzene and its amino-derivatives possess any very definite cumulative action, but that the anemias of which they are the cause follow a definite intoxication or a series of definite intoxications. It remains to be determined, however, whether or not the constant inhalation of even minute quantities of benzene vapor from spreading machines, cement cans and other sources would tend to interfere with proper oxygenation of the blood and tissues, even when there is no cell destruction, and thus undermine the worker's resistance to disease.

CONCLUSIONS

1. Workers chronically exposed to benzene may show leukopenia without any other symptoms, and make complete recovery.

2. Acute exposure to anilin and nitrobenzene vapors produced cyanosis with destruction of the red blood corpuscles, but with little change in the white corpuscles, with recovery. In one case in which free benzene was presumably present, there was destruction of white cells without appreciable destruction of red cells, and a more rapid recovery, that is, in three days.

3. The maximum white cell destruction by benzene, and the maximum red cell destruction by anilin-nitrobenzene, may not be reached for several hours after the onset of the symptoms.

4. Workers exposed for long periods to benzene may not have a leukopenia; apparently, therefore, the action is not cumulative.

PARAPLEGIA AFTER ARSPHENAMIN IN A CASE OF RETROBULBAR OPTIC NEURITIS *

T. J. DIMITRY, M.D.

NEW ORLEANS

This case is presented not solely for its extremely interesting features, but to some extent because of the arbitrary attitude of some of my confrères in attributing a sequence of the usual syndrome to be expected in an acute optic neuromyelitis of syphilitic causation to the administration of arsphenamin. Furthermore, the number of cases of the incongruous syndrome of retrobulbar optic neuritis with myelitis reported in the literature is limited, and the beneficial effects of arsphenamin on the retrobulbar neuritis, while the same remedy seemed to be the exciting agent in the development of the paraplegia, add increased interest.

History.—A man, aged about 34, unmarried, complained that his sight was failing him, one eye being, in fact, practically blind. This eye condition started, May 1, 1918, with a constant pain in the eyes, and a deeper pain both on movement of the eyeballs, and when the eyes were pressed back into the socket. He had always considered himself healthy, though he was of delicate structure. The family history was negative and did not show anything of interest, neurologically or otherwise. The patient had had the usual diseases of childhood, which apparently had no bad effect on him. He emphatically denied any venereal disease. He consulted his first oculist, May 3, when the vision of the right eye was 20/50 and of the left eye 20/15. Ophthalmoscopically, the fundus was reported negative. The vision in the right eye was not improved by lenses. Dark glasses and zinc drops

1. Engelhardt, cited by Blyth, A. W.: *Poisons: Their Effects and Detection*, New York, the D. Van Nostrand Company, 1902.

* Owing to lack of space, this article is abbreviated by the omission of a bibliography. The complete article appears in the author's reprints.

were prescribed. Pain continued in the eyes, and, May 7, vision had fallen to 20/200 in the right eye and 20/20 in the left. His refraction, on being determined again, showed no improvement, and the fundus was reported normal. A solution of atropin was instilled, and this greatly lessened the pain in the eyes.

May 8 he consulted a second oculist, who also found the fundus normal and could not account for the loss of vision.

Examination.—May 10, the patient consulted me. The vision was 15/200 in the right eye and 20/40 in the left. Ophthalmoscopically, the fundus details were negative. There was no diplopia, though there was a slight nystagmus in the right eye. The sinuses, as a possible cause of the blindness and the pain in the eyes, were ruled out. The field of vision showed the colors reversed, the spiral fatigue field of neurasthenia, and a central color scotoma present. The neurologist reported the patellar reflex exaggerated in one leg and sluggish in the other. This neurologic examination was so void of any aid in the diagnosis that a buried complex was thought of, and a tentative diagnosis of hysteria was made. The patient was advised to continue going to his office and to consult me the next day. He followed these instructions, and while on his way to the office he fell into a street excavation, slightly injuring his knee. It is questionable to what extent his impaired vision was a factor in this fall, for it was learned that for some time indefinite pains had caused him to use a pillow behind his back while driving his car, that he had been suffering from paresthesias in his legs, which had been quite annoying, and that some slight urinary disturbance had been present.

Despite the fact that the patient had recently gone blind in one eye, and the other was rapidly failing, he seemed unconcerned. This mental state changed in a few days, and he became so irritable that he was taken to an institution, May 13.

The neurologist who accompanied him remarked for the first time that he did not walk well, and that he appeared weak in the legs. His mental state was now such that it became necessary to resort to sedatives and hypnotics.

The Wassermann reaction by the original method and that of Tschernogowbou was negative. The total leukocytic count was 5,500. The differential count was: neutrophils, 66 per cent.; lymphocytes, 28 per cent.; large mononuclears, 6 per cent.

The specific gravity of the urine was 1.021. Its reaction was acid.

Tests for albumin, sugar, acetone and diacetic acid were negative; for indican, positive. Microscopic examination revealed an excess of leukocytes, much mucus, and hyaline and granular casts.

The patient suffered a complete loss of sight before any other symptoms developed to make possible a diagnosis, though some precursory symptoms obtained in his history were not recognized at the time as being important. A conspicuously healthy eye interior, ophthalmoscopically, in a blind patient offered no explanation, and it seemed that the nearly scientific branch of medicine, ophthalmology, must resort to that meaningless term "amaurosis."

Daily fundus examination elicited no information until the morning of May 13, when there was discovered a distinct elevation of the optic nerve of both eyes. This elevation was greater in the right eye. The pupils were widely dilated and did not respond to light. The patient's mental irritability and the choked disk made me suspicious of a brain tumor; hence, no spinal puncture was made at this time. Tuberculosis was ruled out by physical examination and roentgen-ray studies. A roentgenogram of the cranium was negative.

Treatment and Result.—On the afternoon of May 14, 0.06 gm. of arsphenamin was administered intravenously. On the following morning, the patient complained of stiffness in the legs, and pain in the back, and he asked that a hot water bag be placed over the region of the kidneys, for he had not voided his urine. It was then found that he could not move his right leg, and during the afternoon this paralysis extended to the other leg. It was necessary to catheterize the bladder and later to contend with an overflow of the urine. He suffered an inability to evacuate the bowels, and subsequently an incontinence of feces. He developed decubitus and a very

painful hyperesthetic area of the left arm. The paralysis of the legs was absolute, and all voluntary motion, and sensation in all its qualities, including temperature and touch, was destroyed. Different degrees of deep and superficial anesthesia and hyperesthesia extended to within an inch of the nipple anteriorly, and not quite so high posteriorly. The reflexes were abolished in the legs with a flaccid paralysis, and the appearance of a rapid wasting. The whole presented a picture very alarming.

Two days after the injection of arsphenamin, the elevation in the optic nerve had improved and within the next day had disappeared entirely, leaving a normal appearing optic nerve, though the patient was blind.

As there was no longer fear of intracranial growth, a spinal puncture was made. It must be remembered that this puncture was made after the paraplegia developed; needle traumatism or introduced infection could not have been the cause for the paraplegia. When the definite paraplegia did develop, the diagnosis "retrobulbar optic neuritis with myelitis," both of syphilitic causation, won my acceptance only after a careful study of the literature of these associated conditions; and this diagnosis is confirmed by the laboratory tests and the therapeutic results obtained.

Spinal puncture was made, and during the operation the back was found rigid and offered some difficulty to the introduction of the needle. The fluid was clear and was not under pressure but, to the contrary, was obtained drop by drop. The pathologist who examined the fluid reported that with 0.75 c.c. of fluid, the Wassermann test was negative; the cell count was 173; the globulin test was ++++; smears for tubercle bacilli were negative; the colloidal gold test yielded a clear-cut zone reaction, indicative of, or in accord with, that found in tuberculosis; cell differentiation revealed: polymorphous neutrophils, 1 per cent; lymphocytes, 95 per cent.; endothelial leukocytes, 3 per cent.

A provocative blood test was found negative.

In spite of the apparently harmful effect of the arsphenamin, a second dose of 0.06 gm. of arsphenamin was given, May 21, and a dose of 0.09 gm. of neo-arsphenamin was given a few days afterward. Mercury was used by inunctions and the iodids were used in increasing doses, and for weeks the patient was taking 75 drops of saturated solution of potassium iodid three times a day.

I relinquished the case, June 19, and from that time on the only other medication was strychnin and electrical stimulation. Jan. 14, 1919, the patient informed me by mail that he could then walk and had a vision practically perfect. Jan. 24, 1920, he was on the streets getting about without any assistance, but there remained some bladder disturbance.

COMMENT

Did the arsphenamin produce the acute transverse myelitis? We know that the retrobulbar optic neuritis existed before the drug was administered, and its use produced an improvement in the optic nerve elevation. I did not think that the drug produced the myelitis, and I emphasized this belief by repeating the drug and a third injection to the benefit of the patient. There was no increased harm produced by the repeated injections; to the contrary, the patient improved. He again saw and walked. Apropos of the foregoing is a case report by Elschnig¹ on "a case of retrobulbar optic neuritis with myelitis," in which he says: "The eyes were affected first, and during the treatment paralysis developed and the patient refused further treatment." Ullrich von Hutten² thought, as did others, that "paralysis in syphilis was to be attributed to the use of mercury." In the same book³ in which he makes this observation there is a report of a case of "acute myelitis with decubitus developing during the use of mercury inunctions." Will history

1. Elschnig: *Klin. u. anat. Beitrag zur Kenntnis der acuten retrobulbar Neuritis*, *Arch. f. Augenh.* 5: xxvi.

2. Von Hutten, in *Nonne's Textbook, Cerebrospinal Syphilis*, p. 4.

3. *Nonne's Textbook*, p. 263.

repeat itself and arsphenamin run the same gamut? I fear it will.

McCaskey⁴ reports four cases from the literature and one that he observed in which paralysis developed after the use of arsphenamin. All of these patients were syphilitic. All received more than one injection. One received a Swift-Ellis treatment and another a subdural injection. It is extremely doubtful in my mind that these cases are to be explained on purely toxicological grounds, though the bad effect was produced by more than one injection. Other drugs have been thought to produce paralysis. Webber⁵ states that "the use of strychnin given before a relapse in myelitis is a circumstance demanding special notice," for he has seen bad effects following the use of strychnin in disease of the spinal cord, and he does not feel justified in using it.

Collins⁶ reports a case of sudden paraplegia occurring after the injection of "autolysin" in a syphilitic subject. He says: "The autolysin was a coincident in the production of the paraplegia and he could not eliminate syphilis despite the negative state of the blood and the spinal fluid."

Socin⁷ reports a case in which "a woman, aged 38, with a history of abortions and miscarriages, whose husband died of softening of the brain, suffered with a syphilitic eruption on the body. She received two doses of arsphenamin. The second dose produced an encephalitis and a severe affection of the spinal cord, with a decubitus. The patient died. The study of the cord was interpreted as a toxic myelitis." I hesitate to accept his interpretations, for we lack exactness and undoubted proof in differentiating a toxic spinal lesion that might be confused with syphilitic condition. It is for us to discover more readily the spirochete and clarify this doubtful etiology.

Then is not arsphenamin injurious to nervous tissue?

Erlach states that the drug is not injurious to nervous tissue. The drug was thought at one time to have an unfavorable influence on the optic nerve but not the cord. This was probably the outcome of the injurious effect of atoxyl and other aromatic arsenic preparations.

Schoenburg⁸ says that to those who have used a great deal of arsphenamin in syphilis of the central nervous system, "one thing is clear, namely, that it is not injurious to the healthy or damaged optic nerves if administered in proper doses and at proper intervals."

St. John Johnson⁹ experimented on rabbits with arsphenamin as to its therapeutic and toxic doses. Twelve rabbits were thoroughly impregnated with arsenic by arsphenamin injections. The dose of 1 decigram was lethal to but three rabbits; the others lived throughout the treatment, and at necropsy, arsenic was recovered in the tissues examined. In none of the twelve was an optic neuritis to be produced. These experiments, taken in connection with the fourteen cases of optic neuritis discovered during the survey of patients before or during the treatment of syphilis in which the optic nerve lesion disappeared rapidly under arsphenamin treatment, show that in these cases at least, arsenic has had no influence on the development of an inflammation of the optic nerve; rather contrariwise; when neuritis had already developed, the specific treatment caused

rapid resolution. Thus it seems, Johnson concludes, the fear of production of blindness by therapeutic doses of arsphenamin is unwarranted.

The evidence presented justifies a parallel deduction as to its harmful effect on the spinal cord.

Further possibilities arose in the production of the paraplegia, demanding an explanation. In the case that I report was it a Herxheimer reaction? This reaction is an inflammatory response noted after the use of specific treatment in syphilis and is alone observed in syphilitic subjects. The reaction is spoken of as a disturbance of the endotoxins, and an excitation of the spirochete by insufficient dose of the drug.

I hesitate to accept as an explanation of this reaction that it is dependent on a questionable endotoxin or even on a toxin. The reaction might be explained as an indirect focal protein reaction, and this is occasioned by dead spirochetes. I believe, not that this was a Herxheimer reaction, but that it was a case of retrobulbar optic neuritis with myelitis, which is a definite clinical entity, and the paraplegia must play its part in the syndrome.

Hillion¹⁰ defines the process as a clinical syndrome characterized by a diffuse myelitis, oftenest acute, preceded, accompanied or followed by an optic neuritis.

This clinical entity, so well defined, dates to the writings of Erb and Steffan, who in 1879 reported a case of transverse myelitis in association with a retrobulbar neuritis.

Goulden¹¹ collected fifty-two instances. The eye symptoms appeared first thirty-six times, the spinal cord symptoms ten, and there was simultaneous appearance of eye and cord symptoms three times. The order of appearance was not stated three times.

The cases reported by Dreschfeld, Knapp, Chisholm, Mohokian and Hennenberg showed a definite choked disk. A great number of all the cases were without fundus changes at the beginning, though the eyes were blind.

Weisenburg¹² states that there is rarely a return of vision, and that there are only three cases on record in which the return of vision was complete. There was usually a resulting white atrophy of the optic nerves.

The death toll has been at least 60 per cent., and thirty cases have gone to necropsy. In the anatomic and pathologic studies made, all are agreed that the optic nerve lesion presents the same pathologic condition as found in the cord, that is, a softening, a degeneration and a neuroglial proliferation.

Bielschowsky considers the neuritis primary and parenchymatous. Anatomic continuity of the lesion in the cord has not been demonstrated. Elschnig believes that the optic neuritis is interstitial and that the vision is destroyed mechanically.

The etiologic factor in the production is well stated by Nettleship,¹³ who says that in his experience fifty per cent. of the symptomatic retrobulbar optic neuritis cases in contradiction to idiopathic are due to syphilis, and, further, that since 1899 experience has shown that a large percentage are caused by syphilis and in the future many so-called idiopathic cases will, with the aid of serum diagnosis and improved methods, come under this heading.

4. McCaskey, G. W.: *Salvarsan and Neosalvarsan Myelitis*, J. A. M. A. **69**: 1960 (Dec. 8) 1917.

5. Webber: *Boston M. & S. J.*, 1880, p. 102.

6. Collins: *Neurological Clinics*, pp. 172-181.

7. Socin: *Cor.-Bl. f. Schweiz. Aerzte* **46**: 1537 (Nov.) 1916.

8. Schoenburg, M. J.: *Am. J. Ophth.* **2**: 518 (July) 1919.

9. Johnson, St. John: *Am. J. Ophth.* **2** (Oct.) 1919.

10. Hillion, H.: Paris thesis, 1906-1907: "On désigne sous le nom de neuro-myélite optique aiguë, un syndrome clinique caractérisé par une myélite diffuse, le plus souvent aiguë, précédée, accompagnée ou suivie d'une névrite optique à évolution parallèle."

11. Goulden, Charles: *Ophth. Rec.* July, 1914.

12. Weisenburg, in Posey and Spiller: *The Eye and Nervous System*, p. 569.

13. Nettleship, in Parsons: *Pathology of the Eye* **5**: 4, 1913.

In my case, though the Wassermann test was negative both for the blood and for the spinal fluid, the other tests show that the etiology was that of syphilis. We have been able to compile seventy-two cases. Forty cases were studied most carefully. Of the forty, seventeen patients undoubtedly had syphilis, shown either by a lesion or an acknowledgment of having had the disease. Twenty-eight died. Necropsy was held in twenty-one. Either a total or a partial atrophy was the result in all cases but three.

The subject has been the occasion for theses by Hillion, Gault, Picqué and Faure. Hillion reported forty cases. Devic reported twelve cases; Taylor gives a bibliography of twenty-five references.

CONCLUSION

It is well to remember that syphilis presents a vagary of symptoms at times lacking a definite explanation. What appears as an incongruous syndrome both pathologically and clinically is very often to be made clear when syphilis is taken into consideration, and an appreciation of the changes that might occur from a syphilitic arteritis, better known as a Huebner arteritis. We rid ourselves of dissenting opinions in unclassical cases, it will be essential to find the spirochete present. When we may emphatically state the existence of the syphilitic disease.

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EPIDEMIC ACUTE HEMORRHAGIC JAUNDICE OF TOXIC ORIGIN

ITS SYMPTOMS AND PATHOLOGY

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During a period of ten weeks, commencing the middle of December, 1919, sixteen patients were admitted to Bellevue Hospital suffering from a variety of acute hemorrhagic jaundice. Of this number nine died—a mortality of 56.2 per cent. Clinically and anatomically the disease presents features which, on the one hand, are strikingly similar to those of infective jaundice and yellow fever, and, on the other, to acute yellow atrophy of the liver. Moreover, it has been a subject of remark that cases corresponding in all essentials to acute catarrhal jaundice have recently been received in numbers noticeably in excess of the routine experience of former years. It is possible that some of these present a mild form of the epidemic disease, though in such patients stupor or delirium and hemorrhages are conspicuous by their absence, and recovery is the rule.

In eight of the sixteen cases of acute hemorrhagic jaundice, unsuccessful attempts were made to find spirochetes in stained films of blood taken from living patients. In addition, fresh blood or urine, depending on the stage of the disease, or both, were injected into guinea-pigs in an effort to reproduce the changes, as has been claimed in infective jaundice and yellow fever; as a routine measure 15 c.c. of blood were divided into equal parts and injected into the peritoneal cavity of three guinea-pigs, and 50 c.c. of urine, removed by catheter, were centrifuged, and from 2 to 5 c.c. of sediment, according to the total quantity produced, were injected into one or several guinea-pigs.

The results were uniformly negative. None of the animals dying spontaneously within the period of incubation—from six to thirteen days—or killed thereafter, showed the slightest indication of jaundice or hemorrhage. In three of the hospital patients, sections of the liver and kidney removed at necropsy were stained by the older method of Levaditi, but no spirochetes were found. In thirteen of the sixteen cases, blood cultures were negative; the others were not taken. In three patients who succumbed with symptoms of acute yellow atrophy of the liver, chemical examination for the heavy metals, particularly phosphorus, was negative (Dr. Gettler).

Of the sixteen cases, six were investigated by necropsy. In addition to jaundice and hemorrhages in the skin, mucous and serous membranes, various viscera and elsewhere, the kidneys were found to show cloudy swelling or necrosis of the tubular epithelium, while the changes in the liver varied from intense granular degeneration to those commonly described as acute yellow atrophy. In three instances the mucosa of the gastro-intestinal tract was greatly swollen and dirty grayish blue, while in the other three no changes were apparent to the naked eye, but were disclosed on microscopic examination.

In view of the fact that the disease occurs in epidemic form and is consequently to be expected in other quarters, its clinical aspects and the findings in those cases that were investigated postmortem are presented in this paper at some length.

SYMPTOMS AND PATHOLOGY

The prevailing type of epidemic jaundice, as we have seen it at Bellevue Hospital, is divisible into two symptomatic groups. The first group is characterized by jaundice of the conjunctivae, preceded, as a rule, by lassitude, digestive disturbances and other prodromes, and is accompanied by physical signs indicative of bronchitis. The patient takes to his bed, and in the course of the next few days jaundice becomes generalized and intense, the color is oftenest a greenish yellow, occasionally bright saffron, the conjunctivae are suffused, and hemorrhages are constant—epistaxis, hematemesis, melena, hemorrhagic vesicles about the lips and chin, and petechial or splotchlike extravasations in the skin or visible mucous membranes, in the former situation corresponding, in many instances, to scratch marks, the pressure of bedclothing, and other trivial injuries. By this time the mental condition of the patient is such as to fix the attention of the observer. The patient is languid, drowsy, stuporous or irritable and restless, sometimes irrational. The stools are clay colored. Vomiting and diarrhea occur but are not common. Frequently, indeed in the majority of cases, the patients complain of pain in various localities, and even though stupor be pronounced, signs of tenderness may easily be elicited by pressure on different parts of the body. In two of the Bellevue Hospital cases the combination of jaundice, clay colored stools, vomiting and epigastric pain and tenderness seemed to point to mechanical obstruction to the outflow of bile, and the abdomen was opened, but no cause was found. In the group under consideration, temperature, pulse and respiration are variable quantities, and appear to be determined largely by intercurrent conditions, such as bronchitis, pleuritis and the like. Moderate leukocytosis is the rule—from 11,000 to 24,000. The differential count is normal.

The urine contains albumin, bile and granular casts in abundance. At necropsy, these individuals show, in addition to the superficial signs of jaundice and hemorrhage, icterus of the deeper structures, notably the liver and kidneys, and hemorrhages in various tissues—the lungs, serous and mucous membranes, and soft tissues. In the lungs the physical signs seem to be due, in part at least, to the escape of blood into scattered groups of air vesicles. The kidneys show a degree of acute parenchymatous degeneration rarely surpassed, graduating not infrequently into necrosis of the tubular epithelium, diffusely or in large patches, with or without intratubular or interstitial hemorrhages. The liver exhibits cloudy swelling attended on occasions by dissociation of parenchyma cells and by fatty transformation and even death of cell groups, more particularly in those localities where bile imbibition is pronounced (the so-called icteric necrosis).

The second group is characterized by severe jaundice, wild delirium and rapid death. In such cases the liver presents histologic signs of diffuse necrosis, although the naked eye appearances may be those of a relatively well preserved organ. In other instances, necrosis of liver tissue is attended by innumerable hemorrhages, and the naked eye changes are then indistinguishable from those of the so-called acute yellow atrophy.

PATHOGENESIS

Perhaps the most illuminating feature in the pathology of the disease as a whole is to be found in necrosis of the gastro-intestinal mucous membrane without obvious interference with the escape of bile through the duodenal papilla. That bile does not escape, however, is shown not only by the degree of jaundice, but also by the acholic state of the intestinal contents, depending, apparently, on conditions in the liver cells and bile capillaries, rather than on mechanical obstruction to the exit of bile from the larger ducts. The changes in the gastro-intestinal mucosa are such as to suggest that the provocative agent is absorbed by the tributaries of the portal vein and conveyed to the liver, where the necrotic lesions correspond definitely to the distribution of the portal blood; that is to say, the liver lobules are destroyed, while the interlobular connective tissues with their blood vessels and bile ducts are relatively unchanged. The hemorrhagic extravasations in different tissues are secondary, most likely, to injury of the capillary endothelium by bile salts, promoted, perhaps, by lack of fibrinogen such as has been demonstrated in other destructive lesions of the liver, notably in experimental chloroform necrosis.

In view of the fact that we have not been able to produce the icteric and hemorrhagic changes in animals by the same methods that are said to yield positive results in so-called spirochetal jaundice, I am inclined to regard the disease under consideration as a toxic process, the reaction to which varies with the individual, some persons responding rapidly and with great violence, others more slowly and less severely. That the provocative agent is not being constantly renewed does not vitiate the contention, since it is known that the effects of certain poisons are delayed and that, once the liver is damaged in such manner that autolytic enzymes are released, a series of changes is initiated that becomes independent of the original cause. At the same time the toxic effects of bile are to be taken into consideration.

THE MORE PROLONGED CASES

CASE 1.—History.—A man, aged 55, who was admitted to Bellevue Hospital, Dec. 15, 1919, and who died, December 23, stated that for two months he had been troubled with "indigestion" and pain in the abdomen, most marked in the epigastrium. About ten days before admission the pain in the region of the stomach became intense, radiating to the back and shoulders, particularly the right shoulder. At the same time the patient developed symptoms of retching and was unable to retain food, vomiting immediately after eating, and there was severe diarrhea. On admission he was intensely jaundiced and very drowsy. During his stay in the hospital he was frequently irrational, and complained of itching of the skin. Muscular twitchings occurred at intervals and lasted for considerable periods. On admission the patient's temperature was normal and remained so for six days; on the seventh day it was 100.5 F., reaching 101 on the eighth day, where it remained until death occurred on the ninth. The white blood cells numbered 15,200; the differential count was normal; hemoglobin, 65 per cent. The urine contained albumin, and bile and granular casts were abundant.

Because of the jaundice, clay colored stools, vomiting and the intense pain in the abdomen, the patient was operated on and the gallbladder opened and drained. It was found to contain a moderate quantity of slightly viscid bile.

Necropsy.—There was intense jaundice of the skin and visible mucous membranes, the viscera, heart valves, etc. The lungs presented innumerable pleural and parenchymatous petechial or splotchlike hemorrhages. The kidneys were markedly enlarged and very flabby, diffusely greenish yellow, and friable. The substance was swollen and opaque, and the markings were irregular in distribution, the tufts, however, standing out as minute reddish specks. The mucosa of the stomach from one end to the other presented a dirty grayish blue, succulent appearance, and was swollen and irregularly covered by tenacious mucus, the rugae being flattened. The mucosa of the entire intestinal tract was similarly swollen, thickly covered by a milklike fluid, and the folds, particularly in the jejunum, were extraordinarily prominent, edematous and dirty pinkish. The liver was about normal in size, smooth, deeply jaundiced, the markings fairly distinct, and the cut surface somewhat resembling a nutmeg. No focal lesions were visible. The mucosa of the larger bile ducts was bathed in thin mucoid secretion, the duodenal papilla was patent, and no obstruction was apparent in the vicinity.

Microscopic Examination.—The liver cells showed marked dissociation, as if the liver had been given a severe shaking, the cells were cloudy, irregular in size and distribution, indistinct in outline, and their nuclei obscured. In many instances the central veins were distended by blood, and groups of intensely jaundiced liver cells were arranged circumferentially to the central vein or in streaks through the lobule. The kidney showed widespread granular degeneration, particularly the epithelium of the convoluted tubules, with desquamation of bile stained cells into the lumen. The mucosa of the stomach, duodenum and jejunum showed a superficial necrotic layer made up of pinkish-staining debris and glandular remnants, among which at intervals were numbers of red cells and nuclear fragments. The deeper capillaries were irregularly but intensely injected. The epithelial cells in the lowermost glandular tubules were apparently well preserved or slightly swollen and granular. The lung showed innumerable intra-alveolar hemorrhages in scattered groups.

CASE 2.—History.—A man, aged 54, who was admitted to Bellevue Hospital, Jan. 26, and died Feb. 3, 1920, stated that eight days before admission he had a chill followed by a splitting headache, but that previous to that time he had been feeling quite well. Three days later he was told that he "looked yellow"; and five days after this, when he was admitted to Bellevue Hospital, the conjunctivae and the skin of the entire body were deeply jaundiced. Just before admission the patient suffered a severe attack of epistaxis, and bleeding was still in progress on his arrival at the

hospital. The patient was languid, and there were small mucous hemorrhages in the lips and soft palate, and any punctate or slightly larger hemorrhages in the skin of the face. The epigastric and right upper regions of the abdomen were tender and resistant to palpation. For four days after admission the patient's temperature was normal. In the evening of the fifth day it was 103 F., and registered between 101 and 103 F. every evening thereafter until death. There was a well marked friction rub over the right side of the chest between the sixth and ninth ribs that became audible on the seventh day. The white cells numbered 24,000. The urine contained albumin, granular casts and bile. The day after admission the patient passed a tarry stool which responded to the guaiac test for blood. The Wassermann reaction was negative.

Necropsy.—The body was markedly jaundiced. There were several hemorrhagic specks in the region of the lips, and numbers of subendocardial hemorrhages. The mucosa of the stomach, duodenum and the first half of the jejunum was swollen, greyish green and gelatinous, bathed by a thin milk-like fluid. Pressure on the gallbladder was followed by the escape of bile through the duodenal papilla. The liver was about normal in size, bile stained, but otherwise showing no naked eye changes. The gallbladder was slightly distended by viscid bile. The right lung was the seat of a confluent lobular pneumonia, and abundant semipurulent fluid exudate was present in the corresponding pleural cavity.

Microscopic Examination.—Histologically, the most severe changes were apparent in the gastro-intestinal mucosa and the kidneys. In the stomach and duodenum the mucosa was extensively necrotic. In places destruction of tissue was superficial, but at times practically the whole of the glandular layer was converted into pinkish-staining, structureless debris, in the tissues beneath which the capillaries were irregularly injected and distended. In the kidney the cells of the tubules, particularly in the cortex, were almost completely necrotic and were extensively desquamated and bile stained. Small hemorrhages were visible at intervals. The liver presented marked signs of cloudy swelling with dissociation of cells, and jaundiced areas were numerous, especially around the central veins, where many of the cells were undergoing necrosis.

CASE 3.—History.—A man, aged 60, who was admitted to Bellevue Hospital, Dec. 18, 1919, and died, Jan. 1, 1920, stated that for three weeks previous to admission he had been "feeling mean" because of general lassitude and aches and pains. His mental condition was such, however, that it was impossible to obtain an intelligent history. At the time of admission he was very irritable, but icterus was not apparent. On the second day after admission a yellowish tinge was noted in the sclerae, the next morning jaundice was distinct and the following day it was marked; hemorrhagic herpes appeared about the mouth, and epistaxis occurred. The patient was now extremely prostrated, irrational or stuporous by turns, and numbers of minute hemorrhages appeared in the skin. The edge of the liver was enlarged and the organ was tender, so much so that abscess was suspected. In the next two or three days, innumerable hemorrhages occurred in the skin, particularly in the line of scratch marks, and jaundice became extreme. The stools were clay colored. On admission the patient's temperature was 102; it rose to 104 F. on the second day, and by the third it fell to normal, after which it was subnormal until death, which occurred eleven days after admission. The leukocytes numbered 11,000. The urine contained albumin, casts and bile. The Wassermann reaction was negative.

Necropsy.—In addition to jaundice and superficial hemorrhages, necropsy revealed multiple hemorrhagic foci in the lungs. The liver was normal in size and consistency, and its lobules stood out distinctly. Bile was expressed through the duodenal papilla, and no obstruction was apparent in or around the larger ducts. The gallbladder was slightly distended by thick, dark green bile. The mucous membrane throughout both the stomach and intestine was swollen and greenish gray. The kidneys showed no noteworthy naked eye changes.

Microscopic Examination.—The liver cells were swollen and cloudy and, in the immediate vicinity of the central veins, crowded with bile. There was marked granular degeneration of the tubular epithelium of the kidney and injection of its smaller blood vessels. The gastro-intestinal mucous membrane showed advanced and widespread alterations. The lowermost glandular tubules were well preserved, but at about the middle of the mucosa became transformed into a jumble of cells, many of which contained pycnotic nuclei, others nuclear fragments. The uppermost layer of the mucosa was converted into dull pinkish-staining debris and showed frequent signs of exfoliation of large masses of dead material. The capillaries in the submucosa were richly injected by red cells.

CASES WITH DIFFUSE NECROSIS OF THE LIVER

CASE 4.—History.—A boy, aged 16, who was admitted to the Psychopathic Pavilion, December 24, and died the following day, had complained of "stomach trouble" ten days previously, vomited, and turned yellow, according to the report of members of the family. Two days prior to admission he became acutely ill, excited and delirious. He was admitted in restraint, extremely restless and excited. Jaundice was intense, the tongue foul, the teeth covered by sordes. The patient soon lapsed into coma, and just before death the temperature registered 108 F.

Necropsy.—The body was deeply jaundiced. Hemorrhages were apparent in both upper eyelids, in the mouth and beneath the visceral pericardium and pleura and in the substance of the lungs. The liver appeared to be normal in size, its form was preserved, the capsule smooth, and the substance unchanged as far as the naked eye could detect, except that it was diffusely yellow. The gallbladder contained a very small quantity of thin, light colored bile. The kidneys and gastro-intestinal mucous membrane showed no naked eye alterations other than jaundice of the former. The brain was slightly congested. Cultures from the spleen remained sterile.

Microscopic Examination.—Destructive changes in the liver were so widespread and severe that, in sections stained by hematoxylin and eosin, it was not easy to identify the organ. In sections stained by the method of Van Gieson it was seen, however, that the perilobular connective tissue was well preserved or slightly more cellular than usual, and that it supported intact blood vessels together with large numbers of bile canaliculi, the lining cells of which were apparently only slightly changed. In frozen sections stained by sudan III, individual liver cells or small groups of cells crowded with fat globules were strewn through the periphery of the lobule, an occasional cell being more centrally placed. Otherwise the cells lying between the perilobular connective tissue and the central vein were converted into a mass of structureless material consisting of wrinkled, collapsed and ruptured cell membranes, nuclei in various stages of disintegration, granules of bile pigment, and free red cells arranged diffusely or in minute clumps and streaks.

The epithelial cells in the convoluted tubules of the kidney were swollen, opaque and granular, their nuclei obscured. In practically all the tubules the swelling was such as almost completely to obliterate the lumen. The tufts were bloodless and were composed of collections of nuclei of different shapes and sizes arranged without any semblance of order and lying in a pinkish, opaque matrix. In the cortex small hemorrhages were visible, while near the apexes of the pyramids were large extravasations. The lungs showed innumerable discrete and confluent intra-alveolar hemorrhages; in still other alveoli were dense collections of polymorphonuclear leukocytes. The spleen was congested, and the lymphoid follicles were centrally necrotic.

In some places the mucous membrane of the gastro-intestinal tract was well preserved, in other places it showed necrosis, sometimes involving the uppermost layers, at other times extending to the muscularis. The necrotic portions were represented by pinkish-staining granular debris, scattered through which were glandular remnants, red cells, nuclear granules and an occasional collection of lymphoid cells.

Chemical examination of the liver for phosphorus was negative.

CASE 5.—History.—A man, aged 31, who was admitted to Bellevue Hospital, January 8, and died the same day, was profoundly stuporous and could not be roused. The entire body was deeply jaundiced. The patient's temperature was 103 F., pulse 135. Otherwise nothing could be learned of him.

Necropsy.—The skin was deep saffron yellow, and the visible mucous membranes were intensely icteric. There were numerous hemorrhagic extravasations in the omentum, mesentery and parietal peritoneum, pleurae and lungs, spleen and brain. The kidneys were congested and jaundiced, changes which were shared by other of the great viscera. The mucosa of the gastro-intestinal tract was bathed in yellowish chymelike material, but otherwise revealed no changes to the naked eye. The liver was markedly diminished in size, weighing 1,040 gm. The consistency was slightly softer than normal, the capsule thin, the color an intense saffron yellow with fine nutmeg markings. The gallbladder contained a small amount of blackish green bile and the duodenal papilla was permeable.

Microscopic Examination.—The histologic changes were essentially the same as those described in the previous case, namely, cloudy swelling of the kidneys, hemorrhages into the spleen and lungs, the latter associated with a lobular exudative pneumonia, superficial or diffuse necrotic lesions in the gastro-intestinal mucous membrane alternating with better preserved areas, and almost complete destruction of the liver. Sudan III and Van Gieson preparations showed changes not to be distinguished from those described in the preceding case—preservation of the interlobular connective tissue with its bile canaliculi and blood vessels, scattered groups of fat-containing cells near the edges of the lobules, and complete disintegration of the remaining cells with numerous hemorrhages.

Chemical examination of the liver for phosphorus was negative.

CASE 6.—History.—A man, aged 21, who was admitted to the Psychopathic Pavilion, February 18, and died the following day, had worked Monday, the 16th, according to a statement of his brother. Tuesday he complained of having a cold, and Wednesday he became raving. On admission he was intensely agitated, shouting and resisting all efforts to care for him, trying to bite nurses and attendants. At this time he was slightly jaundiced, but in the succeeding twenty-four hours icterus became extreme.

Necropsy.—In addition to the intense jaundice, there were numerous hemorrhages into the lungs and spleen, and a massive extravasation into the soft tissues around the pancreas. The kidneys were swollen and icteric. The mucosa of the stomach appeared to be atrophic and irregularly congested, but otherwise no changes were apparent to the unaided eye. The liver was greatly reduced in size and weighed 890 gm. It was flabby, but increased in consistency, being almost leathery to the touch. Scattered beneath the capsule and throughout the substance were hundreds of irregularly outlined hemorrhages, between which the liver tissue was ochre-yellow and opaque. The gallbladder contained a few cubic centimeters of thin, light colored bile. The pia arachnoid was congested, but the substance of the brain was apparently normal.

Microscopic Examination.—To describe the histologic changes in this case would be a virtual repetition of what has been said of the preceding two cases, including the necrotic changes in the gastric mucosa and the widespread destruction of the liver lobules, although, in the latter situation, hemorrhages were far more frequent and extensive.

Chemical examination of the liver for phosphorus, antimony, arsenic, mercury and tin was negative. Blood removed at necropsy was injected into guinea-pigs with negative results.

SUMMARY AND CONCLUSIONS

1. There is a variety of epidemic jaundice attended by spontaneous or easily induced hemorrhages in the skin, mucous and serous membranes, viscera, and vari-

ous soft tissues, by mental symptoms ranging from stupor to wild delirium, by clay colored stools, pain and tenderness differing in location and intensity, sometimes by vomiting and diarrhea, with or without elevation of temperature (the latter, when present, being due, apparently, to intercurrent conditions, such as bronchitis and pleuritis) and, finally, by such incidental phenomena as muscular twitchings and itching of the skin. The mortality is high. The disease lasts from a few days to two or three weeks, depending in large measure, on the extent and severity of the necrotic changes in the liver. In the relatively small number of cases that we have seen at Bellevue Hospital it was noted that those corresponding to acute yellow atrophy of the liver and accompanied by violent mental disturbances occurred in young persons, while the more prolonged cases associated with stupor were found after the fiftieth year of age. All the cases that we have seen were in male patients.

2. Anatomically, in addition to jaundice and hemorrhages, the disease is characterized by cloudy swelling or even necrosis of the tubular epithelium of the kidneys, by cloudy swelling of the liver with or without dissociation of cells and foci of icteric necrosis, or by widespread necrotic changes corresponding in all essentials to those commonly described as acute yellow atrophy of the liver, and by diffuse or scattered superficial or deep areas of coagulation necrosis in the gastro-intestinal mucosa. In the more prolonged cases changes in the gastro-intestinal tract are evident to the unaided eye; in the rapidly fatal cases no alterations in this locality are discernible to the naked eye, and it remains for microscopic investigation to disclose them.

3. The disease is not transmissible to guinea-pigs by intraperitoneal inoculation of blood or urine, and is probably not of spirochetal origin, but a manifestation of toxemia of unknown nature. Phosphorus and other heavy metals are not detectable on chemical examination of the necrotic livers. The structural alterations in the gastro-intestinal tract indicate that the provocative agent gains entrance through this channel. The necrotic changes in the liver in those cases that resemble acute yellow atrophy suggest that the toxic substance is absorbed from the gastro-intestinal tract into the tributaries of the portal vein, since the dead liver tissue corresponds quite definitely to the distribution of the portal blood, the lobules being totally destroyed, while the interlobular structures, including blood vessels and bile canaliculi, remain relatively well preserved. Jaundice seems to be due to inability on the part of the bile to escape from its intrahepatic capillaries, since there is no demonstrable obstruction in the larger ducts microscopically or otherwise. The hemorrhages probably depend primarily on injury to the capillary endothelium brought about by the action of bile salts and encouraged by diminution in fibrinogen due to destruction of liver substance.

4. The association of intense jaundice with clay colored stools, and pain and tenderness in the region of the gallbladder and liver, has occasionally prompted surgical intervention. The occurrence of the disease in epidemic form, and the presence of more or less profuse hemorrhages in or from the skin and mucous membranes, should serve to arouse caution in the interpretation of symptoms that otherwise are suggestive of remediable obstruction to the escape of bile

400 East Twenty-Ninth Street.

OCCLUSION OF THE RIGHT POSTERO-INFERIOR CEREBELLAR ARTERY

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CHICAGO

The literature on the subject of occlusion of the postero-inferior cerebellar artery records the fact that the syndrome brought out by occlusion of this vessel corresponds very closely to that found in occlusion of the vertebral artery. Occlusion of the basilar artery may also produce a similar syndrome.

The patient whose history and symptoms I record is in the main recovered from the attack, so that the clinical diagnosis cannot be verified.

Breuer and Marburg¹ show that clinically and experimentally the differential diagnosis between occlusion of the postero-inferior cerebellar artery and the vertebral artery cannot be made with certainty. In one of their cases the vertebral artery was occluded and the postero-inferior cerebellar artery escaped, and yet the lesion occupied about the same region as in cases in which the postero-inferior cerebellar artery was occluded. If pontile symptoms are present, according to these authors, the vertebral artery rather than the postero-inferior cerebellar artery is probably the seat of the lesion.

REPORT OF CASE

History.—S. M., man, aged 55, chauffeur, referred to me by Dr. H. G. Dern, Nov. 25, 1919, said that while on his way to work about October 1, he suddenly became dizzy and fell to the ground, but did not lose consciousness. He was taken home and put to bed. When Dr. Dern first saw him he said he had vomited several times during the day. On examination at that time the physician observed the presence of a horizontal nystagmus; also when the patient attempted to bring a glass of water to his mouth with his right hand, marked ataxia was present. He had similar ataxic movements of the right leg on attempting to walk. There were no such movements of the left arm or left leg. The patient was hoarse and talked almost in a whisper for a period of four or five days. There was no dyspnea. The pulse, however, was very slow for several days. About one week after the onset of the attack the patient noticed while walking along the sidewalk there was a constant tendency to deviate to the right, and before he realized it he was off the sidewalk. The dizziness improved, the ataxia got better, the vomiting ceased, and at the end of ten days or two weeks the patient was walking around the house and was feeling very well, as he expressed it. His condition then remained stationary until November 15, when while taking a walk he suddenly became dizzy and would have fallen had not an adjoining wall supported him. He was able to get back upstairs alone. His dizziness gradually improved until November 25, the date of his entrance to St. Luke's Hospital.

There was no history of any previous illness. He had never undergone any surgical operation. He denied syphilis or other venereal infection. His family history was entirely negative.

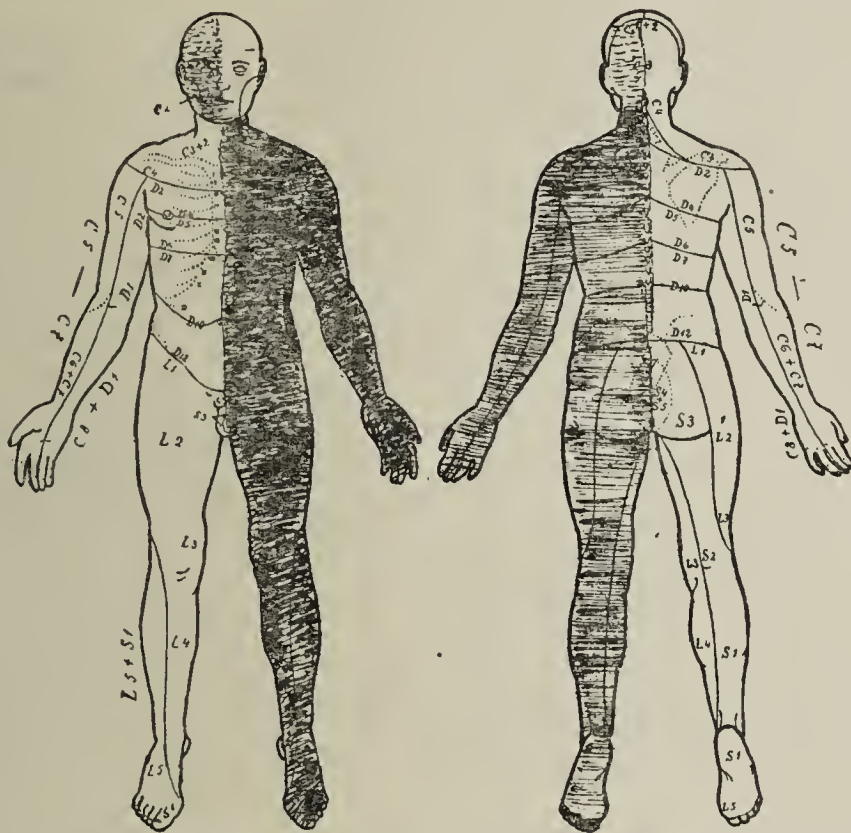
Examination.—I found the head slightly tilted toward the right. The patient had a tendency to go to the right when walking. Both pupils reacted to light and accommodation. The right pupil was smaller than the left. The palpebral fissure on the right side was narrow, and an apparent enophthalmos was present on the right side. Horizontal nystagmus was present but not marked. The optic disks were normal, and no other ocular paralysis was observed. There was no deafness. The facial muscles on the right side showed slight weakness, but were apparently normal on the left side. There was no deviation of the jaw on opening the mouth. On protruding the tongue there was noticeable a slight atrophy of the right side of the tongue. The palatal muscles and the larynx were negative. There was no lagging of either vocal cord. The heart action was normal. The respiratory tract was negative. The deep reflexes were normal except that the right knee jerk and the right Achilles were slightly decreased. The abdominal reflexes were present but decreased. The sensory findings showed a loss of pain and temperature sense and to a less extent tactile sense on the right side of the face, corresponding to the distribution of the sensory portion of the fifth nerve and more pronounced over its upper branches. There was a patch of herpes at the edge of the right naris. The right side of the

face did not perspire, while the left side showed a profuse perspiration. A pin prick caused bleeding on the left side of the face very easily, indicating a vasomotor disturbance. There was no disturbance of sensation on the left side of the face. Posteriorly over the scalp, the region supplied by the cervical plexus on the left side, sensation was dull to the pin prick. Beginning in the region of the clavicle and involving the entire left side of the body there was a loss of pain and temperature sense only. The tactile and position senses were preserved on both sides of the body. There were no bladder or rectal disturbances. The systolic blood pressure was 120, diastolic, 80. The Wassermann reaction was negative with both blood and spinal fluid. The vestibular apparatus was carefully tested by Dr. Frank Brawley, who reported:

"Complete test of the vestibular apparatus indicates a lesion of the right side of the brain stem, which almost completely blocks the responses from the horizontal and vertical canals and both raphes of Deiter's nucleus. There are disturbances in the responses from the left side also, probably due to pressure. The areas involved correspond to the location of the postero-inferior cerebellar artery, but cover a greater area than Louis Fisher's² case."

COMMENT

While no definite etiology is given in this case, Salmon³ states that 88 per cent. of the cases of thrombosis of the postero-inferior cerebellar artery occur in alcoholics or syphilitics. The characteristic symptoms, as stated by this author, include those recorded in this case. He also makes the statement that the symptomatology caused by thrombosis of the vertebral artery is analogous to that of thrombosis of the postero-inferior cerebellar artery. In one case he noticed disturbances of deglutition and paresis of the facial



Areas (indicated by shading) in which there was loss of the sense of pain and temperature.

2. Fisher, Lewis, quoted by Jones: *Equilibrium and Vertigo*.

3. Salmon, A.: *La trombose della arterie bulbari*, *Riforma med.* 29: 649, 1913.

muscles on the side of the lesion, transitory diplopia, and especially the sympathetic syndrome, as shown in this case, namely; enophthalmos, and narrowing of the pupil and of the palpebral fissure on the side of the lesion.

Spiller⁴ has recorded the same syndrome, and states that it is not present in all cases.

A perusal of the literature discloses no previous reports on the testing out of the vestibular apparatus, except by Fisher, as stated in Brawley's report. In Fisher's case there is shown involvement of the horizontal canals without involvement of the vertical canals. He arrives at the conclusion that the anatomic arrangement is such as to bear him out in the statement that the normal connections leading from the horizontal canals to the vestibular apparatus through the inferior peduncle to the cerebellum are blocked, whereas the fibers from the vertical canals through the middle cerebellar peduncle to the cerebellum are not damaged.

In studying the symptoms from the standpoint of cranial nerve involvement, we find that the sensory portions of the fifth, sixth, seventh, eighth, ninth, tenth, eleventh and twelfth nerves have all been recorded in one report or another as having been involved, but not all have been involved in any one case. The spinal or sensory root of the fifth nerve on the side of the lesion has been involved in every case reported. That the sixth nerve, when involved, usually shows a transitory involvement, as evidenced by the temporary diplopia, and the paresis of the face on the side of the lesion, has been noted in a few instances. Vestibular symptoms due to involvement of those fibers entering the inferior peduncle especially are present in all the cases reported. Difficulty in deglutition, transitory in some cases and persistent in others, is very common. Paresis of one vocal cord producing temporary hoarseness may be present, and slowing of the pulse, most frequently transitory, has also been noted in a few cases. Slight hemiatrophy of the tongue on the side of the lesion, as shown in this case, has not, so far as I can learn, been previously referred to in the literature. However, Wallenberg⁵ speaks of a slight paresis of the hypoglossal due to a lesion in the most laterally situated roots of the hypoglossal nucleus.

The sympathetic syndrome is a common symptom, and can be explained on the location of those fibers in the medulla which are in close proximity to those for pain and temperature, and are also situated near the spinal root of the fifth nerve in the dorsolateral portion of the reticular substance. The fibers for the tactile and position sense are more laterally located in this region and consequently escape injury.

It might be well to add by way of explanation that the fibers for pain and temperature sense located in this region of the medulla supply the opposite side of the body, which accounts for the clinical distribution of such disturbances.

The ataxia, vertigo and asynergy are cerebellar in character and consequently homolateral, owing to the constant involvement of the inferior cerebellar peduncle and Deiters' nucleus, which have to do with equilibrium through the spinal and vestibular connections with the cerebellum.

Wallenberg states that when difficulty of deglutition is present and persistent, both the vertebral and inferior cerebellar arteries are involved, while transitory paral-

ysis of deglutition may be caused by involvement of the postero-inferior cerebellar artery alone. He injected the postero-inferior cerebellar artery and traced its course. He found that frequently there is only one postero-inferior cerebellar artery, and then it is usually the left. Several smaller arteries take the place of the missing cerebellar artery in such instances, and a large antero-inferior cerebellar artery replaces the missing posterior cerebellar artery.

While cases presenting the symptoms usually observed in occlusion of the postero-inferior cerebellar and posterior vertebral arteries are not so uncommon, yet at the same time the cases are so rare that the attention of the general practitioner is not attracted in a way to impress him with the frequency of this syndrome.

CONCLUSION

1. There is a constant syndrome producing disturbances in sensation over the distribution of the fifth nerve on the side of the lesion, with disturbances of the pain and temperature sense on the opposite side of the body.

2. There is a definite sympathetic involvement of medullary origin producing enophthalmos, narrowed pupil and narrow palpebral fissure on the side of the lesion.

3. In some cases the symptoms are more widespread than in others, as in this case, and present a slight hemiatrophy of the tongue on the side of the lesion.

4. Examination of the vestibular apparatus reveals certain definite localizing symptoms on the side of the lesion.

5. The occlusion of the postero-inferior cerebellar artery and the vertebral artery may present practically identical symptoms, so that clinically one cannot be sure whether he is dealing with an occlusion of one or the other artery.

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VENEREAL CAMPAIGN IN PARIS DISTRICT OF THE AMERICAN EXPEDITIONARY FORCES

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BALTIMORE

Since the cessation of hostilities, numerous papers have appeared¹ dealing in general and in particular with the results obtained in the venereal disease campaign in the American Expeditionary Forces. Nowhere was there a graver problem to be faced, and nowhere were more interesting results achieved than in Paris, the Mecca of every American in France.

The Paris district included the city of Paris itself and the country included in the province of Seine et Oise, which completely surrounds Paris, an area, roughly, of 400 square miles. Until January, 1918, Paris was the headquarters of the service of supply, with a permanent strength of from 2,000 to 4,000 men. In spite of the fact that the headquarters of the service of supply was moved to Tours in January, the permanent personnel of the district grew apace

4. Spiller: J. Nerv. & Ment. Dis. 35: 365, 1908.

5. Wallenberg: Anatomischer Befund in einem als akute Bulbaraffektion . . . beschriebenen Falle (Embolie der Art. cerebellar. post.-infer. sinistra), Arch. f. Psychiat. 34: 923-959, 1901.

1. Young, H. H.: Preventive Medicine as Applied to Venereal and Skin Diseases, J. A. M. A. 73: 1668 (Nov. 29) 1919 (complete article in Tr. Sect. Urol., 1919, p. 202). Ashburn, P. M.: Factors Making for a Low Venereal Record in the American Expeditionary Forces, J. A. M. A. 73: 1824 (Dec. 13) 1919. Davis, D. M.: A Campaign Against Venereal Disease in the Army of Occupation, J. A. M. A. 74: 223 (Jan. 24) 1920.

th the American Expeditionary Forces at large, until, the latter half of 1918 and early part of 1919, it averaged from 17,000 to 22,000 men. About one half these men were stationed in Paris proper, the other half in the immediate environs or the surrounding country. No point in the district was farther away from Paris than 30 miles: the city was therefore easily accessible to all.

In addition to the permanent personnel there was always a large floating population of troops of the American Expeditionary Forces made up, until after the armistice, of casualties en route through the city, absent without leave, and during the two months of the Marne-Vesle battles, about 1,000 men a day on short leave from the six American divisions at the front. Jan. 22, 1919, three days' leave to Paris was formally opened. Thereafter, an average of 1,500 men arrived daily. No accurate data are available as to the exact census of casualties in Paris, but it was estimated by the provost marshal that the daily floating population after July, 1918, was between 5,000 and 10,000.

Until March, 1918, no organized plan for handling the problem in Paris existed; and the inevitable result was an appallingly high rate per thousand, as shown in the accompanying chart. It can probably be said without fear of dispute that the rate of 480 per thousand troops, attained in January, 1918, was the highest ever reached in any part of the American Expeditionary Forces. In March, 1918, the plan of organization devised by Col. Hugh H. Young, senior consultant urologist to the American Expeditionary Forces, of placing with each combat division a trained urologist to care for the prevention and treatment of venereal disease, was extended to other areas of France, particularly the service of supply, and I was appointed urologist to the district of Paris.

METHODS OF FACING THE PROBLEM

The available methods of attack with which to face the problem were:² (1) to diminish the number of contacts by placing out of bounds houses of prostitution and areas frequented by street-walkers; (2) to cooperate with the French in the detection and treatment of infected women; (3) to eliminate, so far as possible, the factor of alcoholism by placing out of bounds cafés which sold liquor to Americans; (4) to make use of all measures of social hygiene in an effort to diminish contacts; (5) to provide, by means of a sufficient number of adequately staffed prophylactic stations, sufficient opportunity for the prevention ("early treatment") of venereal disease; and by careful physical inspections of all troops, for its early detection; (6) court martial for all men having contracted venereal disease, and, (7) treatment of disease with the organization so that as little time as possible would be lost from military duties; and at the same time, segregation of all infected patients, to prevent the further spread of infection.

REPRESSION

The primary object of any military venereal disease campaign is, of course, to cut off infection at the source by diminishing contacts. The most effective measures to accomplish this are the first three just outlined. In Paris, however, these measures were utterly out of the question. Prostitutes were present

in enormous numbers, and were, as a rule, exceedingly aggressive. They preferred Americans to the soldiers of any other nation because of the higher pay which the doughboy received. There are few houses of prostitution, about forty in all, with a total of only 400 inmates. The overwhelming majority of the estimated 75,000 prostitutes in Paris are street-walkers, either professional or clandestine. All women in houses are licensed by the police and inspected bimonthly by police physicians (a method which, as Flexner³ and later observers have demonstrated, does not decrease the risk of infection); of the street-walkers only about 5,000 are licensed and inspected. The remaining 70,000, including practically all the clandestine prostitutes, are without supervision or control of any sort, and are permitted to remain undisturbed by the police so long as they are not too publicly offensive. Solicitation is the rule, and is carried on much more publicly than anywhere in this country. There are about 2,500 small hotels, any of which, as well as some of the more expensive and fashionable, are available as houses of assignation.⁴

Identification by a soldier of the source of his infection was in practically every case impossible, since usually he did not discover the name or address of his partner. So far as alcohol was concerned, the situation was precisely similar to that of prostitution. Many of the city's several thousand cafés were designated as out of bounds by the provost marshal, but no number of military police would have been sufficient to enforce the order. It may be considered that alcohol in any form was freely accessible to those who wanted it. Even under these "wide open" conditions it is felt that the use of alcohol played little part in the incidence of venereal disease among Americans.

It was at once apparent, then, that contacts could not be decreased by repression, as had been done with such remarkable success elsewhere in the American Expeditionary Forces, notably at some of the base ports.² It was useless to place houses of prostitution out of bounds, when such an abundance of prostitutes flourished on the streets. One could not designate certain streets or areas as forbidden to Americans because every street, no matter how small or how distant from the center of the city, was used by these women. In the same way, hotels and cafés could not be placed out of bounds, because, with very few exceptions, every hotel in Paris was available for use by couples without baggage, and every café was willing to sell whisky to Americans.

SOCIAL HYGIENE AND DISCIPLINARY MEASURES

Since it was impossible because of the circumstance of location to employ these powerful weapons, we were forced to rely, for the purpose of diminishing contacts, on measures of social hygiene and on the application of such disciplinary measures as could be accomplished. In March, 1918, the campaign was begun, with results that are strikingly shown in the accompanying chart. Within three months the incidence rate per thousand had been cut almost in half.

In the chart the annual rate per thousand was estimated by dividing the number of cases during a given period by the number of men in the command (which

3. Flexner, Abraham: *Prostitution in Europe*, New York, Century Company, 1914.

4. Robinson, Daisy M.: Personal communication to the author. Dr. Robinson carried out during 1918 a most extensive investigation of the situation in Paris, and I am indebted to her for full and accurate data regarding the matters in this paragraph.

2 Young, H. H. (Footnote 1).

gave the rate for the period only, not for the year), and then by multiplying this result by the fractional part of a year which the period represents. Thus, if four cases occurred among 1,000 men in one month, the monthly rate was 4 per thousand, but the annual rate was 48 per thousand. From November, 1917, to December, 1918, the rate was computed by the month; thereafter it was computed by the week.

The period from November, 1917, to March, 1918, illustrates the high incidence rate attained when no special campaign was in force; the drop in the rate to one-half its previous figures in June, 1918, illustrates the results obtained when the measures inaugurated in March had begun to tell. The preliminary rise in May, 1918, is due to the uncovering of additional cases by active enforcement of the physical inspection order. There is a sustained level at about 110 per thousand, with a gradual rise at and following the armistice (November, 1918). The further lowering of the average rate during 1919 to about ninety-five per thousand is due to increased facilities for and more care in administering prophylaxis. The peaks of January 16, February 19, March 19, and April 9 are the results of pay day.

The factors which accomplished this decrease in the rate are worth detailing briefly. A campaign of education was begun, consisting of lectures to men and officers, and the liberal use of the U. S. Public Health Service film, "Fit to Fight." Lectures to the men were repeated until they had been told of the various military angles of venereal disease by medical

officers, line officers, and most important of all, trained noncommissioned officers, who were better able to reach the level of the men than the average officer. It was found, with much surprise, that an overwhelmingly large proportion of the men had received no instruction whatever on the venereal disease question before coming to France.

Through the cooperation of the various relief organizations, chiefly the Young Men's Christian Association, the Red Cross and the Knights of Columbus, efforts were made to provide enough recreational activities for the men to keep them off the streets. By the time the armistice was signed, the Y. M. C. A. alone had, in addition to its various canteens and hotels for officers and enlisted men, three large halls, capable of accommodating 14,000 men, in which vaudeville, moving pictures, boxing matches, dances, etc., were given nightly.

These measures accomplished something, but not enough. Many soldiers, even though thoroughly instructed in venereal disease matters and fully provided with the opportunity of Y. M. C. A. and Red Cross entertainment, were obstinate in preferring the society of women of the Paris streets. For this class, it was necessary to institute disciplinary measures.

This was complicated by several factors: 1. The soldiers in Paris were, for the most part, soldiers in name only, since most of them were highly skilled office or technical workers, whose day was entirely taken up by routine duties, uncomplicated by drills or other military inconveniences. Thus they were as a whole unaccustomed to and intolerant of restrictions or discipline. 2. They were divided into small detachments, often commanded by officers whose prime interest was technical work, who came into contact with their men only during office hours, and who, being uninterested in discipline for themselves, were careless of the welfare of their men. As a result of this, the general custom was that after the day's work was done, the soldier's night belonged to him, to do with as he would. 3. Detachments were widely scattered in various large or small barracks, so that just after the armistice, 125 detachments lived in fifty-two different places. As for the floating personnel, they were usually left entirely to their own resources and were wholly beyond the reach of officers or discipline.

Owing to these facts, the "all night leave," with its consequent multiple exposures and failure to use prophylaxis until from

twelve to fourteen hours after the first intercourse, was a tremendous evil. In June, 1918, over one half of all prophylactic treatments were taken after all night exposures. The question then became one of preventing men from being on the streets all night. In those camps or barracks situated outside the city, the commanding officer was requested to allow his



Annual venereal disease rate per thousand troops, Paris district of the American Expeditionary Forces, from November, 1917, to April 23, 1919.

men leave to Paris only once a week, and to insist that they return by midnight. In the city itself, all troops were required to be in their barracks by 9 p. m., unless furnished with a pass to visit a designated place of amusement. Enforcement of these seemingly stringent measures was accomplished by roll calls in all barracks, when every man must be present or accounted for, and by the cooperation of the military police, who were required to examine passes of all men found on the streets after 9 p. m. Rigid enforcement of General Pershing's admirable General Order 77, 1918, was insisted on, especially those points relating to the questioning of all men returning from pass by a guard as to exposure, with compulsory prophylaxis if exposure was admitted, and compulsory prophylaxis without regard to exposure if a man returned intoxicated.

Every effort was made to stimulate a feeling of organization pride and competition. A copy of the weekly venereal disease report was sent to the commanding officer of each organization, with the request that it be posted on the bulletin board where all ranks had an opportunity to see "just where their outfit stood." When all of these methods failed, and an organization had a persistently high incidence rate

commendations were sent to the commanding general that all pass privileges for its men be suspended for a given period. This was frequently done with a most salutary effect. With several detachments of negro troops situated outside the city, it was found necessary to adopt the measure instituted by Col. George Walker at one of the base ports—that of compulsory prophylaxis for every negro soldier each time he reentered the camp after leaving it, without reference to whether or not he admitted exposure.

Bimonthly physical inspections were thoroughly carried out, in conjunction with the district dermatologist. A great deal was accomplished by these means. The rise in the rate for May, 1918, shown in the chart, was directly due to an increase in the number of inspections and to more care used in making them.

All of the disciplinary measures outlined failed somewhat in the accomplishment of their purpose so long as troops remained widely scattered in small detachments. The length to which this practice had gone is exemplified by one organization, whose 150 men were quartered in twenty-five different places all over the city. The remedy for this was concentration. The ideal solution would have been one large camp, in which all men and officers could be quartered. Unfortunately, for many reasons, the ideal or anything closely approaching it was wholly impossible. Some progress was nevertheless made, in spite of seemingly insuperable difficulties, and by February, 1919, about 10,000 men (approximately one half of the strength) had been concentrated in eight large barracks. In all of these places it was possible to institute proper pass regulations to obviate the "all night ail," and to insure prompt administration of prophylaxis.

PROPHYLAXIS

When the incidence rate had reached a stationary level at about 110 per thousand, it became obvious that exposures could not be decreased much below this point, no matter what social and disciplinary measures were applied. Matters would have thus stood at an impasse had it not been for prophylaxis. The feeling grew that if prophylactic treatment could be made more efficient and more widely available, and that if more men could be persuaded or forced to use it, the rate could be still further lowered. Moreover, for the large group of casuals and leave men, none of the foregoing measures were applicable, and from the first our whole reliance had perforce to be placed on prophylaxis.

In order to make the treatment easily available, stations were opened in every barracks which housed more than fifty men, in the two officers' hotels, all the U. S. M. C. A. and Red Cross hotels used for casuals, and in a large building centrally located near the Opera and especially rented and equipped for the purpose. Knowledge of the location of the stations was disseminated to permanent troops through bulletin boards, and to incoming casual troops by cards distributed at all the railroad stations, which cards also contained warnings of the prevalence and danger of venereal diseases and advised continence as the only sure preventive. All military police on street patrol were furnished with a complete list of stations, and each man required thoroughly to familiarize himself with the location of the station nearest to his beat, so that inquiries could be promptly and properly answered. The magnitude to which this work grew can be seen by the fact that in March, 1919, there were in the

district seventy-two prophylactic stations, which gave a weekly average of 5,000 treatments. I have at hand the statistics of 95,916 treatments given in a period of a little more than twelve months.

The number of stations being sufficient to care for all needs, the quality of the treatment administered was the next point to be considered. All attendants were carefully trained, and their records of successes and failures were checked up weekly. Daily inspections of all stations were carried out by a sergeant, and weekly inspections by a medical officer. The results obtained with their bearing on the venereal disease rate will be fully discussed in another communication.

The application of these measures reduced the incidence rate from a high point of 148 per thousand on January 16 (due to the general rise throughout the American Expeditionary Forces after the armistice), to an average level of 94.6 per thousand for the next fourteen weeks (to April 23, beyond which point I have no figures). The rate for the Paris district after June, 1918, was consistently about four times as high as that for the American Expeditionary Forces as a whole, but was only very slightly higher than that for the regular army in time of peace. Considering the unparalleled situation of our troops in Paris, their freedom from the censorious eyes of home surroundings, and the greatly increased facilities for sexual contact over any other location in France or in this country, the record seems very satisfactory indeed.

TREATMENT

Regarding the treatment of venereal disease in the district, there remains but little to be said. It was impossible to carry out the general plan as originally outlined for combat organizations, of having all patients treated by the organization medical officer, for the reason that most of the organizations in Paris were too small to have a medical officer. For this and other reasons, it was thought advisable to centralize the handling of these cases in the district. In March, 1918, a dispensary was opened in the attending surgeon's office. This rapidly grew to a tremendous size and necessitated expansion of space, which was provided by the Red Cross in American Red Cross Military Hospital No. 9. This hospital was the only one in the American Expeditionary Forces devoted entirely to the handling of venereal (and skin) disease. It contained only seventy beds, by far the largest part of the service being ambulatory. The skin service was combined with it, and the dispensary end grew to the size of approximately 500 patients (300 venereal and 200 skin) daily, requiring the service of sixteen medical officers and fifty enlisted men. In the venereal disease outpatient clinic, during twelve months of which I have record, almost 4,000 new patients were seen, thus divided: gonorrhea, 1,667; chancroid, 485; syphilis, 490; nonvenereal, including other types of genito-urinary diseases, 1,126, making a total of 3,968.

It was possible by this means to treat practically all of the venereal disease in the district without loss of time from duty, and with more satisfactory therapeutic results than are ordinarily obtained in civilian dispensaries at home, since the patients, being under military control, were forced to return for further treatment whether they desired it or not. The only drawback to this system was that the segregation of infectious cases was not possible except in the case of primary or secondary syphilis, in which an effort was made to hospitalize the patients until they were no longer infec-

tious. As regards the methods employed in treating venereal disease, they were the same as those used elsewhere in the American Expeditionary Forces and are fully detailed in the "Manual of Military Urology."⁵

CONCLUSION

1. By the use of social hygiene and disciplinary measures, the annual venereal disease rate of the Paris district of the American Expeditionary Forces was reduced from an average level of 313.5 per thousand (for the first five months during which no special steps were taken to combat the evil) to a level of 142.4 for the following nine months. If the first two months of this second period are disregarded, since this length of time was necessary for any measures to take effect, the average rate was reduced to 113.6.

2. This figure (113.6 per thousand) represents the lowest level attained by the repressive and substitutive measures outlined. However, during the next four months, by extending the use of, and improving the quality of, prophylactic treatment, a further reduction to an average level of 94.6 per thousand was accomplished, in spite of the fact that during this period the rate throughout the American Expeditionary Forces at large was gradually rising.

3. It is hoped that the various methods employed may prove useful to medical officers in charge of the health of troops, especially when stationed in large cities. Certain of the points mentioned will suggest themselves as available in a campaign against venereal disease in civil life.

316 Professional Building.

NERVE DEAFNESS DUE TO CONGENITAL SYPHILIS IN THREE CHILDREN

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PITTSBURGH

Deafness, or partial deafness, is being more and more often ascribed to syphilis. Inherited or congenital syphilis in infancy and childhood attacks the eighth nerve with great frequency.

The cases reported herewith are remarkable not because syphilis has produced deafness, but because it has attacked all the children of this family in the same manner, every other part of the body escaping except the eighth nerve.

Though the mother has had four self induced abortions (all abortions coming after the birth of these children), the three children were perfectly healthy children at birth, having none of the stigmas of syphilis and they continued so until at least the end of the first year. Owing to the fact that at least a year had elapsed before signs of deafness developed, these are undoubtedly cases of "late hereditary syphilis," and illustrate the accepted idea of the occurrence of deafness late in the disease.

So far as the parents know, no case of deafness had appeared in their families prior to the birth of these three children. The family history is not remarkable except for the important fact that the father admits a genital sore twelve years before. (At first he denied all venereal history.) This sore was treated locally,

no internal medication having been given. He denies ever having had a skin eruption. The mother and father both show + + + + Wassermann reactions.

The mother, who, when I first saw her, informed me that she had suffered much from "rheumatism in the chest and sciatica," has since been put on antisyphilitic treatment and has been entirely relieved of what she considered very distressing symptoms.

REPORT OF CASES

CASE 1.—*History*.—I. R., girl, aged 7, born by spontaneous delivery at full term, was healthy at birth, no blemishes were noted, and she weighed between 7 and 8 pounds. She was breast fed until the fifth month, after which she did poorly on a proprietary food. At 1 year she sat up, and at 16 months walked and talked. She "was like a natural child until the nineteenth or twentieth month, and then went back." Otitis media appeared at the seventh month, and pertussis at 4 years. The present illness dates from the nineteenth month, at which time the baby began to point to objects and would no longer pay any attention when spoken to or take any notice of noises. This apparent failure to hear has persisted to the present time.

Examination.—The patient was fairly well developed and apparently mentally alert, but was unable to hear sounds of any sort. She spoke no words, but could write all the letters of the alphabet in large print, though she could not write them in order. The epitrochlear glands were enlarged on the right side, but otherwise the findings were not remarkable. The patient was 47½ inches tall and weighed 39½ pounds. Sept. 10, 1919, the result of a blood Wassermann test was + + + +.

CASE 2.—*History*.—E. R., girl, aged 5, born by spontaneous delivery at full term, and breast fed until the ninth month, had pertussis at 2 years, but no other diseases of childhood. She sat up at 7 months, and walked at 13 months, up to which time she was apparently a normal baby. At 13 months, "she seemed to go back and could do nothing." She was never well nourished from this period, and the present illness dates from the thirteenth month. Her history from this point on resembles that of Case 1.

Examination.—She was a fairly well developed child, 43 inches in height, weighing 38½ pounds, and mentally alert. She made known all her desires by motions and sounds, and spoke no words.

CASE 3.—*History*.—G. R., boy, aged 4 years, born by spontaneous delivery at full term, weighed 7½ pounds, was healthy at birth, and was breast fed until the ninth month. He had pertussis at 1 year, the only disease of childhood. He sat up at the sixth or seventh month, walked at 12 months, and could apparently hear at the age of 1 year. He was "like any other child until 1½ years old," after which time he made no progress so far as speech was concerned.

Examination.—The patient was fairly well developed, and mentally quite alert. He did not talk, but made signs quite intelligently, and could carry on a sign language with his sisters. The pupils reacted to light and accommodation normally. He could hear a very loud sound, but paid no attention to ordinary or loud conversation.

TREATMENT AND RESULTS

Each of these children was put on ascending doses of potassium iodid. Jan. 13, 1920, each child was taking 35 grains, three times a day. All of them were having the expected nasal discharge produced by the drug. One half grain of mercury with chalk, three times daily, very promptly caused gastric distress and was stopped for the time.

All three children were brighter and were beginning to hear loudly spoken words. All could hear the ticking of a watch at a few inches; this they could not do when first seen. All were beginning to talk, using such words as mamma, papa, yes, no, pie, and a few others; and they were learning new words rapidly. When

5. Young, H. H.; Keyes, E. L., Jr., and associates: Manual of Military Urology, Paris: Masson et Cie, 1918.

poken to in a fairly loud tone, the children immediately paid attention, showing that they could hear. The first patient had grown $\frac{1}{2}$ inch and had gained 5 pounds. The second patient had grown $\frac{1}{2}$ inch, and gained $3\frac{1}{2}$ pounds. The third patient had grown $1\frac{1}{2}$ inches, and gained 4 pounds.

The general result has been good, but the question that must be answered to the parents is, What will be the final result? I believe that little may be promised as to the recovery of the sense of hearing. Such patients show slight improvement if any, an irremediable damage having already been done by the time these patients are brought to one's attention. Further care of these children should provide for their education in a proper institution. They will also be put onunctions of mercury, and the routine antisyphilitic treatment will be continued to the time when repeated Wassermann reactions cease to be positive. I believe it advisable to continue potassium iodid beyond this point, the guide, of course, being the improvement or failure of the sense of hearing.

1201 Highland Building.

SEVERE MERCURIAL STOMATITIS CAUSED BY THE ADMINIS- TRATION OF CALOMEL

REPORT OF TWO CASES

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During the last two months two severe cases of mercurial stomatitis have come under my observation: an acute case, and a case of thirteen years' standing, showing the result after recovery. At this time it seems especially appropriate to report these cases, as calomel is being extensively used as a routine cathartic, though many eminent therapists are advising against its routine use.

REPORT OF CASES

CASE 1.—*History*.—W. H., a white man, aged 50, a farmer, whose habits were good, and who had always enjoyed good health except for the usual diseases of childhood, had malaria in 1916. He had been slightly salivated on several occasions after taking calomel. Oct. 25, 1919, he felt bad and was constipated. He took several cathartics, such as castor oil and magnesium sulphate. These did not give him the proper relief, so he concluded he was "bilious," and took two "liver pills," not knowing that they contained 1 grain of calomel each. The patient stated that he would have taken calomel, but he remembered the disagreeable salivation which he had noticed several times before. The pills did not have the proper effect, but on the following day he became salivated, saliva dropping from the corners of his mouth. This was followed the next day by an increase in salivation, but the patient, having work to do, was out in the rain for several hours. On the third day his gums and tongue became very painful, and saliva poured from each side of his mouth. Feeling very weak, aching in every joint and somewhat nauseated, he became alarmed and summoned a physician. On this day I was called in consultation, and found the patient very much weakened; severe diarrhea, aching in joints, and soreness of the mouth were his chief complaints. Saliva was dripping from the mouth. There were two black gangrenous streaks, one on each side of the tongue, and several black gangrenous areas on the inner sides of the gums. The entire tongue and mucous membranes were much inflamed. On the fourth day the black streaks on the tongue

were increasing, and several small gangrenous areas were noticed on the buccal mucous membrane. The throat was red and swollen, and the patient showed marked tenderness over the jaws. The odor from the mouth was exceedingly offensive.

The only treatment that had been given was a mouth wash with compound solution of sodium borate (Dobell's solution) at frequent intervals.

Examination.—The patient was sent to the Baptist Hospital, where an examination revealed no signs of any physical disability other than the foregoing. Examination of the blood was negative for malaria. The blood count revealed: white cells, 8,000, with 64 per cent. polymorphonuclears and 36 per cent. small lymphocytes; the Wassermann reaction was negative. The specific gravity of the urine was 1.013; there was a slight ring of albumin and there were a few granular casts.

The temperature ranged from 97.6 to 98.6 F., being subnormal most of the time. Diarrhea was present throughout the disease, and salivation persisted till death. The pulse was very weak and irregular during the last three days.

Treatment and Course.—The gangrenous areas were cauterized with 50 per cent silver nitrate solution; eliminative treatment with magnesium sulphate was begun, as was also stimulative treatment with strychnin and digitalis. The patient was put on a soft diet. This treatment was continued throughout the illness, except that chromic acid was used at intervals in place of the silver nitrate to cauterize the gangrenous areas. Cauterization was carried out twice a day.

On the fifth day the gangrene continued to spread, involving the entire upper and lower gums, with several gangrenous spots on the soft palate. The condition became progressively worse; there was gangrene of nearly the entire inner surface of the mouth, and the teeth became loosened and painful to the touch. The patient's general condition also became very grave, with a rapid, irregular pulse, weakness and complete loss of appetite; he became very restless and finally sank into semiconsciousness and died on the seventeenth day.

During the course of the illness, especially during the last few days, large gangrenous sloughs came from the inner surface of the mouth, sometimes hanging down into the esophagus, causing the patient almost to strangle. Before his death the only tissue in the mouth that was not gangrenous was a small strip in the middle of the tongue, about 1 by 6 cm., posteriorly. The gangrene was moist, and extended deep into the tissues underlying the mucous membrane.

CASE 2.—*History*.—L. G., a white man, aged 18, a farmer, of moderate habits, had had malaria when he was 5 years old, and his physician gave him a dose of calomel. The following day he became severely salivated. His condition became progressively worse, with weakness, diarrhea, salivation, and finally gangrene of the entire inner side of mouth. This condition lasted about three weeks, at which time the patient began to improve, and by the end of two months he was able to get out of bed. During the course of the illness his mouth was extremely sore and inflamed, with a profuse saliva. Nearly the entire right cheek sloughed away, and all but one or two teeth became loosened and fell out. The patient gradually improved, but because of soreness was unable to open his mouth. Later, scar tissue formed, making it impossible for him to open his mouth at all. From the time of his recovery till the present time he had fed himself through a small space, where a tooth had fallen out.

Examination.—On entrance to the Charity Hospital, the patient was poorly nourished and poorly developed. There were no physical disabilities other than the following: The patient was unable to open the mouth at all. On the right side of face there was a hard scar, circular in outline, involving the entire right cheek. It was adherent to the bony structures underlying it. There seemed to be bony union between the inferior and superior maxilla on the right side. The condition of the condyles could not be determined, as the scar made any motion of the condyles impossible. The inner side of the mouth could be seen only by passing a cystoscope

through the space left by the absence of a tooth. The exact condition could not be made out, but there seemed to be very little mucous membrane left, there being an excessive amount of scar tissue in all parts of the mouth. The tongue appeared normal. Roentgenographic examination revealed a bony formation between the upper and lower jaws on the right side, but did not show the condition of the condyles satisfactorily.

Operation and Findings.—A plastic operation was performed to cover up the cheek and to get motion in the jaws. Only the pathologic condition will be described here, as it is too early to give the end-results of the operation. I may say here, however, that after operation the mouth could be opened to the extent of about 1 inch. A flap from the neck was turned upward to cover the defect in the cheek. Mucous membrane was transplanted in various places in the mouth.

There was a very ugly formation of scar tissue, taking in the entire right side of the cheek and firmly attached to the bony structures underlying it; the lips and corner of the mouth on the right side were absent. The mucous membrane on the under surface of the lips was gone, and the lips were adherent to the gums. Thick scar tissue held the mouth firmly closed. The entire buccal mucous membrane had been replaced by scar tissue. The tongue was bound to the floor of the mouth by bands of scar tissue.

The inferior and superior maxillary bones were strongly united by bony union. The floor of the right antrum had entirely sloughed away, the inferior maxilla forming its floor. A few teeth still remained in front, the right lower canine, one bicuspid and the right upper first molar. These were very much distorted and did not come in contact, but overlapped and pressed firmly against the opposite gums. The condyles were not involved.

COMMENT

These are the two most severe cases that have come under my observation in a relatively short time, though a number of milder cases of salivation have been seen. It surely seems time for general practitioners to take these conditions into consideration and to discontinue the promiscuous use of calomel as a cathartic.

I believe I am safe in saying that calomel is misused more than any other drug, especially in the Southern States. There are certain sections in the South where calomel is used in 90 per cent. of all diseases. Many practitioners continue to administer calomel for its effect on the liver, in spite of the fact that all standard textbooks on pharmacology teach that it has no action on this organ. As recently stated: "Calomel, being insoluble in the mouth and the stomach, passes through without affecting them in transit. . . . As soon as the calomel enters the intestine, it is attacked by the alkaline pancreatic and intestinal juices, which decompose it into mercury and yellow mercuric oxid. The latter dissolves slowly and incompletely in alkaline intestinal fluid. The small quantity of mercuric ions thus liberated excites peristalsis. . . . We are certain now that the action of calomel as a cathartic is simply a mechanical irritation due to the metallic mercury liberated, and that it has no action on the liver.

In the South calomel is widely used, every family using it, every druggist prescribing it, and, unfortunately, the majority of physicians using it, and allowing the laity to labor under the wrong impression that it cleans the liver in "bilious disorders" (this term being applied when no other diagnosis is made). We as physicians should strive to correct this false impression. There are certainly many efficient cathartics which are less dangerous.

857 North Jefferson Street.

CANCER OF THE CERVIX AND ITS TREATMENT

REPORT OF CASE

ROBERT M. LEWIS, M.D.

BALTIMORE

If all cases of uterine cancer could be seen in their incipience, and appropriate treatment given, the end-results would be brilliant. I herewith summarize the history of a case of cancer of the cervix which is interesting because it is the earliest case of the kind that I have seen.

REPORT OF CASE

History.—J. A. E. M., woman, aged 48, married, primipara, referred, June 15, 1916, by her family physician, Dr. Roland Fisher, Denton, Md., complained of uterine hemorrhage. A working diagnosis of very early operable cancer of the cervix was made. The final diagnosis was squamous cell carcinoma of the cervix. The patient had suffered with a constant bleeding from the uterus for the last one and one-half years. Her clothes were saturated with blood, requiring frequent changing every day. She was unable to tell whether she had menstrual periods or not, as the flow of blood was so continuous and free. Some loss of strength was also noted.

Examination.—There was no loss of weight and no pain or discomfort anywhere. There were no local symptoms referable to the bladder or rectum and no indigestion or cough. The general physical, as well as the other routine examinations, revealed nothing to contraindicate operation. The abdominal examination was entirely negative. No glands were palpable in the inguinal regions. Pelvic examination revealed a moderately relaxed outlet. The cervix was small and firm; from the external os a small bud of bleeding granular tissue protruded. This was removed with forceps for microscopic examination. (A frozen section cut within a few minutes of its removal showed that this was squamous cell carcinoma.) The body of the uterus was in good position, normal in size and shape, and freely movable. The ovaries were normal. The broad ligaments were not infiltrated.

Operation and Results.—I performed an abdominal pan-hysterectomy, June 17, 1916, the parametrium and paracervical tissues being removed widely. No enlarged glands were found. Convalescence was uneventful as one would expect, and the patient has remained well to this day.

COMMENT

The area of disease was tiny. The growth had become pedunculate, and most of it was removed by the original curettage. The disease found in and beneath the cervical mucous membrane measured about 1 cm. across. Further sections of the rest of the cervix revealed no other involvement. No disease was found in the parametrium.

Proverbially, "hindsight is clearer than foresight." Of course, if one could be sure in such a case that the size of the surface growth represented the extent of the disease, and that the latter did not burrow back widely into the cervical tissue, an amputation of the cervix, or even in this exceptional instance, a local cauterization, would be quite sufficient to effect a cure.

Unfortunately, until one has an extirpated specimen in one's hand, and, indeed, even then, one cannot tell how far a cancer may extend into the neighboring and apparently healthy parts.

I have often recalled a regrettable instance in which I amputated a cervix that appeared to be hypertrophied, but not the seat of a carcinoma. Examination of the specimen after removal disclosed an early squamous cell cancer well up in the cervical canal and apparently removed in toto. In spite of the fact that

the amputation seemed well wide of the disease. I urged the patient to submit to a radical panhysterectomy. She refused to consider it, and later died of cancer.

Another typical instance was that of a patient examined by a well-known gynecologist in whom the disease appeared in a plaque just above the os, measuring only 1 or 2 cm. across its surface. The cervix was not enlarged. Curetting, however, proved that it was entirely honeycombed with carcinoma.

Occasionally, a radical hysterectomy is not possible on account of the general condition of the patient. In such a case (as yet unreported) the patient was operated on by Dr. P. McC. Keating, in 1914. After performing a high cervical amputation, Dr. Keating discovered a very early cervical cancer. Nothing further was done, since to subject the woman to a radical operation would have been to court disaster, and no radium was available. It is gratifying to find that now, nearly five years after operation, the patient remains well—a living evidence of the surgeon's good judgment.

THE IDEAL TREATMENT

What now constitutes the ideal treatment of this type of case? We all remember the old rule of table-manners to the effect that "all things that can be eaten with a fork must be eaten with a fork." Ten years ago this might have been parodied to read: "All patients with cervical cancer that can be operated on, must be operated on."

During the last few years there has been a great increase in experience in the use of radium, which has established it in all cases as a formidable rival of the accepted Wertheim operation. The high mortality of the latter—even in most skilful hands—as well as its failure to effect a permanent cure in the great majority of the extensive, though still possibly operable, cases of cervical cancer have almost or quite persuaded many that it should be given up, and treatment with radium substituted.

Kelly, Burnam, John Clark, Ransohoff and others believe that a very high percentage of early cervical carcinomas can frequently and quickly be destroyed with radium alone. This is quite certainly true. My own opinion is that in this kind of case there is an excellent chance of cure either by the use of radium or by an operation well performed, but that the best chance is given by first treating the condition in the early cases thoroughly with radium, and then performing the usual wide abdominal panhysterectomy.

I do not believe that the results will be so good if the procedure is reversed, i. e., if the operation precedes the use of the radium. Before operation we are able to place the radium high up in the cervix close to the parametrium, while after it the vagina is shortened and the radium cannot safely be placed near the area of danger. In the case of early cervical cancer, operation should be comparatively easy and the mortality correspondingly low.

Given an operable but extensive cancer of the cervix, I believe our best chance of cure lies in the use of radium alone. Even if the mass shrinks to small proportions after radiation, the safest course is not to operate but to depend on further heavy treatments with radium.

Finally, when confronted with an inoperable cervical cancer, I do not believe that the use of any of the

palliative measures, such as slow heat or acetone, are to be considered, as the results of none of them are even comparable with those obtained by the intelligent use of a sufficient quantity of radium. By it the great majority of patients in whom the disease is distressingly extensive can be tremendously improved, and some even cured.

1418 Cutaw Place.

Clinical Notes, Suggestions, and New Instruments

A CASE OF COMPLETE VOLVULUS OF THE ENTIRE MESENTERY

WALTER D. WISE, M.D., BALTIMORE

REPORT OF CASE

Mrs. X, admitted to the hospital, Oct. 31, 1919, had been operated on two years previously in another city for pelvic trouble, but had not entirely recovered, having some abdominal discomfort and, at various times, attacks of severe pain and vomiting. On the day before admission she was seized with an attack more severe than usual and grew progressively worse, vomiting was constant, the pain was severe, and constipation was complete. She was operated on in about thirty hours after the beginning of this attack. An incision to the left of the previous scar gave entrance into the free abdomen and showed considerable straw-colored fluid and a loop of distended intestine. Under the scar was an intestinal coil tightly adherent to the parietal wall and containing in its wall a rather firm mass; running from this mass there were two bands, one of which was causing the obstruction. Both were released, and the distended and discolored loop began immediately to improve in appearance. The adherent section of the bowel was easily freed, and could then be brought up into the field. It was seen that a mass about the size of an egg was embedded partly in the intestinal wall and slightly in the mesentery. By tedious dissection it could be removed in its capsule without irreparable damage to the intestinal wall. The peritoneal coat of the intestine was sutured satisfactorily and the abdomen closed. During the dissection the diagnosis of the tumor had been suspected, and a section revealed that the suspicion was correct: it was a gauze sponge. Convalescence was smooth and satisfactory for seven days, when there was an attack of pain and some vomiting, which were relieved by an enema. Three days later, the patient had a similar but more violent attack beginning in the late afternoon. I did not see her until the next morning. She had been vomiting persistently and was considerably shocked or prostrated. Pain was of moderate degree, and the bowels had moved in the early morning as a result of an enema. Because of the character of the vomiting and her general appearance, an immediate operation was advised. Exploration revealed adhesions of the intestine to the parietal wall and almost countless numbers of viscerovisceral adhesions. The small intestine was moderately distended and very dark in color. On separation of any of the adhesions, there was profuse venous bleeding. Even with the most careful handling and gentleness, hemorrhage soon became a factor to be considered. It seemed impossible to locate the cause of the obstruction. However, by patient dissection, with considerable loss of blood, a view was finally obtained. It could be made out that there was a herniation of a large section of intestine through an arch made by two adherent loops, but reduction of this did not change the appearance of the bowel. It was then seen and could be demonstrated to onlooking surgeons that there was a torsion of the mesentery of at least one complete turn, probably a turn and a quarter from right to left. The adhesions were by this time freed sufficiently to permit of rotation of the mesentery, and as soon as this was done the intestine resumed its normal color. There were a considerable number of thrombosed vessels in the mesentery, but

as the subsequent history disclosed, not enough to cause trouble. As soon as the torsion was relieved, the venous bleeding ceased. The abdomen was closed except for a small drain. Salt solution was given during the operation and subsequently. The patient had a surprisingly calm convalescence, and left the hospital, December 6, restored to health.

COMMENT

Torsion of the entire mesentery is a rare condition. In 1903, Dr. George Tully Vaughan¹ reported a case of his own seen at postmortem, and reviews the literature, abstracting the histories of twenty other cases; of these, seventeen came to operation, with four recoveries—a mortality of 76 per cent.

In 1914, Weible² reported a case in which the patient recovered, and gives a summary of sixty-six other cases, including those reported by Vaughan; of these there were twenty-two recoveries.

In 1917, Vaughan³ reported another case of twisting of the whole mesentery, with a loss of the patient on the table.

In 1917, Garrow⁴ reported a case seen at necropsy in which there was a twist of three and one-half turns, or 1,260 degrees.

According to these figures, the case herewith presented is the seventieth to be reported, and the twenty-third in which the patient recovered.

1800 North Charles Street.

QUININ IN INFLUENZAL PNEUMONIA

A. J. CAFFREY, M.D., MILWAUKEE

During the epidemic that began in the fall of 1918, I used quinin sulphate in influenza and influenzal pneumonia chiefly for its diaphoretic and antifebrile effect. From a clinical study at that time, I found that patients could take liberal sized doses of from 10 to 20 grains every four hours the first day, and 5 grains every four hours during the course of the disease, without showing marked signs of cinchonism.

Since reading Cohen's¹ article on the treatment of the pneumonias, I have been using quinin hydrobromid, as I found it difficult to get the dihydrobromid, which he recommended as the preferable salt; however, from a study of the effect of this salt, the hydrobromid, it seems to have given more satisfaction than the sulphate, in that the patients seemed more restful, it reduces the fever promptly, and in most instances keeps it under 100 F.; and in hospital cases in which blood counts were repeatedly made, I found usually following the first large dose a marked leukocytosis; I never found a real crisis in any of the cases in which it was used. This may not be due entirely to the effect of the drug, because, most of the influenzal pneumonias being bronchial and lobular in type, the course is by lysis rather than by crisis, which occurs usually in the lobar type.

I gave 25 grains for the first dose, 10 grains for the second dose, and continued throughout the course of the disease with 5 grains every four hours; and from my limited study of its effect, I agree with Dr. Cohen that the quinin salts combat bacterial poisons and tissue poisons, and give clinical evidence that they are pneumococcicidal if given in sufficient doses. I have never had a complaint of quinin amblyopia or marked tinnitus aurium and head noises which patients usually complain of when the drug is used in other troubles. Since quinin is said to be eccholic, I do not know what effect it might have in pregnancy accompanying pneumonia, as none of my patients were pregnant during their illness.

I have never felt that the emergency of the effect of quinin in any of my cases justified the method of administering it intravenously or intramuscularly. It seems to me that the disturbance and pain incident to this method of administration would have a bad effect on any one ill with pneumonia, and there is always a possibility of abscess formation with necrosis when a large dose is given intramuscularly.

COMMENT

This treatment, quinin being the chief drug used in combating the disease, with other auxiliary drugs, such as digitalis, atropin and pituitary extract, good nursing, nourishing diet, fresh air, etc., was followed out in twenty-seven cases of influenzal pneumonia with only one death. It is understood, of course, that the number is too small to establish the specificity of quinin. The low mortality in my series may have been accidental, but it is the lowest I have ever had in the same number of cases in other years.

ICE-BOX FIXATION IN THE WASSERMANN TEST FOR OFFICE PRACTICE

OSCAR BERGHAUSEN, B.A., M.D., CINCINNATI

A year ago I¹ advocated the method of ice-box fixation in the Wassermann test, using simple alcoholic extract of syphilitic organs as antigens. Further experience has convinced me that this method is satisfactory in the examination of a large number of serums for diagnostic purposes. The results obtained are usually either strongly positive or negative when the fixation is carried out at a temperature not exceeding 4 C (39.2 F.). Slight inhibition in hemolysis is unusual and, when obtained, is always recorded as negative. Serums obtained from patients not syphilitic always give a negative reaction.

When cholesterinized antigen is used in the original Wassermann reaction with fixation in the water bath at 37 C. (98.6 F.), more positive reactions are obtained than with simple alcoholic extracts as antigen and fixation in the ice box over night; but serums obtained from patients definitely not syphilitic may give a positive reaction with cholesterinized antigen, and for this reason the result is not always reliable for diagnosis. When the serum has been obtained from a syphilitic patient under treatment, some attention may be paid to a positive result obtained only with cholesterinized antigen, since this reaction is the last to disappear.

After examining about 3,000 serums at the Cincinnati General Hospital, which has a modern refrigerating system, the problem arose as to how it might be possible to secure a constant low temperature of 4 C. or less by a simpler method, in order to make the method of ice-box fixation practical for a smaller laboratory. After a little experimentation I found that the "Frigidaire" refrigerator, manufactured in Detroit, was satisfactory for this purpose. It is run by electricity at an expense of less than \$5 a month, and can be set to maintain a constant temperature of 4 C. in the lower chamber. It has been my custom to place the rack containing the test tubes in the lower left hand chamber, cover them with a sterile towel, and remove them about sixteen hours later, finishing the reactions by adding the requisite amount of sheep corpuscles and amboceptor and then placing the racks in a water bath at 37 C. Occasionally, serums which have anticomplementary properties, especially when they have been preserved for three or four days, will show a lack of hemolysis in the control tube containing no antigen. Such serums must be tested again, the standard Wassermann technic of fixation in the water bath at 37 C. for one hour being used. Usually it will be found that such serums give a strongly positive reaction by this method.

As a routine, two alcoholic extracts of syphilitic organs are used as antigens. It is not necessary to employ the Noguchi acetone insoluble fraction of lipoids as antigen, for simple alcoholic extracts give better results when the method of ice-box fixation is used. Comparative results, with the same antigen and the same serums, have shown this method to be more satisfactory than the Hecht method, with active serum. The reactions are always either distinctly negative or positive; slight inhibition in hemolysis occurs infrequently. Results are thus recorded: Wassermann (original) negative or positive; Wassermann (Frigidaire) negative or positive.

19 West Seventh Street.

1. Vaughan, G. T.: *Am. J. M. Sc.* **125**, 1903.
2. Weible: *Surg., Gynec. & Obst.* **19**: 644, 1914.
3. Vaughan, G. T.: *Virginia M. Semi-Month.* **22**: 89 (May) 1917.
4. Garrow, R. P.: *J. Roy. Army Med. Corps*, December, 1917.
1. Cohen, S. S.: *Present Status of the Definite Treatment of the Pneumonias*, *J. A. M. A.* **73**: 1741 (Dec. 6) 1919.

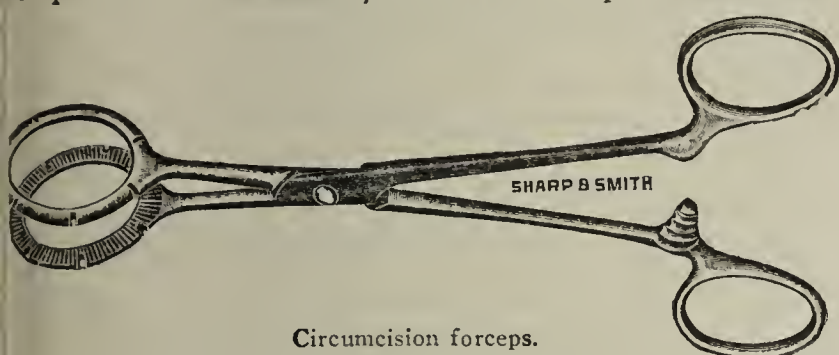
1. Berghausen, Oscar: *Superiority of the Method of Ice-Box Fixation in the Wassermann test*, *J. A. M. A.* **72**: 996 (April 5) 1919.

CIRCUMCISION FORCEPS

MYER N. MOSKOVICH, M.D., PHILADELPHIA

The circumcision forceps here illustrated consist of a pair of handles, not unlike those of the ordinary hemostatic forceps, terminating in circular jaws corrugated on their inner surfaces and having seven equidistantly placed indentations to permit the passage of sutures while the forceps are still in place. Various sizes may be had, and they are best employed on older children and in adults when no edema or swelling of the prepuce exists.

The forceps may be used with any of the various methods of performing a circumcision. The blades are opened and the ring is passed over the penis with the handles pointing toward the head of the patient. A dorsal slit is now made and the ring brought up to the level of this slit, with the handles between the cut edges of the prepuce. The latter is then turned over the ring, the second ring passed over the head of the penis and the forceps clamped. The projecting prepuce is cut with a knife or curved scissors, sutures are inserted at the points of indentation, and the forceps are removed.



Circumcision forceps.

It will be difficult to convince the reader of the full value of this little instrument, because of the fact that the doing of a circumcision is already such a simple procedure that further simplification hardly seems possible. Certain facts, however, remain:

1. The time taken to perform the operation is diminished considerably.
2. Perfect coaptation with earlier union and a minimum amount of scarring results.
3. The procedure is practically bloodless, all bleeding points being checked, through mere pressure, before the forceps are removed.

Jefferson Medical College.

A NEW USE FOR COVER GLASS FORCEPS

RALPH WALDO PLACE, M.D., SOMERVILLE, MASS.

Cilia forceps are not what they ought to be. I have tried several and I have bent and filed them; but they will not hold the slippery hairs in trichiasis. Some time ago I gave them up in favor of ordinary spring forceps, the kind opticians use in setting up eyeglass frames and known as tweezers. These served me well, and I still use them sometimes in the "corners"; but one day after working a long time on a particularly difficult case I happened to try a pair of cover glass forceps. These grasped the hairs better than anything I had ever tried, and I have used them satisfactorily ever since. Of course, they should be used only for this work, and they should be carefully sterilized.

165 Medford Street.

A Case of Quadruplets.—I recently delivered a woman, after a six months' pregnancy, of quadruplets. A reference to statistics shows that they occur once in every 371,126 deliveries, and for this reason I thought it worth while to publish my experience. This was a case of multiple impregnation of a single ovum, as there was a common chorion. Each fetus was within its own amniotic sac, and all were males. The placenta, if not a common one, was so anastomosed that it could not be differentiated. All the fetuses were dead at the time of delivery.—CHARLES E. FALLET, M.D., De Soto, Mo.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

LACTIC ACID-PRODUCING ORGANISMS AND PREPARATIONS (See New and Nonofficial Remedies, 1920, p. 156).

BACILLUS BULGARICUS-SQUIBB.—A pure culture in vials, of the *Bacillus bulgaricus* type A, the *Bacillus bulgaricus* type B (*Bacillus acidophilus*) and *Bacillus paralacticus*, each vial containing 12 Cc.

Actions and Uses.—*Bacillus Bulgaricus-Squibb* is designed for internal administration, topical applications in nasal and throat affections and for direct application to abscesses, wounds and old ulcers. See general article, Lactic Acid-Producing Organisms and Preparations, New and Nonofficial Remedies, 1920, p. 156.

Dosage.—The contents of one tube daily after meals or before retiring. The culture is marketed in packages of twelve vials. The culture should be kept in a cold place, and is not guaranteed beyond the date stamped on the package.

Manufactured by E. R. Squibb & Sons, New York. No U. S. patent or trademark.

POLLEN EXTRACT PREPARATIONS (See New and Nonofficial Remedies, 1920, p. 226).

POLLEN ANTIGEN-LEDERLE (SPRING TYPE).—A liquid obtained by extracting equal parts by weight of dried pollens of timothy, red top, June grass, orchard grass, sweet vernal grass, meadow foxtail, meadow fescue, rye and wheat by a vehicle of 67 per cent. glycerine and 33 per cent. saturated solution of sodium chloride. It is standardized so that each Cc. contains 14,000 pollen units; a pollen unit has been arbitrarily chosen by Koessler, Noon and Freeman as the equivalent of one-millionth gram (0.000001 Gm. or 0.001 Mg.) of pollen. The Hygienic Laboratory has prescribed no U. S. Standard of Potency. The antigen after preparation is made into fifteen different dilutions by the addition of a proper amount of the glycerine-sodium chloride solution diluent.

Actions and Uses.—See general article, Pollen Extract Preparations, New and Nonofficial Remedies, 1920, p. 226.

Dosage.—The product is supplied in fifteen different doses. Each dose consists of 0.1 Cc. of the respective dilution. Accompanying each dose is a vial containing 9 Cc. of sterile water with which to make the pollen antigen of isotonic strength immediately before administration. For prophylaxis, the complete series (doses 1 to 15) containing progressive amounts of pollen protein should be given, beginning about six weeks before the hay-fever season. For treatment of an actual attack of hay-fever, fewer doses are generally sufficient.

Manufactured by the Lederle Antitoxin Laboratories, New York. No U. S. patent or trademark.

Pollen Antigen-Lederle (Spring Type) Series A.—Marketed in packages of five vials containing for each consecutive dose (numbers 1 to 5 inclusive) 2.5, 5, 10, 20 and 25 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Spring Type) Series B.—Marketed in packages of five vials containing for each consecutive dose (numbers 6 to 10 inclusive) 30, 50, 75, 100 and 150 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Spring Type) Series C.—Marketed in packages of five vials containing for each consecutive dose (numbers 11 to 15 inclusive) 250, 375, 500, 750 and 1,000 pollen units, respectively, and five vials of sterile water with which to make the proper dilution of each dose.

Pollen Antigen-Lederle (Spring Type) Complete Series.—Marketed in packages containing 15 doses as described in Series A, B and C above.

Pollen Antigen Immunity Test—Diagnostic Test for Spring Type Hay-Fever-Lederle.—Consists of 0.01 Cc. of No. 15 dilution of pollen antigen-Lederle (spring type). It represents 100 pollen units of the combined pollen protein. May be used cutaneously or intradermally.

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SATURDAY, APRIL 24, 1920

The postal situation is well known by all our readers. Matter sent by parcels post, and periodicals, have been meeting with lengthening delays in transmission. More recently delivery of even first-class mail has been delayed. This item is published to explain delay which may occur in the receipt of THE JOURNAL. The copies are delivered at the Post Office at the usual time each week, and any delay in their receipt must be charged to the postal conditions. It is hoped that our readers will allow for the present difficulty and not request additional copies until sufficient time has elapsed to make sure that missing copies will not be received.

EXPERIMENTAL LOBAR PNEUMONIA

Many attempts have been made to produce lobar pneumonia experimentally in animals, but only with occasional and partial success, and under experimental conditions not encountered in the spontaneous disease in man. In order that experimental results may be of the maximum value, a method is required by which lobar pneumonia can be regularly produced in animals, without otherwise modifying their physical condition or surroundings, so that the clinical, bacteriologic and pathologic changes of all stages of the disease may be studied and compared with the disease in man. The work of Blake and Cecil¹ at the Army Medical School, on the experimental production of lobar pneumonia in monkeys by the intratracheal injection of pneumococci, appears to fulfil these requirements, and furnishes an enlightening chapter in experimental medicine.

In a series of thirty-seven normal monkeys, lobar pneumonia was produced in thirty-two; two others died of pneumococcus septicemia; and in three which received small doses, no disease was produced. Pneumococci, in amount from 1 to 0.000001 c.c. of an eighteen hour culture, were introduced into the lumen of the trachea by means of a sterile needle inserted between the cartilages below the larynx. In most of the animals Type I pneumococcus was used, but pneumonia was also produced by Types II, III and IV.

Following the inoculation, blood cultures, leukocyte counts and observations of the temperature, clinical course and physical signs were made. Symptoms of illness usually appeared in from twelve to thirty-six hours after inoculation. The report is accompanied by protocols of a number of the cases. The temperature curves, often with critical drops on the seventh to the ninth day, were similar to those seen in lobar pneumonia in man. Blood cultures showed varying grades of pneumococcemia, which in nonfatal cases usually disappeared before the crisis, but in some of the severer infections increased enormously before death.

In several respects the features of experimental lobar pneumonia in monkeys showed a parallelism with those of the disease in man which is not only of great experimental interest, but opens the way for the determination of a number of clinical questions related to lobar pneumonia, the answers to which till now have been impossible or largely matters of opinion or surmise.

The finding of pneumococci in the blood within six hours after the introduction of the organisms into the trachea, and before the signs of pneumonia appeared, will go far toward clarifying our conception of the mode of invasion in pneumonia, whether hematogenous or bronchigenic, and furnishes apparently clear evidence in favor of the bronchigenic origin of the disease. This view is further strengthened by the failure of intravenous or subcutaneous injections of pneumococci to produce pneumonia, and by the observation that even when the intratracheal route was employed in monkeys, with lobar pneumonia usually resulting, there were occasional instances in which a pneumococcus sepsis was produced without clinical or post-mortem evidence of lobar pneumonia.

By examining the animals early (three hours) after intratracheal inoculation, Blake and Cecil were able to demonstrate the penetration by pneumococci of the bronchial wall near the hilum. The further spread of pneumococci, as observed in other animals in the series, was apparently by way of the interstitial tissue and lymphatic system of the lung, and hepatization began centrally and proceeded toward the periphery of the lung. The pathology of the pneumonic lesion produced in the monkey was identical with that seen in lobar pneumonia in man.

The preliminary rise in leukocytes in monkeys after inoculation was followed by a fall, the rapidity and extent of which was proportional to the severity of the disease and the degree of pneumococcal invasion of the blood. In the less severe cases, the preliminary fall in leukocytes was followed by a rise, accompanied by decrease in the number of pneumococci in the blood until the blood became sterile, usually several days before crisis. This relation of leukocytosis to severity of disease, in which failure of leukocytosis was indicative of serious prognosis, affords experimental sup-

1. Blake, F. G., and Cecil, R. L.: J. Exper. Med. 31: 403 (April) 1920.

port of the clinical observation in man that, in general, the prognosis in patients showing a moderate leukocytosis is better than in those in whom there is no leukocytosis or a leukopenia.

Instances of empyema, delayed resolution, pericarditis and persistent pneumococcal sepsis occurred in monkeys just as in the natural disease in man. Monkeys inoculated in the throat and nose with pneumococci did not develop lobar pneumonia; although the organisms persisted for many days, whereas inoculation of the lower respiratory tract regularly produced the disease. As the authors point out, these facts indicate that in monkeys, something besides the mere presence of virulent pneumococci in the upper respiratory tract is necessary for the development of pneumonia; and presumably the same is true in man. The rôle of contact with the sick was shown in one experiment, in which one animal of several exposed to monkeys sick with pneumonia developed lobar pneumonia.

In addition to the elucidation of the mechanism of infection in pneumonia, this demonstration of a method whereby lobar pneumonia may be produced regularly under controllable experimental conditions is perhaps of still greater importance in that it affords opportunity for the experimental study of prophylactic immunization against pneumonia, and for determining the actual value of antipneumococcic serums in the cure of the developed disease. We shall await the results of these investigations with interest.

SCURVY NOT A BACTERIAL DISEASE

Acquired beliefs are not easily given up when, once they have become deeply rooted in the customary thought and writing of a period. This fact has often been illustrated by the tenacity with which medical men tend to cling to traditional theories that have been tried by the tests of science and found wanting. It was a long time before the version of the etiology of malaria now current became accepted by every physician. Before the possible significance of insects in the transmission of disease became common knowledge, the idea of ascribing real bodily danger rather than mere temporary discomfort to the seemingly unimportant mosquito made slow headway.

On the other hand, when once some novel type of agent has been clearly demonstrated to be concerned in the causation of hitherto unexplained diseases, it soon tends to achieve a degree of popularity that may subsequently actually become detrimental. Thus, when bacteria were at last universally admitted to be potent causes of pathologic changes in man, bacteriology was promptly called on to explain many of the unsolved mysteries of disease. For centuries, scurvy was regarded as a disease due to dietetic errors. Then came the time when the theories of the etiology of scurvy began to include that of a bacterial origin. Fol-

lowing Coplans,¹ Jackson² and her collaborators in this country have offered some experimental support for this view. Thus they found coccus-like bodies in microscopic sections of lesions in scorbutic guinea-pigs, and they isolated gram-positive and gram-negative organisms from the diseased joints, muscles and lymph nodes of these animals. Pure strains of these bacteria introduced into guinea-pigs gave rise in most instances to hemorrhagic and other lesions in the bones, joints, muscles, lymph nodes and organs.

It is not difficult to believe, however, that animals in a scorbutic condition due to dietary deficiencies may readily be susceptible to a secondary bacterial invasion, just as terminal infections in many chronic conditions have no direct relation to the primary disease. Of late the study of experimental scurvy has been extensively prosecuted in England and America, with the result that the disease can now be evoked, averted or cured with considerable precision by purely dietary control. This fact of itself negatives the probability that bacterial infection is a prime factor in the genesis of scurvy. The products of putrefaction have also been charged with responsibility for the appearance of scurvy. Torrey and Hess³ have concluded, however, that scurvy, both of guinea-pigs and of infants, is not associated with an overgrowth of putrefactive bacteria in the intestinal tract.

The most convincing evidence against the bacteriologic hypothesis has been offered by Givens and Hoffmann⁴ from the Research Laboratories of the Western Pennsylvania Hospital, Pittsburgh, who have made bacteriologic examinations of the blood and tissues of scorbutic animals. Blood from the latter, regardless of the diet producing the disease, has been found to be sterile. The enlarged front joints of guinea-pigs developing scurvy on oats alone were sterile; this was likewise true in the majority of cases of guinea-pigs developing scurvy on other special diets. Occasionally, staphylococci or diplococci were isolated; but these could not be made to produce scurvy when introduced into healthy guinea-pigs. The intestinal flora likewise showed no differences between the scorbutic and non-scorbutic animals which could explain the genesis of the disease.

With the bacteriologic hypothesis left without tenable scientific confirmation, with McCollum's theory that chronic constipation is a decisive factor abandoned,⁵ and with an abundance of experimental evidence in favor of the view that dietary deficiencies play the decisive part in the genesis of scurvy, the current

1. Coplans, M.: *Tr. Epidemiol. Soc.* **23**: 1, 1904.

2. Jackson, Leila, and Moore, J. J.: *J. Infect. Dis.* **19**: 478 (Sept.) 1916.

3. Jackson, Leila, and Moody, A. M.: *Ibid.* **19**: 511 (Sept.) 1916.
3. Torrey, J. C., and Hess, A. F.: *Proc. Soc. Exper. Biol. & Med.* **15**: 74, 1917-1918.

4. Givens, M. H., and Hoffmann, G. L.: *Preliminary Observations on the Relation of Bacteria to Experimental Scurvy in Guinea-Pigs*, *J. Biol. Chem.* **41**: xxxiii (March) 1920.

5. Cohen, B., and Mendel, L. B.: *J. Biol. Chem.* **35**: 425 (Sept.) 1918. Chick, H.; Hume, E. M., and Skelton, R. F.: *Biochem. J.* **12**: 131, 1918. Hess, A. F., and Unger, L. J.: *J. Biol. Chem.* **35**: 479 (Sept.) 1918. Harden, A., and Zilva, S. S.: *Biochem. J.* **12**: 270, 1918.

studies on antiscorbutics are placed on a more stable foundation. It matters little that they have in the main been tested primarily on animals, notably the guinea-pig and the monkey; for the essential identity of the disease in these animals and in man has been generally accepted by investigators.

MEDICAL ASPECTS OF THE JUVENILE COURT

The first juvenile court in the United States, as we are informed by Belden,¹ was established by the Illinois legislature, July 1, 1899. It marked the beginning of the juvenile court movement in this country. Previous to that time some states had provided for separate hearing of children's cases, but the Illinois law was the first serious attempt in the United States at modification of court procedure so far as it related to children. Shortly afterward, Colorado came to the front and passed a special juvenile court law, which has been a model for other states.

In general, the special modification of court methods which has been necessary in the development of the juvenile court has been based on the fundamental principle that the child is a ward of the court. One of the chief distinctions between the usual criminal procedure and the juvenile court procedure lies in the matter of evidence. The purpose of the court is not to discover whether a crime has been committed but rather to ascertain what were the underlying conditions that caused the commission of the crime. Were they physical, mental, social? Then comes the question as to what should be done with the culprit for the best interest of the people and of the child.

Obviously, the matter of first importance is the physical and mental status of the child, for these are intimately associated with what he is and how he became what he is. Furthermore, a knowledge of his family and personal history is equally essential to a successful rehabilitation. Such investigation requires special adaptability on the part of the court. The procedure may be regarded as extralegal. The problems presented require expert and special knowledge not usually available. To Illinois belongs the credit for introducing such practical study of children before the courts, by the establishment of the Juvenile Psychopathic Institute. Shortly afterward the Seattle juvenile court established a "department of social diagnosis," which is still maintained. Strangely enough, physical examinations are given much more generally than mental examinations. In thirteen courts, mental clinics are maintained as part of the court organization. An excellent plan is that of the Judge Baker foundation of Boston, which provides that a large proportion of children before the juvenile court are given thorough

physical examinations; their mental condition is thoroughly studied, and especially qualified investigators attached to the staff gather social data. All the information in a given case is then assembled and studied at a staff conference, and the diagnosis of the child's condition, and a recommendation as to the kind of treatment needed, is made by the director or his assistant. The group clinic idea is thus utilized to its utmost in proper placing of the child who may be either physically, mentally or morally deficient.

As a result of this work, some of the underlying causes of child delinquency and neglect are becoming more evident. The need for early recognition and treatment of abnormalities in physical, mental or moral development has been conclusively demonstrated. In a statistical table, Belden shows that there are now 246 courts, representing practically every state in the Union, which give some special attention to these problems. In fourteen states there was no report of mental examinations in clinics or by persons having special psychiatric knowledge. There remains, then, considerable need for improvement and for the establishment of uniform methods of study. The problem is a fundamental one for the community, and physicians may well lend their aid to its solution.

BEANS AND GROWTH

The modern chemistry of the proteins has profoundly modified some of the older tenets of nutrition. With the advent of a better knowledge of the digestion and disintegration of the proteins into amino-acids, and with an appreciation of the part which the latter play as the real nitrogenous nutritive units for the construction of protein in the body, new points of view have arisen. In constructive metabolism, at least, the physiologist must deal primarily with amino-acids, of which familiar proteins are known to furnish a varied assortment. Some of these are not essential in the sense that they must be furnished as such to the organism; for they can be synthesized by the living tissues. Other amino-acids, on the other hand, and perhaps a majority of those related to proteins, cannot be thus built up anew by animal structures; hence, so far as they may be indispensable, they must become available to the body in the food if the organism is not to suffer from a lack of such "building stones," as they have been called.

Information of the sort just referred to has served to explain why gelatin, for example, is not a "complete" protein from the nutritive standpoint, and why it cannot serve as the sole source of nitrogenous units in the body. Gelatin lacks in its chemical makeup certain of the amino-acids, without which protein cannot be built up in the body. Thus it lacks cystin, tryptophan and tyrosin. Other isolated proteins are known to be chemically defective in comparable ways.

In some instances it is a relative rather than an absolute shortage of some amino-acid component that limits

1. Belden, Evelina: Courts in the United States. Hearing Children's Cases, Pub. 65, Children's Bureau, U. S. Department of Labor, Government Printing Office, Washington, D. C., 1920.

the nutritive value of a protein. Osborne and Mendel,¹ for example, have furnished striking instances of the significance of this in actual nutrition experiments. One of the most impressive cases has just been elucidated by Johns and Finks² at the Protein Investigation Laboratory of the Bureau of Chemistry in Washington. The principal protein of the navy bean has been shown to be inadequate for growth even when an abundance of other needed foodstuffs is supplied in the ration. An explanation had been sought in the ready autrefaction of the beans, leading to supposedly harmful products in the intestine and thereby retarding growth. But Johns and Finks have ascertained that the protein of the bean is exceptionally deficient in its yield of the amino-acid cystin, an essential source of sulphur for the body tissues. When cystin or a cystin-yielding protein is added to the bean diet, growth at once becomes satisfactory, provided the beans are cooked. Why cooking is a significant factor in making the bean diets more ideal is not clear, unless the process renders the protein more readily digestible.

Under ordinary circumstances, of course, navy beans do not represent the sole source of protein, even for ardent "bean lovers"; they are supplemented by other protein foods. Nowadays, however, it occasionally happens that diets are extremely limited by intentional or accidental circumstances. Knowing the limitations of the navy bean, we can avert nutritive disaster, if it should be threatened through exigencies of the ration, by making good what the delectable legume lacks.

Current Comment

LOOK UP ITS RATING

Modern business has become so complex that it is no longer possible for those engaged in trade to know, firsthand, the financial responsibility of their prospective customers. The commercial agency is a natural development; it aims to supply the technical (financial) information which the conservative business man needs but is otherwise unable to get. When John Doe & Co. contemplates entering into business arrangements with Henry Roe & Son to a degree that involves financial obligations, it looks up Roe in the rating book of Dun or Bradstreet and probably calls for a special commercial report on the concern. These facts are so elemental and obvious as to be trite. The complexity of modern medicine, especially in the pharmacologic field, has made it a physical impossibility for physicians to know the scientific status of scores of pharmaceutical products put out under proprietary or brand names. It was recognition of this fact that brought about the creation by the American Medical Association of the Council on Pharmacy and Chem-

istry. This body of experts, serving without remuneration and reporting without fear or favor on the newcomers to the pharmaceutical world, places at the disposal of physicians unbiased information, free alike from prejudice or prepossession. As the commercial agency reports on the commercial probity of individuals and firms, so the Council on Pharmacy and Chemistry reports on what might be called the scientific probity of proprietary and unofficial pharmaceutical products. The commercial agency issues, at no small expense to its customers, rating books; the Council on Pharmacy and Chemistry issues, at a nominal price, "New and Nonofficial Remedies." The commercial agency, for a substantial fee, will furnish reports on business concerns; the Council on Pharmacy and Chemistry¹ will, without any expense to the profession, furnish reports on proprietary products used for the relief or cure of human ailments. The careful business man avails himself of the services of the commercial agency; there are financial interests at stake. The conscientious physician will avail himself of the services of the Council; there are, it may well be, lives at stake.

LONGEVITY IN THE UNITED STATES

The expectation of life or, better, the average duration of life at various ages and in different racial groups, has been a common theme of statistical inquiry. Improved and more exact methods of calculation, together with the accumulation of additional data, are, however, continually stimulating fresh studies in this field. A recent article by Forsyth² on the trend of longevity in the United States, although it deals only with the census records from 1890 to 1910, contains some important figures. In 1890 the expectation of life for a male native white of native parentage at 10 years of age was 56.1; by 1910 this had fallen to 54.1. At the age of 40 the expectation in 1890 was 32.8; in 1910, 29.9. In fact, in each age group and in both sexes the average expectation showed a notable loss for the two decades from 1890 to 1910. A large loss in expectation was also shown by the native white of foreign or mixed parentage. On the other hand, the foreign-born whites, especially the males, gained materially in the average duration of life during the same period. Forsyth emphasizes especially two points: first, the remarkable longevity enjoyed by native Americans of native parentage, which he considers probably unequaled anywhere else on earth; and second, the gradual loss of this superiority at a rate of about one year each decade. He seems inclined to attribute this "momentous retrogression" to certain unspecified "factors in the American mode of living"; but it seems evident that the conditions are very complex. The "native whites of native parentage" are being added to all the time from various racial stocks not perhaps as resistant as the original native stock. From decade to decade, therefore, the native whites of native parentage represent an ethnically different

1. Osborne, T. B., and Mendel, L. B.: *J. Biol. Chem.* **20**: 351, 1915.
2. Johns, C. O., and Finks, A. J.: *Studies in Nutrition, II, The Role of Cystine in Nutrition as Exemplified by Nutrition Experiments with the Proteins of the Navy Bean, Phaseolus Vulgaris*, *J. Biol. Chem.* **37**: 379 (March) 1920.

1. Write to the Secretary of the Council on Pharmacy and Chemistry, 535 North Dearborn Street, Chicago, Ill.
2. Forsyth, C. H.: *Quart. Pub. Am. Statistical Assn.* **16**: 495 (Dec.) 1919.

group. Whether the loss in expectation is due to some mingling of less resistant strains or whether the shortening in average duration of life is due to purely environmental factors can perhaps hardly be determined. The question is one that must be considered in connection with the fact that in recent years in this country the general mortality has increased disproportionately in the ages above 40. At all events, the bearing of the census of 1920 on the trend of longevity will be awaited with interest.

ENCEPHALITIS IN HORSES

There occurs an epidemic disease of horses, known as enzootic encephalitis, or Borna disease, which has been observed in many parts of the world, including the United States. This disease exhibits certain resemblances to lethargic encephalitis, which makes it of peculiar interest at the present time. Not only are the symptoms in some respects similar to those of the human disease, but also the pathologic anatomy, as described by Joest and Deegen,¹ is much the same as that of lethargic encephalitis. In both diseases there is an absence of recognizable anatomic changes outside the central nervous system, in which in each the conspicuous feature is a marked perivascular infiltration of small round cells, without polymorphonuclear infiltration or much involvement of the meninges. The vascular lesions are chiefly in the brain, the cord being much less involved. Numerous studies of the equine disease have left the etiology undetermined. While some have attributed it to an intoxication from infected food, several others have found cocci in the nervous tissues. A recent investigation of enzootic encephalitis in Argentina² has corroborated the previous anatomic studies and in addition has led to the isolation of a gram-negative diplococcus which produces what seems to be the same disease when injected subdurally into horses. In view of our complete lack of knowledge concerning the etiology of lethargic encephalitis, there is no little interest in this demonstration that a coccus, resembling somewhat the meningococcus, is capable of producing a marked nonsuppurative cerebral perivascular round cell infiltration, despite the fact that no such organism has been found in the human disease.

Association News

NEW ORLEANS SESSION

Sailing of S. S. Comas Cancelled

The Passenger Traffic Department, Southern Pacific Lines, advises that owing to labor disturbances at New York, it has been compelled to cancel the sailing of the *S. S. Comas*, which was scheduled to leave the port of New York, Wednesday, April 21, for New Orleans. Refunds may be secured on presentation of tickets at 165 Broadway, Room 2015, New York City, or if desired, the department will arrange for your trip to New Orleans by rail.

1. Joest and Deegen: *Ztschr. f. Infektionskr. d. Haustiere* 9:1, 1911.

2. Kraus, R.; Kantor, L., and Quiroga, R.: *Sobre la etiología de la meningo encefalitis enzootica (Enfermedad de Borna) de los equinos*, Rev. d. Instituto Bacteriológico del Departamento Nacional de Higiene 2: 239 (Oct.) 1919. For further reference see page 1198, this issue.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Beck in Los Angeles.—Dr. Emil G. Beck, Chicago, spoke before the Los Angeles Surgical Society, February 18, on "The Balance of Power in Immunity."

State Board Upheld.—A decision by the State Supreme Court of California has upheld the board of medical examiners in its action, two years ago, in suspending for one year the license of Dr. John K. Suckow, Los Angeles, on the ground that he had performed an illegal operation. The case was appealed to the higher court on the grounds that the board was not qualified to administer punishment and that the defendant had done nothing to merit suspension. Both of these claims were rejected.

State Society Meeting.—The annual meeting of the Medical Society of the State of California will be held at Santa Barbara, May 11, 12 and 13, under the presidency of Dr. Henry A. L. Ryfkogel, San Francisco, with headquarters at the Hotel Ambassador. Dr. Noble W. Jones, Portland, will discuss the "Prognosis After the Removal of Focal Infections;" Dr. Russell D. Carman of the Mayo Foundation, Rochester, will talk on the "Roentgenologic Aspect of Gastric and Duodenal Ulcers," and Edward C. Kendall, Ph.D., also of the Mayo Clinic, will speak on "A Chemical Consideration of the Thyroid."

Personal.—Dr. Wilfred H. Kellogg, Sacramento, who resigned as secretary of the state board of health last month, was appointed director of the state hygienic laboratory, Berkeley, April 3.—Dr. Robert K. Macklin, Pasadena, has just been discharged from the Letterman Hospital, San Francisco, after a long treatment for injuries received overseas. He was honored by fifty of his fellow practitioners from Los Angeles, March 28, who presented him with an automobile fully equipped.—Dr. Harry W. Martin, Los Angeles, sustained a fracture of the spine while diving into shallow water at the Bimini Baths near Los Angeles, April 19.

ILLINOIS

Chicago

Low Death Record for Chicago.—Health Commissioner Robertson announced on April 6 that the death rate for 1919 was 11.75 per thousand. The previous low record was 13.93 in 1904.

Crerar Library Closed.—The board of directors of the John Crerar Library announces that as it has been unable to secure an extension of its lease, the library will be closed May 1. It will be reopened as soon as the new building at the corner of Michigan Boulevard and Randolph Street is ready for occupancy. At present this is expected to be by September 1.

Illegal Practitioners Fined.—David Hertz of 2015 Potomac Avenue was arrested by the Department of Registration and Education of the State of Illinois, for practicing medicine without a license and was fined \$25 and costs.—Mrs. Katrina Smish of 4933 South Robey Street was also arrested by the department and fined \$25 and costs for practicing midwifery without a license.

Physicians Exonerated.—Dr. Ira R. Willets was exonerated by a coroner's jury, April 14, in the case of Blanche Warner who died April 1 at the German Deaconess Hospital from supposed illegal operation.—A coroner's jury on April 1 recommended the release of Dr. William James Mitchell held in custody in connection with the death of Mrs. Mari C. Hopkins. Dr. Mitchell was considered entirely free from blame.

Local Committee Organized for Relief of Vienna.—A Vienna Relief Committee has been organized to solicit funds for the relief of the starving inhabitants of Vienna, and an appeal has been issued through the secretary, Dr. Carl Beck. The circumstances of this once beautiful city are indeed pitiful. "She has become a dark and dreary place—the dreariest on earth. Resurrection seems hopeless," says

letter from Dr. Adolf Lorenz and Prof. Anton Eiselsberg. The address of the relief committee is 1826 Conway Building.

MARYLAND

City to Open New Clinic.—The Baltimore City Health Department has recently opened a clinic at 2000 North Charles Street, especially for persons supposed to be suffering from tuberculosis. The municipal tuberculosis dispensary at 1418 Light Street, closed during the war, has been reopened by the health department. Commissioner C. Hampson Jones reports that the department now has four tuberculosis clinics in operation. The clinics are in charge of Dr. John E. O'Neill, physician in charge, Dr. Bartus T. Baggott, assistant physician, and Miss Anna L. Murphy, nurse.

Plans for Municipal Hospital.—Announcement has been made by Surgeon-General Ireland of the Army that the U. S. Army General Hospital No. 2, at Fort McHenry, will be given up by the Army June 1 and turned back to the War Department as "surplus property." In view of the fact, the mayor of Baltimore has named a committee composed of Dr. John M. T. Finney, chairman; Drs. Arthur M. Shipley, Vinford H. Smith, Henry B. Thomas, C. Hampson Jones, and several prominent laymen, to inaugurate a movement to obtain the hospital buildings at the fort for a municipal hospital.

Measles On Increase.—Measles is claiming the attention of the Baltimore City Health Department; 216 new cases and two deaths having been reported during the past week. The situation is being watched closely because of the serious complications—frequently bronchopneumonia—that follow carelessness in handling cases of measles, which is approaching the epidemic stage in the city. Scarlet fever also appears to be on the increase, the new cases for the week numbering forty-eight. There were twenty-six cases of diphtheria and twenty-seven cases of chickenpox. Influenza lingers, the records of the department showing thirty-eight cases and four deaths.

County Districts Face Shortage of Physicians.—Unless steps are taken to offset the advantages offered by the large cities to young men entering the medical profession, the country districts will, in the near future, be without competent physicians, according to a statement recently made by Dr. John Whitridge Williams, dean of the Johns Hopkins Medical School. To meet the situation, he suggests the establishment by counties or by the state of public health centers, whose physicians and nurses would be paid regular salaries to supplement their incomes from regular practice. Some such arrangement as this will have to be made in the not distant future or the country districts will be without a sufficient quota of physicians.

Personal.—Dr. Adrian S. Taylor of the faculty of the Johns Hopkins University, and Drs. Ralph G. Mills and Charles W. Young, graduates of the Johns Hopkins Medical School, will leave June 5 to do medical work at University Hospital, Nanking, China. Dr. Thomas Dwight Sloan of the University Hospital, Nanking, recently addressed members of the Johns Hopkins Christian Association on "The Progress of Medicine in China."—Dr. John M. T. Finney will sail for London in June.—Drs. Harry W. Wheaton, Baltimore, and George F. Sargent, Towson, assistant physicians at the Sheppard and Enoch Pratt Hospital, Towson, have resigned.—Dr. Martin W. Peck, Towson, has been appointed assistant physician at the Sheppard and Enoch Pratt Hospital.—Dr. Elmer V. McCollum, Ph.D., has been made a corresponding member of the Royal Academy of Belgium.—At the recent commemoration day exercises of Johns Hopkins University, a portrait of Dr. John Whitridge Williams, dean of the medical school, was presented to the university by Dr. William H. Welch, and a portrait of Dr. Florence R. Sabin, professor of histology, was presented by Dr. William H. Howell.

MASSACHUSETTS

Personal.—Dr. Edward P. Hand, formerly city physician of Holyoke, has been elected physician to the Tuberculosis Hospital and has been succeeded by Robert E. Cleary.

Bill to Raise Standard Rejected.—By a vote of fifteen to seventy-one the house of representatives, March 31, refused to substitute for an adverse committee report the bill to raise the standard for the regulation of the registration of physicians.

Will Not Extend Vaccination Law.—By a vote of eight to seventeen, the state senate rejected the bill reported unanimously by the committee of public health to extend the provision of the compulsory vaccination law to pupils in private schools.

Report of the Cancer Commission of Harvard University.—The seventh annual report—1918-1919—of the Collis P. Huntington Memorial Hospital for Cancer Research states that the work of the institute during the two years included in the report was considerably curtailed, owing to the call of the war on the members of its staff. With the return of peace, reorganization of all research work has been going on. The facilities of the organization have been insufficient to accommodate the public, because of the interest being taken by the public and the medical profession in the treatment of cancer by radium. Special attention has also been given, during the past year, to the establishment of a new roentgen-ray machine of great power for use in the treatment of cancer. In the biologic department, studies are being made of changes in the living cell, which is an indispensable prelude to the study of the nature of cancer. A new building is proposed for the housing of the new roentgen-ray equipment. During the coming year the commission proposes to maintain its hospital for the investigation of the treatment of cancer and allied diseases and to make a special study of the use of radium and of the new roentgen-ray apparatus.

MICHIGAN

Personal.—Dr. Wynand Van K. Pyle, Grand Rapids, has returned after two years' service with the 339th Infantry in Russia.

Society Meeting.—The annual meeting of the Michigan State Medical Society will be held at Kalamazoo, May 25 to 27, under the presidency of Dr. Charles H. Baker, Bay City.

Tuberculosis Clinic.—A free clinic for tuberculosis is being conducted at Ludington under the auspices of the state anti-tuberculosis society and is under the charge of Dr. Edwin R. Van der Slice, Lansing.

District Versus Divisional Plan.—The Detroit Department of Health, in its *Weekly Review* of April 10, says that theoretically, if a nurse is confined to a district and performs all service—school, tuberculosis, contagion, infant welfare, and prenatal—within the district, more will be accomplished than if the same nurse confines herself to one service and covers a wider territory. During the three months' trial of the district plan in Detroit, the following figures show that more nursing service is actually being performed under the new system:

	FIELD NURSING SERVICES PER NURSE PER MONTH	
	Divisional Plan	District Plan
School and contagious disease.....	140	316
Infant welfare and prenatal	152	226
Tuberculosis	101	90

MINNESOTA

Clinical Club Organized.—The younger physicians of Minneapolis have organized the Minneapolis Clinical Club and elected the following officers: president, Dr. Stanley R. Maxeiner; vice president, Dr. Clifton A. Boreen, and secretary-treasurer, Dr. Floyd O. Woodward.

Forty Fellows Enrolled.—The Mayo Foundation of the University of Minnesota has forty scholars and fellows enrolled for a full three years' course leading to a graduate degree. These men get an annual allowance, which is paid out of the endowment fund of the foundation.

Personal.—Dr. C. L. Martin has resigned his fellowship in the Mayo Foundation, Rochester, to take charge of the surgical work at a hospital in Wayne, Neb.—Dr. J. C. McRae has been granted a leave of absence for one year by the Mayo Foundation to accept a commission with the American Red Cross.

MISSOURI

Personal.—Dr. Eugene Lee Myers has resigned from the staff of the St. Louis College of Physicians and Surgeons.—Dr. Harry L. Ratliff, Webb City, superintendent of the Jackson County Tuberculosis Hospital, has resigned.—Dr. Owen P. McPherson, Kansas City, has recently received the Medal of the First Order of St. Sava, from the Serbian government.—Dr. David Wise, Joplin, was seriously cut and bruised about his head and shoulders, March 28, when another automobile collided with his coupé.—Dr. Karl E. Baker, Carthage, has been appointed commissioner of health for Jasper County.

State Society Meeting.—The sixty-third annual meeting of the Missouri State Medical Association was held in Jefferson City, April 6 to 8, under the presidency of Dr. Nimrod P. Wood, Independence. St. Joseph was selected as the next place of meeting and the following officers were elected: president, Dr. Wilson J. Ferguson, Sedalia; vice presidents, Drs. Robert L. Neff, Joplin, Thomas J. Rigdon, Kennett, Thomas Chowning, Hannibal, W. C. Taylor, St. Louis, and James Q. Chambers, Kansas City; secretary, Dr. Edward J. Goodwin, St. Louis (reelected); treasurer, Dr. J. Franklin Welch, Salisbury, and delegates to the American Medical Association, Drs. Franklin E. Murphy, Kansas City, Stuart L. Baysinger, Rolla, Charles R. Woodson, St. Joseph, and Elsworth S. Smith, St. Louis. The association adopted a resolution asking the governor and state legislature to establish a hospital at Columbia as part of the Missouri University Medical School to offer four years' work instead of the two years' course in the present university hospital.

NEW YORK

Health Conference Postponed.—The annual conference of health officers, which was to have been held June 22 to 24, has been postponed and will probably convene in September.

Personal.—The home of Dr. Joseph A. Blake, Tarrytown, was destroyed by fire on April 10, causing damage estimated at \$100,000. Dr. Blake's hands were severely burned while he was endeavoring to prevent the spread of the flames.

Report of State Hospital Commission.—The annual report of the state hospital commission for the last fiscal year shows that in spite of the fact that \$1,033,380 was spent last year for new construction, repairs and improvements to the institutions belonging to the state, the overcrowding is still 21 per cent. beyond their certified capacity.

Drive for Mental Defectives.—A drive to raise \$250,000 has been begun by the Home and Farm Institution for Mental Convalescents, Inc., with headquarters at 198 Broadway. Twenty-five nonsectarian organizations are taking part in the campaign. A site in Sullivan County has been donated by Joseph B. Olidort who is heading the campaign.

Hearing on Narcotic Drug Bill.—A hearing on the bill of Senator Cotillo was held before the senate health committee on April 15, at which the bill met with a good deal of opposition from certain representatives of the medical profession. The bill is in line with the federal law and forbids the prescribing of narcotic drugs to addicts in the regular course of practice. The measure was endorsed by the house of delegates of the Medical Society of the State of New York at its recent meeting.

Health Centers Approved.—The New York State Charities Aid Association has passed resolutions endorsing the Sage-Machold bill, now pending in the legislature, which provides for a comprehensive extension of the public health work of the state through the establishment of a statewide system of health centers, with an appropriation of state funds to supplement the expenditures made by communities in carrying on this work. The purpose of the bill is to take modern medical, laboratory, hospital and dispensary facilities to the doors of the people of moderate means and those who live in rural and industrial communities.

New York City

Dispensary Clinical Society Organized.—The medical and surgical staff of St. John's Hospital, Brooklyn, have organized the dispensary Clinical Society at St. John's Hospital with Dr. Harry P. Mencken, Flushing, chief of the dispensary service.

Association of Tuberculosis Clinics Meets.—This organization met in the New York Academy of Medicine on the afternoon of April 14. Among the speakers were Drs. Isaac Ogden Woodruff, James Alexander Miller, Alfred F. Hess, Dwight C. Martin and Geza Kremer.

Postgraduate Fund Grows.—The endowment committee of the New York Post-Graduate Medical School and Hospital announces that it has raised \$610,000 of the \$2,000,000 needed. The committee has resolved on intensified efforts to reach the goal set. The present campaign has drawn much attention to the lack of opportunity for graduate study for men of moderate means as contrasted with the provisions made for undergraduate study for poor boys.

Personal.—Dr. Seth M. Milliken, who was recently sued by a patient for \$200,000 for alleged false imprisonment in the psychopathic ward of Bellevue Hospital, has been exon-

erated by a supreme court jury.—Dr. H. Holbrook Curtis is seriously ill at his home on Central Park West.—Dr. George E. Brewer was shot and wounded in the leg by the man who killed Dr. James W. Markoe in St. George's Protestant Episcopal Church, April 18.—The National Academy of Science, at its annual meeting, April 22, conferred a gold medal on Dr. Alexis Carrel.—Dr. Benjamin Jablons has returned after an absence of five years during which time he served with American Ambulance Hospital, Paris, and later with the American Expeditionary Forces in France.—Dr. Bruno S. Horowicz, assistant sanitary superintendent of the Staten Island Health Department, has applied to the courts to have his name changed to Bruno S. Harwood.—Dr. Louis Berlin, Bay Ridge, has been cited by the French government as Officier de l'Académie with silver palms.

OHIO

Clinic for Venereal Diseases.—Cleveland announces that it will open a clinic for the diagnosis and treatment of venereal diseases at Fairview Park Hospital, May 25.

Drug Suspects and Drugs Seized.—In a drug raid in Toledo, April 8, city detectives seized \$30,000 worth of morphin and opium and arrested a woman and four men accused of smuggling these drugs from Canada.

Medical Building for Columbus.—Plans have been drawn for a medical office building to be erected on East State Street, Columbus, just east of St. Francis Hospital at an estimated cost of \$250,000. The building will be a four story, fireproof structure containing eighty offices.

Graduate Courses in Medicine and Surgery.—Western Reserve University School of Medicine, Cleveland, has announced courses of two months' duration in medicine and surgery during next June and July. Satisfactory completion of the courses by graduates in medicine will establish credits toward the A.M. degree in medicine.

State Association Meeting.—The seventy-fourth annual meeting of the Ohio State Medical Association will be held in Toledo, June 1 to 3, under the presidency of Dr. James F. Baldwin, Columbus. The annual orations will be delivered by Dr. Lewellys Franklin Barker of Johns Hopkins University on "High Blood Pressure, Its Causes and Management," and by Dr. Hugh Cabot, Ann Arbor, formerly of Boston, on "Non-Tubercular Infections of the Kidney."

County Buys Hospital.—The sale of the Springfield Lake Tuberculosis Sanatorium was consummated March 23, when Summit County purchased the interests of the other joint owners, Mahoning, Stark, Columbiana and Portage counties. For their respective shares, Mahoning received \$90,690.29; Stark, \$80,011.21; Columbiana, \$44,038.32, and Portage, \$25,068.95. Each county is given a year in which to remove its patients with the exception of Stark which has been given two years. Each county will also pay a weekly rate for its patients remaining during this period.

Personal.—Dr. George W. Wood, Wilmington, has been appointed resident physician at the Ohio Soldiers and Sailors Orphan Home, Xenia.—Dr. Robert H. Grube, Xenia, has been elected president of the Association of Health Commissioners of Southwestern Ohio, and Dr. Charles H. Tate, Dayton, has been elected secretary.—Dr. Delos W. Hogue has been appointed medical supervisor of the public schools of Springfield.—Dr. Rollin D. Worden, Ravenna, has been appointed commissioner of Portage County exclusive of Ravenna City.

Occupational Diseases Must Be Reported.—An amendment to the occupational disease reporting law, which becomes effective May 4, provides a penalty for physicians who refuse or neglect to report occupational diseases to the state board of health. By the terms of this bill, any physician who is attending or called to visit a patient whom he believes to be suffering from lead poisoning, poisoning from phosphorus, arsenic, brass, wood alcohol, mercury or their compounds, from anthrax, compressed air illness or from such other occupational diseases or ailments as the state department of health shall require to be reported, must make such reports to the state health commissioner within forty-eight hours from the time of the first visit, giving the name, address and occupation of the patient, the name and address in business of the employer, and the nature of the disease. It further establishes a penalty for the neglect or refusal to obey this law, a fine not to exceed \$100 or imprisonment not to exceed ninety days. These reports are to be made on the standard schedule blanks provided and distributed by the state department of health.

Cincinnati

Trachoma.—Dr. Oscar M. Craven, medical director of the health department of Cincinnati, reports that forty-two positive cases and twenty-four suspected cases of trachoma have been found in the city.

Physicians Honored.—Drs. Byron Stanton, Stephen C. Pres, John C. MacKenzie and A. O. Mathews were made honorary members of the Cincinnati Academy of Medicine at its meeting April 5. Dr. Stanton has been a member of the academy for sixty-three years.

Illegal Practitioners Prosecuted.—It is reported that E. C. Anch was convicted, March 24, 1920, in the municipal court of Cincinnati, of the illegal practice of medicine and surgery. He was fined \$50 and costs.—Michael Jordan was found guilty of the illegal practice of medicine and was fined \$100 and costs by the municipal court of Cincinnati.

Organ of Academy of Medicine Appears.—The first issue of the *Cincinnati Journal of Medicine*, the official organ of the Cincinnati Academy of Medicine, has appeared under the editorial charge of Dr. Charles L. Bonifield. The initial number carries, practically in full, the report submitted by a special committee of the Cleveland Academy of Medicine outlining a comprehensive plan for the extension of functions and activities of the local medical society.

PENNSYLVANIA

Coeducation at the University of Pennsylvania.—An official communication from the University of Pennsylvania refers to the item published in Pennsylvania news, in *THE JOURNAL* of March 27, conveying the idea that the faculty is opposed to coeducation. The statement says that the news item is a gross exaggeration and relates the facts as follows: "One of our classes adopted a resolution stating that the class was opposed to coeducation in the school of medicine and desired to be so recorded. No such action has been taken by the other three classes and no objection has been raised by any member of our faculty to the best of my knowledge and belief."

Renew Fight on Hospitals.—The Anti-Sectarian Appropriations Association's fight against payment of state money for alleged sectarian hospitals and homes was renewed April 1. Willis Collins of Norwood, secretary of the body, brought mandamus proceedings in the Dauphin county court, Harrisburg, to prevent State Treasurer Kephart's paying appropriations made by the legislature in 1919 to five institutions, including two in Philadelphia. Similar action was brought by Collins last August against more than sixty institutions, but the court sustained the Attorney-General's contention. The suits today are each against a single institution and raise the question of legality of appropriations to institutions on the ground that they are denominational or sectarian. The actions are against the Jewish Hospital Association of Philadelphia which was voted \$30,000; the Sisters of Mercy, who have charge of the Dubois Hospital, \$25,000; Duquesne University of the Holy Ghost of Pittsburgh, \$50,000; the Protestant Deaconesses, and Evangelical Lutheran body operating Passavant Hospital, Pittsburgh, \$32,000, and St. Anthony's Memorial Hospital and House of Mercy, Roxborough, an Episcopal institution, \$50,000. The Attorney-General's department accepted service of the papers and will give an answer in thirty days.

Philadelphia

Northern Medical Association Meets.—The seventy-fourth anniversary of the Northern Medical Association will take the form of an Italian dinner to be held at Leoncovallo Café, May 20. The guests of honor will be the deans of the Philadelphia medical colleges.

Money for Insane Asked.—Dr. C. Lincoln Furbush, director of public health, submitted to the council an ordinance to appropriate \$50,000 for the department for the insane of the Philadelphia General Hospital. Ernest L. Tustin, director of public welfare, submitted an ordinance to transfer \$9,000 from the department of public welfare for improvements at the house of correction.

Civil Service Report.—The Civil Service Commission made public the result of examinations for the position of superintendent of the new Bureau of Hospitals in the Department of Health. This post, paying \$5,000 a year with free house rent, food and fuel, is one of the choicest places in the classified service. Only two of the twelve who took the examination obtained more than the required average of 70. They were Dr. John D. Jungmann and George C. Signor. Most

of those who took the examination also tried for the appointment as assistant superintendent, which pays \$3,000.

Fifty Thousand Dollars to Clean Up Streets.—To enable him to prosecute the war he has declared on municipal filth, Dr. C. Lincoln Furbush, director of public health, will ask the council for a large additional appropriation for the abatement of nuisances, which he will use in the elimination of insanitary conditions wherever they exist in the city. In making that announcement, Dr. Furbush indicated the sum he would ask would probably be \$50,000. There was need, he said, of from \$50,000 to \$100,000 for the abatement of nuisances in addition to the amount available for that purpose.

Personal.—Dr. Samuel W. Woodhouse, a graduate of Jefferson Medical College, has been appointed keeper of the collections of the Pennsylvania Museum and School of Industrial Art.—Dr. Ellen C. Potter, medical director of the Woman's Medical College Hospital, has been appointed chief of the division of child health, state department of health, to succeed Dr. Dorothy Child, resigned.—Dr. Joseph S. Neff, former director of public health and charities, has resigned as a member of the advisory council of the state health department, as he sails for Europe shortly.—Dr. William Hewson has been appointed electrocardiographist at the pathologic laboratory of the Philadelphia General Hospital.

TENNESSEE

New State Officers.—The eighty-seventh annual meeting of the Tennessee State Medical Association was held in Chattanooga, April 6 to 8, under the presidency of Dr. Andrew F. Richards, Sparta. Nashville was selected as the meeting place for 1921, and the following officers were elected: president, Dr. Leon L. Sheddan, Knoxville; vice presidents, Dr. George R. West, Chattanooga, for east Tennessee; Dr. Powell K. Lewis, Doyle, for middle Tennessee, and Dr. John J. Shea, Memphis, for west Tennessee; trustee of the journal, Dr. Charles J. Broyles, Johnson City (reelected); secretary, Dr. Olin West, Nashville (reelected), and treasurer, Dr. Joseph F. H. Gallagher, Nashville (reelected).—The eye, ear, nose and throat section of the association elected Dr. Edward C. Ellett, Memphis, chairman; Dr. Eldred B. Cayce, Nashville, vice chairman, and Dr. Louis Levy, Memphis, secretary.

CANADA

Military Hospital Closed.—The Saskatchewan Military Hospital, Moose Jaw, has been closed.

New Medical Building for Alberta University.—Draft plans for the erection of a new medical building for Alberta University, Calgary, to cost \$750,000, have been prepared.

Smallpox Ban Lifted.—The smallpox ban between Sault Ste. Marie, Ont., and Sault Ste. Marie, Mich., has been lifted so that it is not necessary for Americans visiting the Canadian side to be vaccinated or show certificates of vaccination before returning to the United States.

Extension Asked for Medical College.—A deputation from the University of Manitoba has petitioned the government to consider the provision of an extension to the medical college and to grant an appropriation this year for preliminary steps in connection with the new university at Tuxedo. The addition will be for laboratories.

Provincial Health Laboratory.—The government of British Columbia is establishing a provincial health laboratory, one branch of which will be in connection with the Vancouver General Hospital under the charge of Drs. John A. E. Campbell and Gibbs, and the other to be attached to the Royal Jubilee Hospital, Victoria, under the charge of Dr. Miller.

Personal.—Dr. Harold Orr, Medicine Hat, Alta., has been appointed by the provincial government to take charge of the administration of the venereal disease act, and clinics will be located at Edmonton, Calgary, and if need be at Medicine Hat and Lethbridge.—Dr. John Park has been reelected chairman of the Edmonton, Alta., Board of Health.—Dr. Wallace H. Cunningham has been appointed medical officer to the board of education of St. Catherine's, Ont.

GENERAL

Book Plates Wanted.—*THE JOURNAL* would be glad to receive copies of the book plates of physicians, of medical libraries, or of medical institutions, for use in a review of the subject. Copies of the book plates of noted physicians, now dead, will be especially appreciated. Mark envelopes—"BOOK PLATE."

Health Authorities to Meet.—The eighteenth annual conference of state and territorial health authorities with the U. S. Public Health Service will be held in Washington, May 26 and 27.

Pediatric Society Meeting.—The thirty-second annual meeting of the American Pediatric Society will be held at the Moraine Hotel, Highland Park, Ill., May 31 and June 1 and 2, under the presidency of Dr. Thomas S. Southworth, New York City.

Medical School Recognized.—Inadvertently the name of the University of Illinois School of Medicine was omitted from the revision of Table D which appeared last week in the State Board Statistics. This medical school should have been included among those that are recognized in all states.

Social Hygiene Workers Needed.—The United States Civil Service Commission announces examinations for the following positions under the interdepartmental social hygiene board, receipt of application for which will close, May 4: director of bureau of the division or section of protective social measures, salary \$3,500 to \$4,500 a year; supervisor of protective measures, salary \$2,000 to \$3,600 a year; field agent, protective social measures, \$1,800 to \$3,000 a year, and special assistant agent, protective social measures, salary \$900 to \$1,500 a year. An examination will also be held on May 5 to fill positions of field agent in protective social measures, under the auspices of the board, with salaries ranging from \$1,200 to \$3,000. Further information may be obtained from the United States Civil Service Commission or from local civil service boards.

Vocational Rehabilitation.—Final legislative action has been taken in the Senate and House on the bill to establish vocational rehabilitation of persons injured or disabled in industry from any cause. This legislation will give federal and state aid to all persons who are suffering from physical defect, injury or disease, and who are partially or totally incapacitated from remunerative occupations. This aid will include the training and instruction of such persons for entering gainful occupations. The work is to be carried on under the direction of the federal board of vocational training. This board is to cooperate with vocational training boards of the several states, and the sum of \$1,000,000 is apportioned among the several states according to the population of each state. Each state is required to expend an amount equal to that expended by the federal government. The bill has passed both the Senate and House and awaits the report of the conference committee before going to the President.

Bequests and Donations.—The following bequests and donations have recently been announced:

University of Cambridge, England, a donation of \$100,000 for the erection and equipment of an institute for parasitological research, with an additional \$50,000 for its upkeep and maintenance, by Mr. and Mrs. A. P. Molteno.

The Ontario Honorary Advisory Council for Scientific Research has made provision for forty bursaries, studentships, and fellowships to be awarded to qualified science graduates who will prepare for a career in scientific research in connection with the natural resources of Canada.

Toronto General Hospital, a donation of \$250,000 toward lifting the debt on that institution, by Sir Joseph Flavelle.

Grant Hospital, Chicago, \$10,000, Alexian Brothers Hospital, Chicago, \$5,000 by the will of Jacob Birk.

Emergency Hospital, Chicago, \$400,000 by the will of Captain Charles Haines, St. Charles, Ill.

Henry Phipps Institute, Philadelphia, a donation of \$500,000 by the family of Henry Phipps.

Home for Aged Protestant Women and Home for Aged Persons, Nashua, N. H., each \$312,500, by the will of Miss Mary E. Hunt, Nashua.

St. Vincent's Hospital, New York City, \$100,000; Cancer Hospital, New York City, and Brooklyn Hospital, \$25,000; Brooklyn Home for Consumptives, \$20,000, by the will of Daniel J. Carroll, New York City.

Sheppard-Towner Bill.—National support and stimulation of maternity and child welfare are the objects of Senate Bill No. 3259, which has already had two readings in the Senate and has been referred to the committee on public health and national quarantine. This bill authorizes the appropriation of \$480,000 each year, \$10,000 to be paid annually to each state for the establishment and administration of boards of maternity and infant hygiene. In addition, it provides for the appropriation of \$2,000,000, increasing about \$400,000 annually after five years, to be apportioned to various states according to population, and not to be available unless matched dollar for dollar by state appropriation. The bill aims at cooperation with the several states in the promotion of the care of mothers and children; instruction in hygiene of maternity and infancy and the establishment of a federal

board of maternity and infant hygiene for the administration of the act and to make investigation, studies and reports on related subjects.

FOREIGN

Hospital at Omsk Closed.—The American Red Cross Hospital at Omsk, Siberia, has been evacuated and the patients taken to the Cadetsky Corpus Hospital, Omsk. During the nine months' existence of this hospital, 6,009 patients received treatment.

The Lannelongue Prize.—Prof. D. Giordano of Venice has been invited to be a member of the jury to award the Lannelongue prize (5,000 francs and a gold medal) offered by the French Surgical Association to the surgeon who has made the greatest discovery or done the most important work of the preceding five years.

Rockefeller Foundation Donation to Vienna Sufferers.—In response to a telegram from Dr. Linsly R. Williams of Johns Hopkins University, in which he states that more than 3,000 physicians are destitute and only 200 of the most pitiable cases can be taken care of by the American fund, the Rockefeller Foundation has made a donation of \$10,000.

Hospital Wing Named for Red Cross Worker.—One of the wings of the new municipal hospital, Lens, France, has been named after Miss Ella Harris, Philadelphia district manager of the American Red Cross, in that district of devastated France. The other three wings of the hospital are named after Premier Clemenceau, Marshal Foch and the mayor of Lens.

Epidemic Diseases.—Typhus fever is said to be ravaging eastern Galicia. During January and February 45,000 cases were reported.—Cholera and dysentery have broken out in Feodosia, Sebastopol and other cities of the Crimea, in addition to typhus fever, which is already epidemic. Sebastopol is virtually without water as it is dependent on a distilling plant which is out of service on account of lack of fuel.

Personal.—It is reported that Dr. Lorrin A. Shepard, held as hostage by Turks after the withdrawal of a French relief column from Aintab, has been released.—Dr. L. W. D. Jackman, said to be a medical missionary at Sadiya, Assam, is reported to have been sentenced to two years' imprisonment for having shot and killed Major H. D. Cloete. Evidence was produced to show that Dr. Jackman committed the deed on hearing his wife's confession of infidelity.

Lectures on Tuberculosis in Children.—A special course on tuberculosis in children will be given at the Hospital for Sick Children, 149 Rue de Sèvres, Paris, May 4 to June 12, by Drs. H. Méry, P. Armand-Delille and L. Girard of the hospital staff. Lectures will be delivered at 5 p. m. on three days in each week, Tuesday, Wednesday and Thursday, and will embrace discussions of the etiology, pathology, varieties, diagnosis, prevention and treatment of the disease.

Child Welfare Work in Belgium.—A national children's bureau has been established in Belgium. The bureau is directed by a board of forty members, called the "Conseil supérieur des œuvres de l'enfance." This board has the decision on all questions relating to the protection of children; it issues orders concerning the functions of subsidized agencies; it takes necessary measures for the protection of children within the limits of the law; and determines the use of funds at the disposal of the bureau.

Taking Medicines Out of Poland.—Health Commissioner Louis E. Van Norman, at Warsaw, reports that grave concern is being manifested by the Polish Medical Association over the large amount of medical supplies that are constantly being taken out of the country both east and west. The country women, who formerly brought in constant supplies of herbs to the drug stores in Warsaw, are reaping fortunes by selling their agricultural products at high prices, so that they no longer bother with selling herbs. The medical association is preparing a memorandum to the government asking for the infliction of severe penalties for taking medical supplies out of the country.

New Archives for Internal Medicine Launched in Vienna.—A bulky journal of 210 pages, 6 by 10 inches, has reached us as the first issue of the *Wiener Archiv für innere Medizin*, published by twenty-four internists connected with the universities of Vienna, Prague and Innsbruck. Profs. W. Falta and K. F. Wenckebach (Frankgasse 2, Vienna) are the editors. The *Archiv* is to be issued irregularly, thirty to forty printed forms forming a volume; subscription price 54 marks. Urban and Schwarzenberg, Maximilianstrasse 4.

Vienna, are the publishers. The six articles in the first number are on the pathology of the lungs, circulation, vegetative nervous system and on palpation of the pulse. They will be reviewed in the foreign literature department.

Tribute to Majocchi.—Prof. Domenico Majocchi of the chair of skin diseases and syphilis in the University of Bologna soon completes his fortieth years' incumbency, and his pupils and other friends are planning to present him with a gold medal on the anniversary. An appeal has been issued for contributions, signed by the president of the Italian Società di dermatologia e sifilografia, the president of the associazione professionale dei dermosifilografi italiani, the president of the Ordine dei medici, the rector of the university and the head of the medical faculty and of the local medical society. The secretary is Prof. G. Pini, Via S. Stefano 18, Bologna. The tribute is to be a feature of the annual meeting of the Società italiana di dermatologia e sifilografia which convenes at Bologna June 6. The list of Majocchi's works fills about half a column in the Surgeon-General's Catalogue.

Deaths in Other Countries

Baron Kanehiro Takaki, M.D., formerly inspector-general of the Japanese navy and leader in military hygiene, especially in the eradication of beriberi from the navy. He studied medicine in England in the seventies and visited the United States in 1905. Honorary degrees were conferred on him by Columbia and the University of Pennsylvania among others, and he lectured in this country. His work "Military Hygiene in the Japanese Navy" was published at New York in 1906.—Dr. A. Ceradini, professor of bacteriology at the University of Turin and president of the Reale Società d'igiene, aged 44.—Dr. P. Regard of Geneva, aged 62.—Dr. Ricardo Mesa Torres, a prominent physician of Santiago, Chile.—Dr. R. Schmucker, medical head of the Rudolf Children's Hospital, Vienna, aged 67.—Dr. L. Hauser of Darmstadt, aged 75.—Dr. E. Burchard, a neurologist of Berlin.—Dr. M. Stolz, professor of gynecology at the University of Graz.—Dr. M. Siegfried, professor of physiologic chemistry at the University of Leipzig.—Dr. T. Senise, professor of medical pathology at the University of Naples, author of works on the symptomatology of the respiratory and cardiovascular systems, and senator, aged 72.—Dr. M. Fürbringer, professor of anatomy at Amsterdam, Jena and Heidelberg in turn, aged 74.—James Pointon, Southport, England; M.R.C.S. (Eng.), L.R.C.P. (Lond.), 1878; aged 69; senior medical officer of the Cunard Steamship Company; senior house surgeon to the Children's Infirmary, Liverpool, and honorary medical officer of the North Dispensary, Liverpool; surgeon of the Steamship *Royal George*; died at sea, April 11, from heart disease, and in accordance with his wishes, was buried at sea.

LATIN AMERICA

Leprosy in Venezuela.—According to the last report of the Office of Public Health of Venezuela there was a total of 720 lepers isolated in the two leprosariums of that country on Sept. 30, 1919.

Personal.—Dr. Pedro Alemán is now making a professional visit to New York City.—Dr. F. Vallarino, one of the physicians of the Santo Tomás Hospital of Panama, is now on his wedding trip in New York City.

Eugenics in Uruguay.—A bill has been introduced in Uruguay according to which no person will be able to marry unless he previously obtains a physician's certificate, showing the applicant is free from chronic, communicable disease.

International Sanitary Conference.—According to the provisional program for the Sixth International Sanitary Conference of the American Republics, to be held at Montevideo, Dec. 12-20, 1920, the following subjects will be discussed: sanitary laws and regulations adopted by the different countries since the fifth conference; enforcement of resolutions adopted at preceding conferences; report of the contagious diseases most prevalent in the different countries; measures adopted to prevent the introduction and the spread of bubonic plague; prevalence of cerebrospinal meningitis, infantile paralysis and lethargic encephalitis; present status of the campaigns against tuberculosis, yellow fever, malaria, trachoma and hookworm disease; data relative to leprosy and the measures taken to prevent its spread; present status of the campaign against venereal diseases; organization of the quarantine service in the different countries, and vital statistics of the different countries.

Government Services

Copies of Report of the Surgeon-General Not Available

According to law, only 2,500 copies of the report of the Surgeon-General can be printed, and additional copies cannot be printed without a special act of Congress. We are informed by Surgeon-General Ireland that all of the copies of the 1919 report have been distributed, and that it is impossible to obtain a special act for the printing of additional copies at this time.

The New Medical Reserve Corps

Commissions in the new Medical Reserve Corps are issued by the War Department only to those former medical officers who have applied either by means of the usual Form 150, accomplished at the time of discharge, or by formal application by letter to the Adjutant-General or Surgeon-General. Those who had service during the World War and who have not yet received commissions, should, if they desire to become members of the new Medical Reserve Corps, make application therefor by letter to the Adjutant-General of the Army.

The Medical Veterans of the World War

During March, 1920, 116 new members were admitted. The total membership now is 2,827.

Med. Corps, U. S. A.	1,337
Med. Corps, U. S. N.	56
U. S. Public Health Service	66
Contract Surgeons, Army	90
Act. Asst. Surgs. U. S. P. H. S.	48
Members Local Boards	531
Medical Examiners Local Boards	189
Members Med. Advisory Boards	510

Building for Army Medical School

The Army appropriation bill contains a provision for the expenditure of \$500,000 for suitable buildings to be used by the Army Medical School on the Walter Reed Hospital grounds at Washington, D. C. It is left to the discretion of the Secretary of War and the Surgeon-General to determine the kind and character of such buildings. The bill carrying this appropriation has been favorably reported to the House of Representatives by the committee on military affairs. The same bill also contains a provision for the erection and completion of buildings at the Letterman General Hospital, San Francisco, in the amount of \$94,900.

Work on Army Medical Center

Work on what is expected to be the largest medical center in the country will be started at Walter Reed General Hospital when plans now being drafted and calling for the assembling of the army medical school, nurse school, medical museum and library, at an estimated cost of \$10,000,000 are put into effect, it was announced yesterday. As the commencement of the project depends on congressional appropriations, it will probably be late in the summer before the erection of the army medical school building, the first of the proposed structures, will be begun. An appropriation bill for \$500,000 is now pending before Congress as the initial sum to cover the cost of this building.

It is proposed to purchase 40 acres of land to the north and west of the present hospital site and Congress has granted \$350,000 for its purchase. The plans also call for the building of additional wings to the present main building. The work of medical reconstruction and physiotherapy will be carried on in the enlarged institution and an adequate headquarters will be provided for the entire hospital corps. When completed, the enlarged hospital established on a permanent basis will accommodate from 500 to 700 beds or more.

The main purpose of enlarging Walter Reed is to provide a central point for the entire medical work of the army.

With this idea in mind, medical authorities of the army will be able to carry out a plan of gathering together all the army medical agencies, the need for which has been felt for many years.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ALABAMA
Tuscaloosa—Collier, D. M.

COLORADO
Denver—Hayes, O.

ILLINOIS
Chicago—Guinea, W. E.

MASSACHUSETTS
Chelsea—Regan, W. F.

NEW YORK
Brooklyn—Grussner, A. S.

NORTH CAROLINA
Goldsboro—Hood, M. H.

TEXAS
Anson—Jones, A. M.

VERMONT
Burlington—Hogan, W. L.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

ARIZONA
Leupp—Warren, B. A. (C.)
Metcalf—Lien, F. O. (L.)
Salt River—Whiting, S. D. (C.)

ARKANSAS
Clarendon—Houston, M. F. (L.)
Eureka Springs—Tatman, A. E. (L.)

CALIFORNIA
Los Angeles—Chase, F. H. (C.)
Hartford, W. S. (L.)
Keyes, H. S. (M.)
Lucey, D. D. (L.)
Pasadena—Macklin, R. K. (L.)
Turlock—Collins, J. L. (L.)
Ventura—Mason, J. S. (L.)

COLORADO
Denver—Allen, K. D. (C.)

DISTRICT OF COLUMBIA
Washington—Cook, R. L. (L. C.)
Tobias, H. W. (M.)
Walker, L. A. (M.)

GEORGIA
Augusta—Stanley, R. H. (M.)

ILLINOIS
Chicago—Galland, W. H. (C.)
Kerr, N. (M.)

INDIANA
Mooreville—Brackney, M. F. (C.)

IOWA
Adel—Irvin, H. C. (C.)
Batavia—Baldridge, J. H. (C.)
Cedar Rapids—Aborn, C. E. (C.)
Davenport—Kulp, R. R. (L.)
Eldora—Nyquist, D. M. (L.)
Indianola—Simons, J. D. (L.)
Terril—Schoolcy, A. H. (L.)

KANSAS
White City—Goss, H. L. (L.)

KENTUCKY
Louisville—Percefull, A. C. L. (M.)
Stirling, W. C., Jr. (C.)

MARYLAND
Baltimore—Cummins, J. E. (L.)

MASSACHUSETTS
Boston—Brackett, E. G. (Col.)
Brookline—Townsend, D. (C.)

MICHIGAN
Flint—Scott, R. D. (L.)
Lansing—Rapp, J. H. (L.)
Onaway—Wastell, F. W. (C.)
Posen—Nevius, F. P. (C.)
Traverse City—Holliday, G. A. (C.)

MINNESOTA
Rochester—Plum, F. A. (C.)

MISSOURI
Adrian—Robinson, E. E. (L.)
Lamar—Allee, G. D. (C.)
Trenton—Kimberlin, H. C. (L.)

MONTANA
Kalispell—Little, W. S. (C.)
Stevensville—Fales, L. H. (C.)

NEBRASKA
Kearney—Strong, J. A. (C.)
Lincoln—Hickman, C. C. (L.)
North Platte—Wurtele, F. J. (M.)

NEW JERSEY
Camden—Moon, A. C. (C.)

NEW YORK
Brooklyn—Jablons, B. (M.)
Nafis, W. H. (M.)
Collins—Hadley, R. V. (L.)
New York City—Cotter, J. J. (C.)
Eldridge, W. W. Jr. (C.)
Newton, S. B. (M.)
Symonds, C. W. (L.)
Ogdensburg—Miller, C. R. (L.)
Rochester—Casey, M. L. (C.)
Troy—Panitch, W. (C.)
Yonkers—Butler, E. F. (M.)

NORTH CAROLINA
Fairmont—Price, H. L. (L.)
Mount Airy—Absher, D. C. (M.)

OHIO
Columbus—Busby, J. L. (L.)
Elyria—Smith, A. B. (M.)
Urbana—Smith, M. L. (L.)

OKLAHOMA
Ardmore—Gregory, D. A. (C.)
Muskogee—Fischer, W. O. (L.)
Pryor—Tilly, G. W. (C.)
Stillwater—Mallory, J. H. (L.)

OREGON
Bandon—Mann, S. J. (C.)

PENNSYLVANIA
Greensburg—Bell, W. S. (L.)
Harrisburg—Moffitt, G. R. (M.)
McDonald—Dixon, C. W. (C.)
New Castle—Brown, T. C. (L.)
Philadelphia—Artman, E. L., Jr. (L.)
Cadwallader, C. (L.)
Shimer, W. S. (C.)
Pittsburgh—Wishard, W. H. (L.)
Wilkes-Barre—McGinley, J. L. (L.)

TENNESSEE
Memphis—McMahon, B. C. (M.)
Waters, C. T. (L.)

TEXAS
Beaumont—Scheller, L. (L.)
Denison—Freels, A. M. (C.)
Stein, J. F. (L.)
Lufkin—Dillen, O. M. (L.)
Maryneal—Fillmore, H. D. (C.)
Montgomery—Covington, C. M. (L.)
Ralls—Harrison, F. (M.)
San Antonio—Fickessen, W. R. (C.)

VIRGINIA
Richmond—McCabe, J. L. (L.)

WISCONSIN
Madison—Hough, A. G. (C.)
Reedsville—Festerling, E. G. (C.)
Siren—Oliver, L. H. (L.)

Foreign Letters

PARIS

March 18, 1920.

Vaccines in Surgical Affections

At a recent session of the Société de chirurgie of Paris, there was an interesting discussion on the employment of vaccines in the treatment of carbuncles, especially by the method of Pierre Delbet. The latter combines Pasteur's method of attenuated cultures with the modern method of killed cultures. He found it possible by this means to inject a considerably larger dose, several billions of micro-organisms, at one time. Despite the massive dose, he has never observed any reaction analogous to that described by Wright as the negative phase, which Delbet thinks is the result of an excessive initial dose. On the contrary, certain toxic reactions were observed, often very violent, and despite their intensity, these were found to constitute a good omen. In the process of aging, the toxicity of the culture is probably attenuated though not entirely destroyed. After some attempts, Delbet fixed on 4 c.c., representing about thirteen billions of organisms, as a safe and effective dose. The vaccine is, naturally, a stock vaccine of streptococcus, staphylococcus and *Bacillus pyocyaneus* (the last in great abundance: eight billions). Delbet believes it unnecessary to use the specific micro-organism and, like Wright, he has not only abandoned autogenous vaccines, but he even questions whether better results are not obtained with a vaccine prepared from cultures of a micro-organism other than that which is the causative agent in a given case. The method has been employed since 1913, since which time no case of carbuncle in Delbet's service has been treated by surgical incision; boils, lymphangitis and erysipelas also respond very promptly to this treatment.

Professor Hartmann had occasion to employ the vaccine on himself for axillary adenitis. The after-pain was moderate, but for twenty-four hours the arm was virtually paralyzed. It seems to him that a crucial incision is indicated in certain advanced cases: in fact, in any case such intervention exerts a sedative influence on the pain.

Dr. Robineau found that on the day after injection the pain had subsided, palpation revealed that the carbuncle had decreased to half its original size, and the peripheral inflammation had disappeared. Recovery is usually complete in ten days, a distinct advantage over surgical treatment, by which relief from pain and recovery are not so promptly obtained. Dr. Grégoire recited his experiences with the vaccine in seventeen cases of subacute and acute osteomyelitis, leaving the severe toxic forms out of discussion. Fourteen resulted favorably, one was treated only recently, and two cases were partial failures in that sequestrums had formed. In some cases in which diffuse suppuration apparently threatened a joint, Dr. Grégoire made several punctures; the puncture fluid was at first frankly purulent, but gradually became of a viscous, albuminous character. In all cases, the temperature dropped in a few days after treatment, and the general condition improved rapidly. Recovery was effected in from thirteen to 178 days. One half of the patients were well in from thirty to sixty days. Dr. Ombrédanne declared that there should be left out of consideration, not only the severe toxic forms, but also the lighter acute forms susceptible of resolution, limiting ourselves to the acute suppurative forms which are usually treated by incision. In these cases he had variable results; besides some undoubted cures, he had complete failures and even disasters. Vaccinotherapy should be employed only after careful study of the indications. Professor Broca, on the contrary,

maintained that vaccines should be employed in severe cases, precisely because no harm can result. In a particularly bad case an extensive sequestrum was formed despite vaccino-therapy, and an operation was necessary, but the patient's life was saved, and Broca is persuaded that this was due to the vaccine.

The Printers' Strike and the Medical Press

From time to time in these pages have been recorded the difficulties with which the scientific press in general and the medical press in particular are now contending. For almost a month, these troubles have been aggravated by a strike of the printers. All of the large publishers of Paris have suspended. Fortunately, some of the medical journals are printed in provincial towns, and these are able to continue publication despite the strike. However, the *Presse médicale*, which is printed in Paris, has not been issued for three weeks, and the editors have announced that, depending on the circumstances and duration of the strike, they will later publish double numbers in the interests of their subscribers. Besides the periodical publications, many books are also delayed by the same strike.

The Red Cross Crusade Against Epidemics

At the first meeting of the General Council of the League of Red Cross Societies, held in Geneva, March 2-9, twenty-eight national societies were represented. It might be of interest to note that the same nations participated in the first council of the League of Nations. The general council decided to place at the top of the list of adopted resolutions the text of Article 25 of the constitution of the League of Nations, stipulating that the members of the League of Nations agree to encourage and further the establishment and cooperation of duly authorized voluntary national societies of the Red Cross. In the course of the session there was read an appeal from the League of Nations asking the Red Cross to combat the ravages caused by epidemics in central and eastern Europe. The council adopted a resolution expressing its full accord and complete sympathy with the suggestions, at pointing out that nothing could be done unless the necessary food, clothing and means of transportation were forthcoming. These the governments ought to provide; the League of Red Cross Societies on its part would seek the immediate extension of voluntary aid to the afflicted regions. The resolution closed with these words: This is the first time that, as the result of the collaboration of two great organizations, the League of Nations and the League of Red Cross Societies, there is born a more certain and adequate hope of the solution of the tragic problems that bring distress to the world.

LONDON

April 3, 1920.

The Association of Surgeons of Great Britain and Ireland

The formation of the Association of Surgeons of Great Britain and Ireland was described in a previous letter (*THE JOURNAL*, Feb. 21, 1920, p. 538). The first annual meeting will be held in London in May. The association exists for the "advancement of the science and art of surgery, and the promotion of intercourse and friendship among the surgeons of the United Kingdom." The number of fellows is not to exceed 250, and all must be engaged in purely surgical practice, in the teaching of surgery, or in surgical research. A fellow on ceasing to be a member of the active staff of his hospital will become a senior fellow, and will retain the privilege of attending the meetings. A general meeting will be held once a year, in May, in some town in the United Kingdom which possesses a university or medical school. The first meeting, and subsequently at least every third meeting, should be held in London. Fellows will be required

to speak—not read—their communications, and will be allowed not more than fifteen minutes. No reporters are to be present, and no reports of the meetings are to be sent to the journals or newspapers. The first general meeting will begin at the Royal College of Surgeons of England, when the president, Sir John Bland-Sutton, will deliver an address. There will be a discussion on "The Ritual of the Surgical Operation." The specimens in the war collection in the museum of the Royal College of Surgeons will be exhibited by Professor Keith. Sir George Makins will speak on selected specimens of wounds of vessels, and Sir Cuthbert Wallace on gunshot injuries of the abdomen. Two afternoons will be spent at various London hospitals, where cases will be shown and operations witnessed.

A "Dog's Protection Bill"

The defeat of a "dog's protection bill" introduced into the House of Commons last year has already been reported. Nothing daunted, the antivivisectionists have made another attempt. Sir F. Banbury, in introducing the bill, reminded the house that similar bills had been read a second time on three previous occasions. The present bill was in the form in which it left the "standing committee" last year. Sir Watson Cheyne moved an amendment declining to proceed with a measure which would impose a serious obstacle to medical research. He pointed out that the reason the dog was chosen was that of all animals its physiologic processes approached that of man. The surgery of the brain had been built up by experimenting on dogs. The experiments which caused pain were very few indeed. After an attempt to move the closure, the bill was talked out. In a letter to the *Times*, Dr. Thomas Lewis points out that almost the whole modern progress in diseases of the heart hinges on experiments on dogs. Auricular fibrillation was first recognized in man as a result of experiments on six London mongrels. The next step to be discovered was what fibrillation actually is. That cannot be done with observation on patients; it can be done only by observing the condition of the exposed heart of an animal. Thanks to the defeat of the bill last year, this work has been for twelve months in progress, and we are within sight of the goal. Already we have obtained a deeper insight into the condition. Dr. Lewis' views were quoted with effect by one of the opponents in the present bill.

The National Health Insurance

Like everything else after the war, national health insurance has become much more expensive than it was before. Dr. Addison, minister of health, has introduced a bill into Parliament increasing the benefits in the case of men from \$2.50 to \$3.75 a week for sickness and from \$1.25 to \$1.75 for disablement. In the case of women the benefit is to be increased from \$1.75 to \$3. These benefits necessitate an increased contribution of 6 cents a week for each insured person, of which it is proposed to derive 4 cents from the employer and 2 cents from the employee. Sanatorium benefit is to be taken out of the insurance act altogether, as the first stage of a comprehensive policy dealing with the whole problem of tuberculosis in all sections of the population.

The ministry of health is making an important addition to its machinery for the prevention of disease by appointing a new staff of outdoor medical officers with general duties, clinical and administrative. The new posts will be held either on whole or on part time basis, but only the duties of the whole-time officers are as yet defined. The latter, stationed in their various areas, will act in a clinical capacity, either as referees or as consultants. They will examine insured persons referred to them either by the practitioners working under the national insurance act or by the approved societies; they will advise either or both of these on the

question of capacity for work, and they will assist the physicians in matters of diagnosis or treatment. In their administrative capacity they will examine health insurance medical certificates and records, and conduct inquiries arising on any points relative to the treatment of the insured. It is proposed to appoint in the first instance eighteen whole-time officers for England and three for Wales, and to create also a certain small number of supervisory posts.

Medical Inspection from the Cradle to the Grave

The board of education has issued consolidated regulations relating to the special services of elementary education for promoting the healthy physical and mental development of children. The most important provision is one securing a continuity of medical records from elementary to secondary schools. This great reform was suggested in Sir George Newman's recent report. It means that a child will now have a complete health record through all school life until it is about to enter on its future career. Indeed, it may be that the record will go back to birth or even to the period of the antenatal clinic, for medical care is now exercised at day nurseries and nursery schools. Industry will thus be provided with records of fitness, and it will be possible for business firms to prevent the weak or diseased being employed in work endangering life or threatening the safety of others. Moreover, a complete national health census will be secured and the localization and spread of disease, its complications and after-effects worked out. The new order is thus, though a small measure, an integral part of a movement for the state control of health of great magnitude. A new link has been forged in a chain that will stretch from cradle to grave, as the subjoined tabulation demonstrates:

Antenatal Clinic	Voluntary Agencies or Local Authorities
Day nurseries till 2 years	Day nurseries
Nursery schools, from 2 to 5 years	Board of education
Public elementary schools, from 5 to 14 years	Board of education
Secondary schools, from 14 to 18 years	Board of education
Employment	National health insurance (Ministry of Health) Board of Trade, Home Office, etc.

Rewards for Professional Research

In the *Times*, Sir Ronald Ross, one of the deputation which (as stated in a previous letter) brought the question of rewards for scientific discoveries before the government, returns to the subject. The proposal was that the state should expend a maximum sum of \$100,000, a year for giving thirty or more moderate life pensions to men whose medical researches have been of accepted general value to the public without being remunerative to themselves. Owing to the number of the pensions and the small amounts of many of them, not only major discoveries but also much minor good work would receive recompense. At present, the Medical Research Committee dispenses subsidies for research, but that is a different matter. Mr. Balfour, who received the deputation, raised the difficulty that it was often hard to decide who had made the particular discovery. Sir Ronald Ross points out that such difficulties occur in the case of almost every kind of reward—when learned societies give medals, when the Royal Society elects new fellows, when the Nobel prizes are bestowed, and even when any state grants titles and honors. If the mere difficulty of selection is a bar to rewards, then scarcely any rewards at all can ever be bestowed. But in practice it is found that the difficulty can easily be overcome by keeping detailed registers of the work of all possible candidates, and by delegating the task of selection to competent committees. Even if an error is sometimes made—if a reward is given to the second best or third-best man—no great harm will be done, because in fact scientific discoveries are generally made by several persons, all of whom deserve the gratitude of the community.

Deaths

James Wright Markoe ☉ New York City; College of Physicians and Surgeons in the city of New York, 1885; aged 58; a Fellow of the New York Academy of Medicine; consulting gynecologist to Vassar Brothers' Hospital, Poughkeepsie; consulting surgeon to the Neurological Institute and Caledonian Hospital, Brooklyn, and director and chief surgeon of the first division of the Lying-In Hospital of the City of New York; was shot and instantly killed, April 18, in St. George's Protestant Episcopal Church, New York City.

Arthur Frank Wilhelmy ☉ Decatur, Ill.; Cincinnati College of Medicine and Surgery, 1896; aged 47; major, M. R. C., U. S. Army; a member of the attending staff of St. Mary's and Macon County hospitals; a member of the Decatur Board of Health; during the war with Spain captain, Illinois National Guard; while driving in his automobile over a grade crossing, April 16, was struck by an Illinois Central train and instantly killed.

James Thomas Searcy ☉ Tuscaloosa, Ala.; University of the City of New York, 1867; aged 80; from 1892 to 1919 superintendent of the Alabama Bryce Insane Hospital; a Confederate veteran; president of the Medical Association of the State of Alabama in 1892 and 1893, and of the American Medico-Psychological Association in 1912-1913; died at the home of his daughter in Tuscaloosa, April 6.

George S. Dare, Rising Sun, Md.; Jefferson Medical College, 1866; aged 77; a member of the Medical and Chirurgical Faculty of Maryland; founder and for several years president of the Cecil County Medical Society; a director of the Union Hospital, Elkton; state director of the Baltimore Central Railroad; died, March 24.

Daniel F. Everts, Romulus, N. Y.; Long Island College Hospital, Brooklyn, 1876; aged 76; a member of the Medical Society of the State of New York, and president of the Seneca County Medical Society in 1882; a veteran of the Civil War; health officer of Romulus for several years; died, April 11, from pleuropneumonia.

Adlia C. Stanley, Tillar, Ark.; St. Louis College of Physicians and Surgeons, 1898; aged 67; a member of the Arkansas Medical Society; president of the Bank of Tillar, and formerly secretary and treasurer of the Good Bar Shoe Company, St. Louis; died in a hospital in Little Rock, March 25, from cerebral hemorrhage.

Frederick William McDonald ☉ Wylam, Ala.; Birmingham (Ala.) Medical College, 1905; aged 40; once president of the Jefferson County Medical Association and a member of the medical staff of the Tennessee Coal, Iron and Railroad Company; died in an infirmary in Birmingham, April 6, from pneumonia.

George Egbert Fulton, Bluffton, Ind.; Miami Medical College, Cincinnati, 1878; aged 64; a member of the Indiana State Medical Association; a member of the state legislature in 1889 and 1891; local surgeon of the Toledo, St. Louis and Western Railroad; died, April 2, from pneumonia following influenza.

Daniel Arthur Chapman, Republic, Pa.; College of Physicians and Surgeons, Baltimore, 1907; aged 34; a member of the Missouri State Medical Association; a medical officer of the Second Missouri Infantry, with Mexican Border service in 1916; died in a hospital in Pittsburgh, April 5, from pneumonia.

Rozier Clageth Bayly ☉ Alexandria, Va.; Georgetown University, Washington, D. C., 1905; aged 38; lieutenant, M. C., U. S. Army, and discharged, June 16, 1912; died in the Episcopal Eye, Ear, Nose and Throat Hospital, Washington, D. C., March 28, three days after an operation for mastoiditis.

Henry Brooks Baker, Ypsilanti, Mich.; Bellevue Hospital Medical College, 1866; aged 82; superintendent of vital statistics and secretary of the Michigan State Board of Health for nearly thirty-five years; once vice president of the American Social Science Association; died, about April 3.

Joseph Alexander Dambourges Jacques, Marlboro, Mass.; Montreal School of Medicine and Surgery, 1901; aged 43; for many years a member of the board of trustees of the Marlboro Public Library; died, April 4, from heart disease.

☉ Indicates "Fellow" of the American Medical Association.

Joseph Simms, New York City; Eclectic Medical College of the City of New York, 1871; aged 86; a veteran of the Civil War; a member of the Anthropological Institute of Great Britain and Ireland; a specialist in physiognomy; died, April 11, from cerebral hemorrhage.

S. M. Mosely, Huntington, Ark. (license, state medical board, Arkansas, 1903); aged 54; mayor of Huntington; died in the Sparks Hospital, Fort Smith, Ark., March 29, from the effects of a gunshot wound of the abdomen, believed to have been accidentally inflicted.

Milton V. Cunningham, Youngstown, Ohio; College of Physicians and Surgeons, Chicago, 1894; aged 52; for two years city physician of Youngstown; a member of the staff of St. Elizabeth's Hospital; died at Santa Ana, Calif., March 1, from cerebral hemorrhage.

Justin Adfer Walling, Millbridge, Me.; Medical School of Maine, Brunswick and Portland, 1882; aged 51; a member of the Maine Medical Association, and president of the Washington County Medical Association; died recently.

Fred Charles Hunt, Girard, Ohio; University of Buffalo, 1897; aged 44; lieutenant, M. C., U. S. Army, and discharged, Jan. 11, 1919; died in St. Elizabeth's Hospital, Girard, March 20, as the result of middle ear disease.

Chauncey E. Koon, Grand Rapids, Mich.; Chicago Medical College, 1873; aged 76; visiting physician to Butterworth Hospital and a member of the staff of the Detention Hospital; a veteran of the Civil War; died, April 6.

Robert Lount, Hempstead, N. Y.; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1881; aged 75; for twenty years health officer of Hempstead; died, April 5, from cerebral hemorrhage.

Robert Lee Long ⊕ Atlanta, Texas; Memphis, Tenn., Hospital Medical College, 1902; aged 46; lieutenant, M. C., U. S. Army, and discharged, Dec. 21, 1918; was killed in a grade crossing accident, March 23.

Francis T. Overdorff, Johnstown, Pa. (license, Cambria County, Pa., 1885); a practitioner for forty-nine years; aged 79; a veteran of the Civil War; died in Johns Hopkins Hospital, Baltimore, April 5.

Benjamin F. Walker, Colerain, S. C.; Medical College of the State of South Carolina, Charleston, 1861; aged 87; for four years surgeon in the Confederate service during the Civil War; died, April 7.

John Peter Marshall ⊕ Warren, Ohio; Jefferson Medical College, 1908; aged 37; a member of the American Academy of Ophthalmology and Oto-Laryngology; died, about April 5, from septicemia.

Harry Anderson Upshaw ⊕ St. Louis; Marion-Sims College of Medicine, St. Louis, 1898; aged 42; lieutenant, M. R. C., U. S. Army; died in St. Anthony's Hospital, St. Louis, April 3.

George W. Seibert, Lebanon, Pa.; Jefferson Medical College, 1879; aged 65; for a time a member of the board of health of Lebanon; died in the Harrisburg Hospital, March 29.

Robert Sewell Johnston, Orange, Texas; Vanderbilt University, Nashville, Tenn., 1882; University of Nashville, Tenn., 1883; aged 57; died in San Antonio, about March 7.

Frederick Blecker Callin, Akron, Ohio; Ohio Medical University, Columbus, 1893; aged 63; who had been spending the winter in St. Augustine, Fla.; died suddenly, March 28.

John N. Thomas, Reed City, Mich.; Grand Rapids, Mich., Medical College, 1903; Hahnemann Medical College, Chicago, 1904; aged 37; died, March 29, after a surgical operation.

Herbert S. Hill, Springfield, Mo.; Rush Medical College, 1869; aged 76; a member of the Missouri State Medical Association; died in a hospital in Springfield, April 1.

James Mortimer Bodwell, Phenix, R. I.; Medical School of Maine, Brunswick and Portland, 1894; aged 51; a member of the Rhode Island Medical Society; died, March 25.

Eli L. Eberhard ⊕ South Whitley, Ind.; Medical College of Ohio, Cincinnati, 1880; aged 62; local surgeon for the Nickel Plate and Vandalia systems; died, March 30.

John W. Nabersberg, St. Paul; Medical Department, University of Iowa, 1865; aged 91; a veteran of the Civil War; died, March 24, from hemorrhage of the bladder.

Charles Van Hook Ingle, Evansville, Ind.; University of Pennsylvania, Philadelphia, 1902; aged 41; died at the home of a relative at Los Angeles, recently.

Isaak Moskovich Zimmerman ⊕ San Diego, Calif.; Imperial University, Warsaw, Poland, 1885; aged 56; died, March 15.

Goldsby King ⊕ Selma, Ala.; Medical College of the State of South Carolina, Charleston, 1880; aged 63; died, April 5, from acute dilatation of the heart.

Edward Thayer Twitchell ⊕ Ashmont, Boston; Harvard University Medical School, 1886; aged about 60; died, April 6, in Santa Barbara, Calif.

Samuel Lowry Wiggins ⊕ McKeesport, Pa.; Jefferson Medical College, 1873; aged 71; surgeon to the McKeesport Hospital; died, April 3.

James Keirl Gilder, Newberry, S. C.; University of the City of New York, 1878; aged 64; died in the Columbia, S. C., Hospital, April 6.

William O. Hitchcock ⊕ Dallas, Ga.; Southern Medical College, Atlanta, Ga., 1889; aged 57; died, March 31, from cerebral hemorrhage.

Hiram H. Shafer, Alliance, Ohio; Western Reserve University, Cleveland, 1882; aged 65; died, March 31; from cerebral hemorrhage.

John William Dodson, Rochester, N. Y.; University of the City of New York, 1888; aged 55; died, March 24, from cerebral hemorrhage.

George Pitkin Cooley, New Britain, Conn.; Homeopathic Medical College of Pennsylvania, Philadelphia, 1862; aged 91; died, April 2.

Winfield Kennedy Sharp, Pendleton, S. C.; Louisville, Ky., Medical College, 1874; aged 74; a Confederate veteran; died, March 18.

Thomas R. Carothers, Rock Hill, S. C.; Medical College of Virginia, Richmond, 1877; aged 65; died, March 31, from heart disease.

William A. Yeagy, Dillsburg, Pa.; Jefferson Medical College, 1890; aged about 57; died about April 3, from malignant disease.

Abraham B. Bradford, Belleview, Tenn.; Vanderbilt University, Nashville, Tenn., 1881; aged 67; died, April 4, from pneumonia.

Robert F. Wichterich ⊕ Cape Girardeau, Mo.; Barnes Medical College, St. Louis, 1899; aged 52; died in his office, April 2.

Vallandigham Bodey, Dayton, Ohio; Starling Medical College, Columbus, Ohio, 1895; aged 56; died, about March 23.

Theodore Pachali, Reading, Pa. (license, Berks County, Pa., 1881); aged 74; a practitioner since 1865; died, March 26.

Elmer E. Gible, Philadelphia; University of Pennsylvania, Philadelphia, 1893; aged 53; died, April 6, from pneumonia.

Frank Worthington Wilson, Muskegon, Mich.; University of Michigan, Ann Arbor, 1879; aged 65; died, March 21.

Royal Lee Hobbs, Reisterstown, Md.; Johns Hopkins University, Baltimore, 1918; aged 25; died, March 29.

Jeremiah A. Proctor, Union City, Ind.; St. Louis University, 1844; aged 90; died, April 7.

Marriages

LIEUT. ALBERT GOULD WENZELL, M. C., U. S. Navy, Washington, D. C., to Miss Emma Pettit of Harrisburg, Pa., on board U. S. S. *Mercy*, at Brooklyn Navy Yard, April 8.

THOMAS STEVEN CULLEN, Baltimore, to Miss Mary Bartlett Dixon of Baltimore and Easton, Md., at Princeton, Md., April 6.

WILLIAM AUGUSTUS DEAN, Tulsa, Okla., to Miss Fannie Belle Hamilton of Seneca, S. C., at Tulsa, April 3.

ALEXANDER F. ROBERTSON, Staunton, Va., to Miss Frances Sexton of Hazelhurst, Miss., March 26.

ALBERT VALE HUFFMAN, South Bend, Ind., to Miss Maude Tiner of Indianapolis, February 14.

OLIVER HAZARD PERRY PARRIGAN, Monticello, Ky., to Miss Mai Akers of Sonora, Ky., April 7.

LARCUS B. ALLEN to Miss Mary Vaughn Shealy, both of Alexander City, Ala., April 5.

MARSHALL BURR CATLETT to Miss Ethel Bercot, both of Fort Wayne, Ind., March 30.

DOUGLAS LAMAR HEAD, Concord, Ga., to Miss Adel Smith of Atlanta, Ga., March 25.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SOME ADULTERATED OR MISBRANDED MINERAL WATER

Harris Spring Water.¹—The Harris Springs Water Co., Harris Springs, S. C., shipped some Harris Spring Water in January, 1917, from South Carolina to Georgia. Examination of this water by the Bureau of Chemistry disclosed *B. coli* in small quantities; the total number of organisms growing on agar at 37 C. exceeded 100 per c.c.; molds and liquefying organisms were also found. The government officials charged that the water was adulterated for the reason that it consisted in part of a filthy, decomposed, and putrid animal and vegetable substance. It was also declared misbranded as the quantity of the contents was not plainly and conspicuously marked on the outside of the package. In October, 1918, the company was found guilty and fined \$25.—[*Notice of Judgment No. 6613; issued March 22, 1920.*]

Sprudel Concentrated Spring Water.—The West Baden Springs Co., West Baden, Ind., in August, 1917, shipped a quantity of "Sprudel Concentrated Spring Water," which was adulterated and misbranded. Examination by the Bureau of Chemistry showed that six out of eight bottles examined contained bacilli of the colon group and the product was declared adulterated because it contained "filthy and decomposed animal or vegetable substance." It was declared misbranded because the label stated that the water was "fortified with some of the natural products of the water" when as a matter of fact it contained added salts not obtained from the West Baden Springs. Furthermore, it was declared misbranded because it was falsely and fraudulently represented as a treatment for gout, rheumatism, diabetes and obesity "whereas in truth and in fact it was not." In November, 1918, the company pleaded guilty and was fined \$100 and costs.—[*Notice of Judgment No. 6641; issued March 22, 1920.*]

American Apollinaris Mineral Water.—The Standard Bottling and Extract Co., Boston, in the name of the American Apollinaris Co., shipped in December, 1915, a quantity of "American Apollinaris Mineral Water" which was adulterated and misbranded. It was adulterated in that a product other than Apollinaris Water had been substituted in whole or in part for Apollinaris Water. It was misbranded, first because the label falsely and misleadingly represented to purchasers that the article was Apollinaris Water when it was not, and further, because the quantity of the contents was not plainly and conspicuously stated on the outside of the package. In September, 1919, the company entered a plea of *nolo contendere* and was fined \$25.—[*Notice of Judgment No. 6661; issued March 29, 1920.*]

Robinson Spring Water.²—The Robinson Springs Co., Pochontas, Miss., shipped in July, 1917, a quantity of Robinson Spring Water. The government charged that this article was misbranded because certain therapeutic or curative claims made on or in the trade package were false and fraudulent and applied knowingly and in reckless and wanton disregard of their truth or falsity. The false and fraudulent statements were such as to lead the purchaser to believe that Robinson Spring Water was effective as a remedy for Bright's disease, diabetes, dropsy, cystitis, gout, rheumatism, indigestion, kidney and bladder troubles when in truth and

in fact it was not. One C. L. Bradley appeared in the suit claiming the water as his property and denying that the therapeutic claims were false and fraudulent. Bradley averred that many reputable physicians had testified to the therapeutic value of this water in the treatment of the diseases for which he recommended it. Judge Jack in delivering his charge to the jury emphasized the fact that the government was not attacking the water as bad or unfit for use but was attacking the therapeutic claims made for it. In his charge Judge Jack had the following pertinent comments to make on the Food and Drugs Act:

"The Pure Food and Drugs Act is one of the best laws of its character placed on the statute books in many years. It simply means that a man shall correctly brand or label that which he ships in interstate commerce, that the purchaser must be informed of the character of the article bought, and must not be deceived as to its curative properties, in other words, that the drug must not be sold under false representations.

"Barnum, the veteran showman, used to say that the American people like to be humbugged. That is, perhaps, more or less true. Consequently, a man who deliberately bets his money on a shell game, or who invests his savings in a gold brick, receives, and is entitled to, little sympathy. There is, however, a class of people, not ordinarily over credulous or gullible in ordinary matters of business, who, when stricken with a fatal malady, like drowning men, grasp at straws, and fall easy victims to quack doctors and patent medicine fakers. Such a man, when told by his physician that his case is hopeless and his days numbered, against his own better judgment, tries one nostrum after another in the desperate hope that he may find a cure. Such a man is the more easily persuaded to buy an alleged remedy whose efficacy he may doubt if he knows that it is at least perfectly harmless. These remarks are made to impress on your minds the wisdom of the law and the importance of its strict enforcement.

"If the water in question has the qualities attributed to it by the owner, it is not only his right to so advertise it but is to the interest of the public that he should do so. On the other hand, if the water has not the qualities ascribed to it, then such false advertising by labels on the bottles should be suppressed, and the deception of the public should be stopped."

The jury returned a verdict for the government and on Feb. 25, 1919, a decree of condemnation and forfeiture was entered.—[*Notice of Judgment No. 6623; issued March 22, 1920.*]

Ferro-Manganese Regent Spring.—The Excelsior Springs Mineral Water and Bottling Co., Excelsior Springs, Mo., shipped in May, 1917, a quantity of "Ferro-Manganese Regent Spring." The product was declared misbranded because it was falsely and fraudulently represented "as a remedy for alcoholism, chronic rheumatism, dyspepsia, diabetes, Bright's disease, albuminuria, dropsy, sciatica and insomnia, when, in truth and in fact it was not." Furthermore, the quantity of the contents was not plainly and conspicuously marked while the label was so worded as to deceive and mislead purchasers into the belief that it was a natural mineral spring water when in fact it was an artificial carbonated water. In December, 1918, the company pleaded guilty and was fined \$15 and costs.—[*Notice of Judgment No. 6665; issued March 29, 1920.*]

Indoor Life and Tuberculosis.—There is every reason to assume that the habitual inhalation of air vitiated by dust, the products of respiration, combustion and decomposition, and by the possible presence of toxic fumes and gases, plays an important rôle in the causation of respiratory diseases. All the injurious effects are intensified when human beings are obliged to occupy rooms with an air supply insufficient for the proper oxygenation of the blood, and also when, because of inadequate floor space, contact infections are more frequent. As a result of these adverse conditions we note an undue prevalence of consumption, pneumonia and septic sore throat in crowded workshops, dwellings, prisons and, formerly, also in military barracks and on battleships.—G. M. Kober, *Pub. Health Rep.*, March 26, 1920.

1. This is the second case of misbranding of Harris Spring Water; the other case is described in Notice of Judgment No. 4441.

2. This is the fourth case of misbranding of Robinson Spring Water; the other cases are described in Notices of Judgment Nos. 4072, 4073 and 6467.

Correspondence

EXPERIMENTAL WORK ON CAUSATION OF LETHARGIC ENCEPHALITIS

To the Editor:—In THE JOURNAL, March 27, Dr. Simon Flexner published a comprehensive article on encephalitis lethargica. On page 868 he refers to the experimental work which my associates, Drs. Loewe and Hirshfeld, and myself have done on the etiology of the disease in transmitting it to rabbits and monkeys. In this reference he states that apparently they did not succeed in infecting those animals by inoculating the affected nerve tissues themselves." This is an error in statement, probably due to an oversight on the part of Dr. Flexner.

In the *New York Medical Journal*, May 3, 1919, we described the successful inoculation of a *Macacus rhesus* monkey with an emulsion of brain from an encephalitis patient. An emulsion of the brain of this animal was injected intracerebrally into another *Macacus*, and we reported that this animal developed a hemiparesis six days after the inoculation. Despite the period intervening between the inoculation and the development of symptoms, the paralysis was thought to have been due to hemorrhage following the infection, and we reported "lesion possibly traumatic." Subsequent study of this brain revealed that, in addition to the hemorrhage and necrosis, the typical vascular lesions of encephalitis were found, and we reported this observation in the *Journal of Infectious Diseases*, November, 1919. In the same article we also reported the successful inoculation of a rabbit with a filtrate of the other hemisphere of the same brain, which had been preserved in 50 per cent. glycerin for six months. We therefore feel that we have succeeded in infecting animals by inoculating the affected nerve tissues.

ISRAEL STRAUSS, M.D., New York.

"THE CAUSE OF ABSCESS OF THE LUNG AFTER TONSILLECTOMY"

To the Editor:—Dr. Clendening, in his article in THE JOURNAL, April 3, 1920, protests against the use of the motor-driven ether apparatus. He says: "These ingenious little mechanisms force ether into the posterior pharynx, under what is really a very high [sic] pressure." The instruments which I have used daily for years—the Yankauer and the Beck-Mueller instruments—produce *no pressure* in the posterior pharynx, as can be demonstrated by holding a piece of lint in the back of the throat. The ether enters the mouth through a curved cannula and is thrown against the buccal wall external to the molar teeth, and from there the current is thrown more upward than toward the posterior pharyngeal wall and the glottis. It sounds like a joke to hear one say that "the pressure balloons out the posterior pharyngeal space" and that it "impedes coughing." None of these things have ever occurred with the machines with which I am familiar. This apparatus enables the anesthetist to maintain a constant anesthesia, and thus aids materially the operator to do his work in a surgical manner. In the presuction and motor-driven-ether days a tonsillectomy was the dirtiest piece of surgery imaginable. Now it is a respectable procedure. The patients never vomit and they inhale less blood, less pus and less vomitus.

His second conclusion—that there is a "direct relation between the tonsil and the lung"—seems unwarranted. The Doctor's argument for a direct infecting channel from the tonsil to the apex of the lung does not seem at all convincing. The lung is enclosed in a serous sac, one portion of which covers the lung and the other the parietal wall, and there is

no possible way of having a direct infection without having a previous inflammation and adhesion of the walls of the pleura. One would conclude from the Doctor's inference that there is an unknown open lymphatic sewer drain direct from the tonsil to the apex of the lung. The case he cites to prove his contention certainly does not prove anything except that the whole bronchial tree is more or less of a reservoir for the infectious material which drops down from the mouth, the sinuses and the tonsils.

The relief of such cases as he referred to, i. e., a troublesome bronchitis relieved after removing infected tonsils, has been the experience of thousands of men. This knowledge is so common that many of the laity come to the specialist and ask to have the nose, tonsils and sinuses examined for a focus of infection. In a series of more than a thousand consecutive tonsillectomies done under local anesthesia by myself and immediate colleagues, there has not been a single instance in which so much as a bronchitis developed after the operations. It would seem, then, if such a serious infection was so frequent, and their path of infection such a straight channel, that certainly one out of a thousand of our cases might have shown some kind of infection.

As to the matter of stopping hemorrhage, we are scolded as maudslers. If the Doctor knows of a *noli tangere* method of stopping a hemorrhage, please let us have it. It is a very simple matter to sew up a tonsillar cavity, and by properly placing one's sutures, a sufficient pressure can be brought to bear to control almost all postoperative hemorrhage. I have never seen a case of bronchitis nor lung abscess from sewing up a tonsil cavity. I, too, agree that unnecessary probing or sponging in the cavity is detrimental. He mentions one of Dr. Richardson's cases of lung abscess following the sewing up of a tonsil, and attributes the abscess to that operation. Did not Dr. Richardson give ether to stop his hemorrhage, and could not the abscess be attributed to either the ether or the insufflation of infected mucus and blood?

If the Doctor expects to "retain the confidence of the rest of the profession" he will have to give us more evidence of his "direct path from the tonsils to the lung," and he will have to *show* some of us men who have used the invaluable so-called pressure anesthesia apparatus for years without any evidence whatever of harm that it is really harmful.

OSCAR WILKINSON, M.D., Washington, D. C.

To the Editor:—An interesting article entitled "The Cause of Abscess of the Lung After Tonsillectomy" by Logan Clendening, M.D., appeared in THE JOURNAL, April 3. The argument is: Lung abscesses have occurred rather frequently of late years; motor apparatus for anesthesia has been used rather frequently of late years; therefore lung abscesses are caused by motor apparatus. Therefore motor apparatus are to be discontinued until we find that they are not to blame, on which finding they may presumably be used again. The author has nothing to say of the rather important question of measured pressure, of ether concentration, or of the precise point of delivery of the vapor. I have assisted at many hundred tonsillectomies done by insufflation anesthesia and have never witnessed "ballooning of the posterior space." Nor have I ever seen pressure per se impede coughing. The refutation of this absurd notion is thrust on one only too often in the presence of a reduction in the concentration of the anesthetic vapor.

One is impelled to ask: Wherein lies the peculiar viciousness of a motor apparatus, as compared with its predecessor, the foot bellows? Is it because it is electrical, complicated, rather more difficult to manage, and more expensive to buy and maintain? To insist on the discontinuance of motor apparatus implies the cessation of insufflation anesthesia. Inhalation methods alone remain. Ether by inhalation will

not maintain anesthesia in adults suffering tonsillectomies. More powerful agents must be employed. We are familiar with chloroform maintenance. We know its advantages and its dangers. Some of our best operators prefer this method in expert hands. As a routine, chloroform has been used with decreasing frequency. It is being replaced by ether insufflation.

I know of no better way to protect the patient against the possibility of lung abscess than a strict adherence to the correct details of a properly conducted insufflation method. These details are essentially as follows: The delivery of the vapor must be made intranasally through catheters which terminate below the base of the tongue, behind and below the tonsils and any subsequent hemorrhage. By this means, blood, saliva, and portions of tonsil are blown into the mouth away from the larynx. The volume of air delivered should be sufficient for the respiratory needs, from 15 to 20 liters a minute. The pressure should not exceed 30 mm. of mercury. The concentration of ether should remain between 60 and 70 mm. vapor tension.

The latter part of the article will give the nose and throat surgeon food for thought. It appears that there are cases of lung abscess in which motor apparatus have not been used. The familiar relationship between tonsil and lung must therefore account for this. The surgeon is told not to dabble in the denuded area (presumably the tonsillar fossa). He is also consoled with the thought that there is "no good reason for getting out every particle of tonsillar tissue," this being quite impossible unless done "at the first step of the operation."

PALUEL J. FLAGG, M.D., New York.

"PRONUNCIATION OF DUODENUM"

To the Editor:—The inquiry of a librarian (THE JOURNAL, April 10, 1920, p. 1040) as to how to pronounce a simple word like "duodenum," which can be found in any dictionary—and by any dictionary I do not mean a medical dictionary, but one by professional lexicographers and philologists—emboldens me to ask the question I have long had in mind: Why not a dictionary by the American Medical Association? Perhaps the librarian had looked in the regular dictionaries, and the physicians whom she heard using the word had never looked.

There are about half a dozen medical dictionaries on the market now, all covering the same field approximately, and there is little choice among them, although each publisher claims an advantage for his. In these days of efficiency and scarcity of paper, one dictionary ought to be enough for the medical profession in this country. Few of the existing dictionaries are bold enough to indicate clearly the quality of vowels, being content for the most part to point out the stressed syllables. The derivations of the words are variously given. Rarely a definition is poorly given or misleading. In one instance I recall having seen a technical word misspelled and correctly spelled in the same dictionary, and correctly defined in each place.

The ideal medical dictionary would be one edited by a board of lexicographers and philologists. The definitions would be originally supplied by specialists in various medical branches. The pronunciations would be clearly indicated by the use of all the diacritical marks and characters employed by regular dictionaries of the English language. The derivations of the words would be clearly explained, and when from the Greek the original type would be employed. If one is intelligent enough to appreciate Greek in Latin characters he would surely appreciate it in the original type. Unusual terms would have a reference to the original use.

A philologist's choice should be indicated in such words as anemia, anaemia; leucemia, leucaemia; leukemia, leukaemia; poik-, poek-, pek-, poic-, poec-, pecillocyte, spirochaeta, spirochaita, spirocheta. As well ask a lexicographer to diagnose a neoplasm under the microscope as to let the average medical man settle such spellings.

The abstractors of Current Medical Literature for THE JOURNAL, and the compilers of the splendid *Quarterly Cumulative Index* published by THE JOURNAL, are in excellent position to find all the new words used in medicine. Once such a dictionary has gotten under way, a yearly supplement could be furnished to each subscriber. In a five year period a new edition could be put out. "Why not?"

M. W. LYON, JR., M.D., South Bend, Ind.

TITLES TO HIDE THE IDENTITY OF DRUGS

To the Editor:—At its next meeting, the U. S. Pharmacopeial Convention should consider the giving of technical names to those drugs the names of which are practically the same in English and in Latin, for the reason that the physician often wants to prescribe these drugs and does not want his patient to know what he is ordering. Such drugs include quinin, morphin, codein, cocain, strychnin, and there may be others that I do not at this moment recall. In this city "pulv. cinchonae fortior" is ordered when quinin is wanted. Outside of this city no one would know what was desired. I order erythroxylinæ when I want cocain; some druggists do not know what I want. As we have acetylsalicylic acid for aspirin, or acetphenetidin when phenacetin is wanted, so we should have technical names for the other drugs. I hope to be present at the convention for the revision, when it meets here. I hope it will give this matter careful consideration.

C. R. DUFOUR, PHAR.D., M.D., Washington, D. C.

[COMMENT.—We question the need for Pharmacopeial titles for salts of quinin, morphin and cocain especially designed to hide the identity of these drugs from the patient. Patients who are sufficiently intelligent to recognize terms such as cocainæ hydrochloridum, morphinæ sulphas or quininæ sulphas may be trusted to know the identity of the drugs which they are taking—particularly since the Harrison Narcotic Law safeguards the use of narcotic drugs.—Ed.]

THE OLD QUESTION: THE DISCOVERER OF ANESTHESIA

To the Editor:—In THE JOURNAL, April 10, 1920, Dr. S. Adolphus Knopf directs attention to the discovery of ether as an anesthetic agent by Dr. William T. G. Morton, and expresses the hope that a statue of that distinguished physician may be placed in the Hall of Fame.

While it is generally accepted that Dr. Morton made an independent discovery of ether as an anesthetic, and applied it practically at the Massachusetts General Hospital, Oct. 16, 1846, it is likewise believed that sulphuric ether was employed as an anesthetic by Dr. Crawford W. Long as early as March 30, 1842. On that occasion Dr. Long removed a growth from the neck of a Mr. James Venable, the original bill for that service being still in existence.

It would appear, then, that Dr. Long applied ether in practical use more than four years before Dr. Morton called attention to its anesthetic properties. Unfortunately, Dr. Long delayed in announcing his discovery, and to him no credit can be given for acquainting the world at large with this great blessing. But ample proof has been produced to show that the Georgia physician was the first to discover ether anesthesia, so that further argument on the subject would seem unnecessary. S. J. LEWIS, M.D., Augusta, Ga.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TUBERCULOSIS AMONG ESKIMOS—TREATMENT OF LEUKOPLAKIA

To the Editor:—1. Please give me reference or information relative to the frequency of tuberculosis among the Eskimos. 2. What can you say of the treatment of leukoplakia?

A. E. HUBBARD, M.D., Peoria, Ill.

ANSWER.—1. Franz Boas (Ann. Rep. Bureau Am. Ethnol. 6, 1884-1885) and E. W. Hawkes (Canada, Geol. Survey, Mem. 91, 1916) comment on the prevalence of infectious respiratory diseases among the Eskimos of Alaska and Labrador. Dr. Grenfell (Labrador, the Country and the People, New York, Macmillan Company, 1910) writes: "Consumption is the main enemy of these people who live here in one of the purest atmospheres in the world" (p. 178). "The worst enemy of the Eskimo is, again, tuberculosis, and from that in one form or another most of the people die" (p. 179). "During fifteen years of medical mission work on the coast of North Newfoundland and Labrador, I have discovered that one out of every three or four deaths on the coast is due to tuberculosis" (pp. 256-257).

2. It is impossible to outline adequately the treatment for leukoplakia in a patient one has not seen. In general, it is recommended that the teeth be examined and cared for by a competent dentist; that abstinence from tobacco and similar irritants be enforced; that complicating conditions, such as syphilis, receive appropriate attention. In the early stages of the disease, mild astringents and alkaline mouth washes are employed. In long standing and advanced cases, caustics, such as 20 per cent. chromic acid; freezing with carbon dioxide snow, roentgen ray and radium are utilized. The condition is one best treated by a competent dermatologist.

ORGANIZATION AND CONDUCT OF HOSPITAL FOR DIAGNOSTIC PURPOSES

To the Editor:—Can you tell me if there is a publication which gives, in outline, how to organize, finance and conduct a small hospital for diagnostic purposes? Kindly advise me as to where such information could be secured.

RALPH GETELMAN, M.D., Philadelphia.

ANSWER.—A brief article describing an institution especially designed for this purpose appears under Medical Education, Registration and Hospital Service, in the adjoining column. See also:

- Birtch, F. W.: A "Group Study" Plan for a Diagnostic Team Acting as a Laboratory for the Profession, *THE JOURNAL*, May 27, 1916, p. 1672.
- Behlow, W. W.: Group Study, *THE JOURNAL*, Feb. 3, 1917, p. 360.
- O'Neill, B. J., and Pollock, R.: Analysis of First Two Hundred Cases Studied at San Diego Diagnostic Group Clinic, *California State J. Med.*, Butler Building, San Francisco 16: 428 (Sept.) 1918.
- Knapp, H. B.: Cooperation Among Doctors, *THE JOURNAL*, May 16, 1914, p. 1578.
- Lewis, F. P.: Group Study, a Necessity in Ophthalmic Research, *THE JOURNAL*, Nov. 22, 1919, p. 1617; June 28, 1919, p. 1893.
- Gutmann, J. H.: Cooperation in Medicine, *Albany M. Ann.*, Albany Medical College, Albany, N. Y., October, 1912.
- Cabot, R. C.: Better Doctoring for Less Money, *Am. Magazine*, April, 1916, p. 7.
- Axtell: Team Work in Medicine, *J. Kansas M. Soc.*, 303 Commerce Building, Topeka, Kan., September, 1916.
- Medical Partnerships—So-Called Group Plan, *Bull. M. & Chir. Fac. Maryland*, 1211 Cathedral Street, Baltimore, June, 1916.
- Blain, A. W.: Development of Private Pay Clinic, *J. Michigan M. Soc.*, 91 Monroe Avenue, Grand Rapids, Mich. 17: 354 (Sept.) 1918.
- Davis and Warner: Dispensaries and Their Management and Development, New York, the Macmillan Company.

PRIVILEGES ACCORDED PHYSICIANS DRIVING AUTOMOBILES

Information is desired as to what towns or counties have passed ordinances, police regulations, etc., giving special privileges to physicians driving automobiles. It is desired to know how these privileges were granted—by city ordinance or by police regulations—and specifically what the privileges are. Address *THE JOURNAL*.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.
- GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
- HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.
- ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
- LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
- LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.
- MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
- NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
- NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
- NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.
- NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.
- TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
- WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

A CLINIC BUILDING FOR THE PRACTICE OF GROUP MEDICINE

E. L. MYERS, M.D., N. M. WHITEHILL, M.D., AND
B. T. WHITAKER, M.D.
BOONE, IOWA

This clinic building has been designed and built for the use of three physicians in order to secure the advantages of



Fig. 1.—Front elevation of clinic building for practice of group medicine.

economy and efficiency that come with the grouping of several practices in a single plant. The building is a face brick and Bedford stone structure, 40 by 72 feet, one story, although built on a foundation sufficient to carry two or more stories. It stands on a prominent corner lot 40 by 100 feet, 28 feet of which is used for a garage for three cars. The building, including the garage, is heated from the central heating plant of the city. An open court at the rear is used for ambulance emergency cases, as it is easily accessible to the roentgen-ray department. Intercommunicating telephone and signal call light systems are used.

The general arrangement is fairly well described by the accompanying illustration of the floor plan. The reception room, 15 by 24 feet, opens just off the front vestibule, and on the opposite side is the library, which at times is used for the overflow from the reception room. The corridor leading from the reception room to the offices of the three physicians has a floor covered with carpet. The vestibule floor is of hand made flemish tile. Each physician has a private suite of two rooms, fitted to suit his peculiar needs, consisting of a consulting room and a treatment, examination or operating room. The latter is finished in white enamel,

having tile floors and hospital metal furniture. The interior is finished in Circassian walnut, except the work rooms and laboratories, which are enameled. A rest room is provided for women, children and those who have to wait long for treatments, roentgen-ray or laboratory tests, etc. The laboratory is completely furnished for chemical, bacteriologic and microscopic work, and is in charge of an expert technician. In the roentgen-ray department the latest equipment, both for treatment and diagnosis, has been installed. The transformer room and developing room are lined with lead. Complete physical therapy equipment has been installed for the treatment

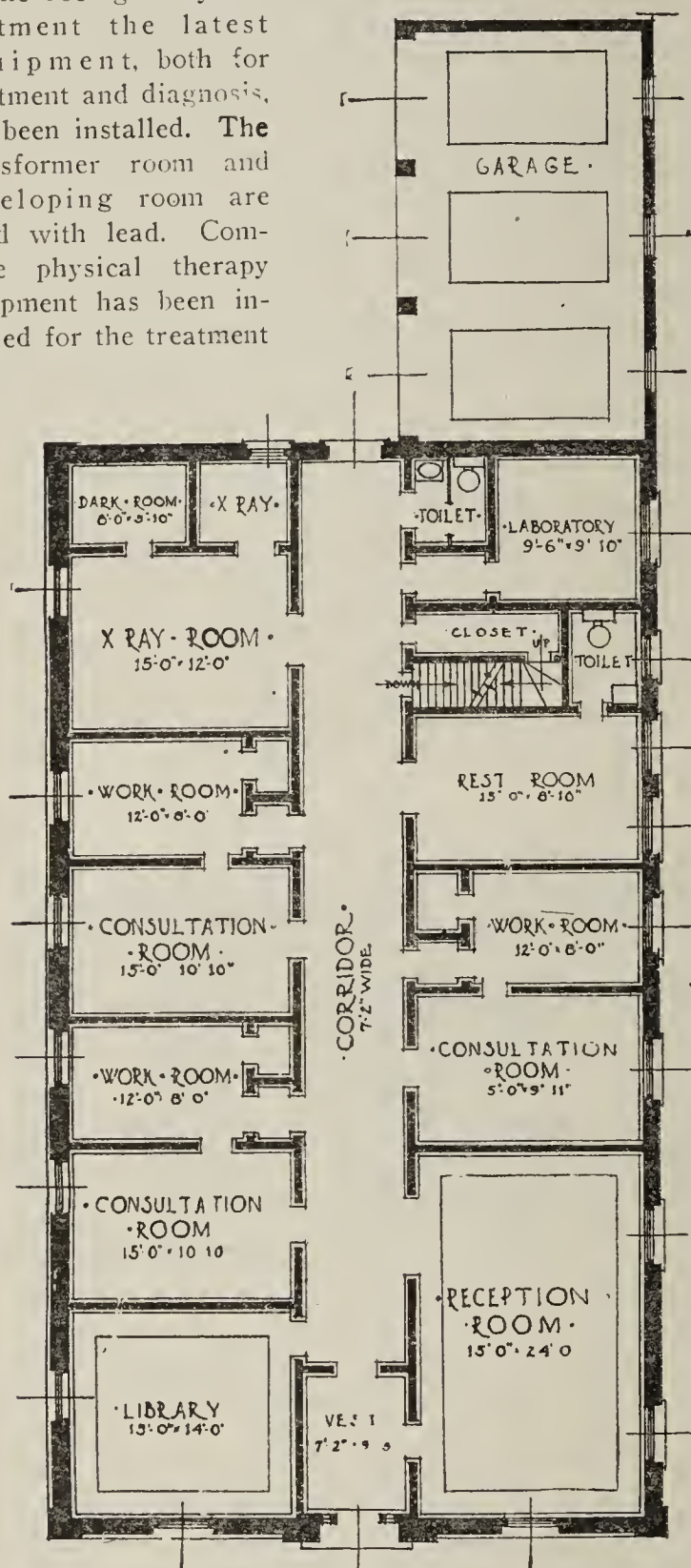


Fig. 2.—First floor plan, 40 by 72 feet, including garage.

of skin diseases, joint and muscular conditions, tuberculosis, neurasthenia, etc. The building was erected in 1919 at a cost of \$25,000, including interior light fixtures, decorating, heating, plumbing and electric wiring.

The medical and surgical work will be handled as specialties, and as the work increases, plans will be carried out for enlarging the building by extending the first floor or adding a second story. The business of the organization is carried on through the main office by a salaried manager. The building and equipment are owned and controlled by a corporation, while the business is carried on as a partnership, the running expenses being paid out of a common fund and the members of the partnership sharing in the net income.

The results so far have more than justified this radical move from the generally accepted methods of practice; and if the proper organization can be effected, with men selected for their peculiar fitness, with energy, enthusiasm and consideration for all members of the organization, and free from dissensions and jealousies, the plan is bound to grow as it means better service and greater efficiency. If our short experience is any criterion, we are very optimistic regarding the future of this plan.

Alabama January Report

Dr. Samuel W. Welch, chairman of the Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 13, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. Five candidates were licensed by reciprocity. One candidate was licensed on Army credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College	(1914)	80.2
University of Oklahoma	(1915)	81.6
University of Pennsylvania	(1908)	88.3
Memphis Hospital Medical College	(1913)	79
Vanderbilt University	(1919)	84.6, 86.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago Medical College	(1881)	Wisconsin
Tulane University	(1918)	Louisiana
Omaha Medical College	(1890)	Illinois
Vanderbilt University	(1917)	Tennessee
University of Texas	(1911)	Texas

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Virginia	(1912)	U. S. Army

Dr. Welch also reports that one candidate, a graduate of the University of the South in 1906, received a license to practice medicine, March 10, 1920, through reciprocity with Louisiana.

Arizona January Report

Dr. Ancil Martin, secretary of the Arizona Board of Medical Examiners, reports the written examination held at Phoenix, Jan. 6-7, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 16 candidates examined, 11 passed and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles	(1916)	86.3
Rush Medical College	(1903)	92.4, 86.9
Kansas Medical College	(1910)	84.1
Washington University	(1910)	83.3
University of Buffalo	(1918)	81.6, 83.4
Jefferson Medical College	(1900)	98.9, 90.2
Vanderbilt University	(1917)	76
University of Virginia	(1895)	88.5

College	FAILED	Year Grad.	Per Cent.
University of Louisville	(1893)	83.1
Baltimore Medical College	(1904)	81.4
American Medical College	(1892)	71.6
Eclectic Medical University, Kansas City	(1918)	54.9
St. Louis Medical College	(1885)	70.8

Hawaii January Report

Dr. J. R. Judd, secretary of the Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, Jan. 13-15, 1920. The examination covered 8 subjects and included 64 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 5 passed and 6 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Johns Hopkins University	(1915)	88
Cornell University	(1916)	82
University of Pennsylvania	(1913)	85, 78
Tokyo Imperial University	(1916)	73

College	FAILED	Year Grad.	Per Cent.
Bennett College of Eclectic Medicine and Surgery	(1898)	67
Detroit Homeopathic College	(1909)	67
Nagasaki Special Medical School	(1906)	69
Osaka Prefecture Higher Medical School	(1907)	68, 57
Tokyo Charity Hospital Special Medical School	(1915)	68

Social Medicine and Medical Economics

THE HEALTH PROBLEMS OF A SMALL CITY

C. H. MAYO, M.D.
ROCHESTER, MINN.

Serving the community as health officer has long, but mistakenly, been looked on as a lowly and trouble-making occupation. When the constitution of the United States was written, general public health problems were not recognized. In order to make the constitution acceptable to a people who had left Europe because of a desire for freedom, the personal liberty and privilege of the individual was made as unrestricted as possible. As the states developed, health problems increased but, from lack of knowledge of both conditions and methods, were relatively few until a recent period. The city charter was usually drawn for the appointment of a health officer by the council at a salary of \$150 a year. The health work was seldom well looked after, as the position was usually a political one, the appointee being too busy or not adapted to the work. The average salary of state health officials is only \$4,000 or \$5,000 a year, inadequate to be sure, but the fault has been with the profession. The city attorney was more important and better paid.

For several weeks in 1908, Rochester suffered from a continued epidemic of scarlet fever. I called a public meeting to discuss the problem and pointed out that the city was getting a bad name for its failure to control contagious disease, and that farmers feared to come to town to trade; this appealed to the business men. The council chamber was stormed, and the health officer resigned; I was asked to accept the position the same evening, and accepted the appointment. The council granted \$2,000 a year for an expense account; there was also several hundred dollars a year income from fees. I appointed a deputy health officer, half time, at \$1,500 a year, and an assistant inspector, half time, at \$50 a month, also a clerk at \$50 a month; and I donated the office, light and heat.

I was later elected to the city school board, a most harmonious and progressive group of individuals, its president a woman. Since then we have sold and rebuilt all but one of the city schools, and have built a high school covering a city block, as well as six fire-proof buildings, housing in all more than 2,000 children. In the high school commercial courses are given, as well as manual and vocational training; there are classes in cooking, dressmaking and housekeeping for the girls. Here also we have a great swimming tank with a gymnasium for the girls and one for the boys, with a physical director for each group; an attractive and instructive moving picture exhibit is given usually twice a week. There is a large school band and orchestra. Military training and drill have been given for the last three years (not compulsory), with most of the older boys in uniform. Here we give the first two years of the regular university course under state supervision at one seventh of the expense at which it can be obtained by nonresidents at the state university. This results in about four times as many of our students securing advanced education as those in other places, and these boys and girls are more mature when they leave home to complete the course at the university amid city surroundings. We have a school nurse who keeps watchful care of absentees. If there is sickness among the children of the poor, the health officer is notified either by the school nurse or the city nurse, the latter being supported by the civic league. The state conducts a school for the care and education of backward children at a cost to the state of several hundred dollars a year for each child; it will allow \$100 a year for each child for the education of these children in their home city. Few such children receive any education, as their parents keep them at home. The local

school board, on investigation, gathered in sixty-six such children, and bought an automobile for the school nurse, who calls for several of these children who could not otherwise attend school. We conduct four such so-called "opportunity rooms" with practically no expense to the city. We are now developing a baby clinic and child welfare clinic with a special nurse and rotating medical service, all under the supervision of the health officer. It is hoped that this will give the health officer a full and continuous record of all the children in the city.

It may be asked, Why speak of this school work? From the health office standpoint our greatest trouble in the control of disease comes from the great mass of un-Americans who resist health control of contagious disease as an affront to their personal liberty. This is also true of those who are naturalized, and we have 14,000,000 unnaturalized foreign population, of whom 7,000,000 cannot speak English. By this practical instruction of the children in health work, and by following up the instruction, we secure results which will make these children demand public health protection in the future for their children, as their right while receiving education. In the fall, when school opens, the health officer secures, on request, the services of several physicians of the city, and a complete record is made of each child's general condition on entering school; this examination is of appearance, weight, eyes, ears, throat and physical condition. All previous diseases are recorded on the card, and each year it is added to as the physical health record during school life. The city dentists donate their services, and have established a dental clinic at the high school. All poor children receive free treatment for throat troubles, and free glass fitting.

Inspection of dairy cows and barns is very essential to control bovine tuberculosis and to prevent milk-borne disease. Small cities are denied this protection, although it is shown in many sections of our country that from one eighth to one fourth of the milch cows slaughtered are tuberculous. After two years of effort, mostly educational, with the public and the council, we secured the passage of an ordinance to compel the tuberculin test, with stable and milk production inspection and bacterial tests. The mayor promptly vetoed the ordinance and so we called a public meeting; this time I wished the women to be present, as the mother will fight for the best health interests of the child; the father, a business man, is afraid he will antagonize a customer or a possible one if he takes a pronounced stand in new or progressive movements to which there is opposition. The influence of this meeting justified the council in passing the ordinance over the mayor's veto.

A city veterinarian was then appointed. The next step was to secure the passage of a garbage ordinance under the control of the health office. I then secured a small farm of 30 acres, 2 miles from the city, equipped it and started a hog-feeding farm, and constructed hog houses, waterworks and concrete feeding platforms. I built two small houses and barns for the collectors, and purchased an auto truck, horses and collecting wagons. The garbage is collected from all parts of the city three times a week; a charge of 10 cents a week is made to residences, but there is no charge to hotels. Hogs are purchased weighing from 60 to 80 pounds, double treated with vaccine and serum for cholera, and sold when they weigh from 225 to 300 pounds. During the last year the place has paid for itself, and I presented the outfit together with more than \$2,000 accumulated funds and \$5,000 worth of hogs to the city of Rochester for the use of and to be under the control of the city health department. During 1919, hogs costing \$14,100 were purchased and sold for \$29,200. In this manner the health department is financially aided.

The development of the plan has been of fascinating interest to me.

Book Notices

THE DISEASES OF INFANTS AND CHILDREN. By J. P. Crozer Griffith, M.D., Ph.D., Professor of Pediatrics in the University of Pennsylvania. Two volumes. Cloth. Price, \$16 net. Philadelphia: W. B. Saunders Company, 1919.

The author has presented a review of the diseases of infants and children that is well-nigh encyclopedic. He has consulted a vast amount of medical literature, periodicals and textbooks, and discusses the whole subject in a systematic manner.

He first describes the development of the fetus, and then considers the hygiene of infancy, devoting considerable space to amusements, training, sleep, exercise and other factors in infant disturbances—simple factors that are too often overlooked in the search for obscure causes. The section on sleep is interesting, although the author seems to have overlooked a recent analysis by Strauch which has special reference to psychic factors. The section on breast-feeding is complete, and presents many practical suggestions. In discussing artificial feeding in the first year, Griffith points out the essential features of the two methods known as percentage feeding and the caloric method. He shows that the caloric method is, in the nature of things, an impossibility, without a knowledge of the percentage composition of the milk mixture. In his description of calculations for preparation of correct milk mixtures, the author again presents the card first published in *THE JOURNAL* in 1918, which is an excellent ready reference for easy calculation.

The fifth chapter concerns foods other than milk, and the sixth, proprietary and special named mixtures. "The proprietary foods," the author says, "are unreliable and unnecessary: unreliable, because they are never the perfect substitute for mothers' milk, in spite of the claims of the manufacturers; unnecessary, because it is rare that they cannot be entirely dispensed with." Diet after the first year and diet in sickness are considered, after which the author takes up the characteristic diseases in infancy and in childhood. In the latter section he gives an excellent outline as to the methods of examination and diagnosis, the significance of individual symptoms, a brief discussion of infant mortality, and a general discussion of therapeutics as especially applied in infancy. This concludes the first division of the book.

The second division takes up the diseases of infancy and is divided into twelve sections, in which are discussed diseases of the various body systems—circulatory, respiratory, etc. In this discussion the author shows familiarity with current American and foreign periodical literature and gives due credit for phrases or facts which are borrowed. The treatment recommended is usually rational and simple. The author makes no mention under either measles or scarlet fever of attempts at the use of convalescent serum, although this subject has received considerable attention in recent literature. In the treatment of whooping cough, he is not convinced that vaccines have any value, but believes their use, both as prophylactic and curative is relatively harmless, and may be tried experimentally. In his discussion of the etiology of mumps, he gives many references to foreign literature, but has overlooked some important American investigations: Tunnicliff et al.

In the discussion of poliomyelitis, the after-treatment of the paralyzes seems somewhat meager. The extensive studies of Lovett and others of the Boston school deserve mention. Infantile scurvy receives notable attention, but in this case, references to much work done since 1914 are missing and constitute a serious oversight. In this part of the book, pages 610 and 611, several typographic errors are noted. A special chapter is devoted to the diatheses. The author points out that the old view as to the diatheses was succeeded by a tendency to believe that such peculiar systematic reactions do not exist, but that recently it has been found that the diatheses do, in fact, exist. He classifies the diatheses as a "constitutional peculiarity which acts as a predisposition." Special attention is given to the spasmophilic,

lymphatic, neuropathic and exudative types. In the discussion of digestive disturbances, there are colored plates of the types of infant stools, which are instructive.

These volumes will be found especially helpful by the general practitioner who is confronted with children's practice. A well-arranged and fully detailed index to each volume and a general index will enable him to turn quickly to practical discussions of many difficult problems. The books are well printed and beautifully illustrated. There are more than 400 excellent half-tones and twenty fine colored plates.

A PRACTICAL TREATISE ON OPHTHALMOLOGY. By L. Webster Fox, M.D., LL.D., Professor of Ophthalmology, Medico-Chirurgical College Graduate School. Cloth. Price, \$8. Pp. 831 with 306 illustrations. New York: D. Appleton and Company, 1920.

In the new edition of his admirable treatise the author has not only eliminated all ambiguous expressions that may have accidentally appeared in his former work, but also, by incorporating new symptoms, new points of diagnosis and new methods of treatment, has brought it strictly up to date. An especially noteworthy feature of the book is an appendix containing surgical operations, observations on military ophthalmology, and a very large formulary. To all who recognize Dr. Fox's skill as an operator, the technic of his own operation for the relief of conical cornea is of special interest. The operation of excision of the tarsal cartilage in trachoma, which has been ignored in most textbooks, is fully described. The chapters dealing with the various ocular manifestations in constitutional and nervous diseases, subjects passed over very superficially in many textbooks, are discussed in detail. The profusion of illustrations, the happy selection of subjects for the colored plates, and the general typographic excellence of the book will undoubtedly assure the author of a most hearty reception by his professional colleagues.

ARITHMETIC OF PHARMACY. By A. B. Stevens, Ph.D., Ph.C., College of Pharmacy, University of Michigan. Fourth edition. Cloth. Price, \$1.50 net. Pp. 100. New York: D. Van Nostrand Company, 1920.

This practical little book well covers the field expressed by its title. The mathematics of pharmacy is complicated by the necessity of changing from metric to apothecaries' measure and vice versa; by the fact that there are three kinds of thermometers used for measuring heat, and by the custom of writing formulas for solutions by percentages of the various ingredients. The methods and figures given in Stevens' book will save considerable time for those finding such calculations necessary. Each department is followed by suggestive problems, and their solution will be a valuable exercise for pharmaceutic and medical students, as well as for physicians.

COMMON DISEASES OF THE SKIN WITH NOTES ON DIAGNOSIS AND TREATMENT. By G. Gordon Campbell, B.Sc., M.D., C.M., Lecturer on Dermatology and Pediatrics, McGill University. Cloth. Price, \$4. Pp. 229, with illustrations. New York, the Macmillan Company, 1920.

This gives in alphabetical order the commoner diseases of the skin. Fully half the book is taken up with halftones made from photographs which are reasonably good. The text contains nothing but a very short description of the symptoms and a similarly short outline of treatment. With the greatest desire to be indulgent to it, no reason can be found by the reviewer for the publication of such a book, in the face of the existence of a number of really excellent elementary books on skin diseases.

MODERN SURGERY: GENERAL AND OPERATIVE. By John Chalmers DaCosta, M.D., LL.D., F.A.C.S., Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia. Eighth edition. Cloth. Price, \$8 net. Pp. 1697, with 1177 illustrations. Philadelphia: W. B. Saunders Company, 1919.

This book—a standard work which has made itself a place in American surgery—is now in its eighth edition. The author indicates that the book does not include all of the work done during the war, for sufficient time has not elapsed to place a just estimate on such work. The book is, however, complete and up to date, and is well illustrated.

Medicolegal

Liability for Typhoid Fever Contracted on Boat

(*Chicago, D. & G. B. Transit Co. v. Moore et al. (U. S.), 259 Fed. R. 490*)

The United States Circuit Court of Appeals, Sixth Circuit, in affirming decrees in favor of eight out of eleven libelants who sought damages for illnesses alleged to have been contracted on a steamer from Detroit, says that it has no difficulty in affirming the conclusion that contaminated water was, during several hours at least, and through the steamer's negligence, provided for the passengers on board. The boat ran aground in Hay Lake, a broadening out of St. Mary's River, about 12 miles below the Soo, and was not released for about six hours, her sea cocks, from which water was supplied to the boat, being embedded in the mud. When she was released, water was pumped from the river into the fresh-water system, without being sterilized or even filtered, and without any attempt to get rid of the mud in the sea cocks except by blowing out with steam. The record indicated that the water of the river at the point from which the water in question was taken was unfit for human consumption; and the boat's officers recognized this, and did not themselves drink it, nor allow the crew to drink it, the faucet ordinarily available to the crew being wired up. Nor was the water served on the table. But neither the faucets in the staterooms nor the fountains in the saloon were sealed, nor was any notice given to passengers that the water obtainable therefrom was not wholesome. In this the steamer was clearly negligent; for it could not be assumed that passengers would refuse to drink the water merely because it was roily.

As opposed to these and kindred considerations were the facts that the water in question was not shown by actual analysis to have contained the typhoid germ; that other methods of infection, as by flies, milk and otherwise, were possible; and that the possibility of infection by other means than the water in question was not conclusively negated. In fact, it must be conceded that the existence of the typhoid germ in the water taken from the river, and served on board the boat, was not proved beyond all possible doubt. But such degree of proof was not necessary. A preponderance of the evidence, a showing of greater probability, was all that was required, and in this court's opinion the evidence preponderated in favor of the final conclusion of the court below. Indeed, there were several features which, taken together, persuasively pointed to that conclusion, including (a) the fact that so large a number of typhoid cases was shown to have developed on the boat; and (b) that, so far as appeared, there were no typhoid cases among the passengers on a sister ship which passed over the course at approximately the same time, but which did not take water from the river.

Each of seven of the libelants having been attended throughout his illness by a reputable local physician, and in each case the disease having been pronounced unquestionably typhoid or of that nature, and treatment given accordingly, this court must reject the contention that the testimony of these physicians was unreliable because based only on clinical symptoms. The most that the court would be justified in concluding here is that, in the absence of confirmation by laboratory tests, a clinical diagnosis of typhoid fever is not absolutely conclusive. But the results of evidence in cases of this nature do not require absolute scientific certainty, and the court thinks the testimony of the attending physicians established, by a fair preponderance of the evidence, the existence of typhoid or similar fevers. That in the case of each of several of the libelants, expert medical witnesses of high standing expressed the opinion that, on the hypotheses contained in the question submitted to them, the patient was not suffering from typhoid fever, at most raised only a question of fact.

The court also thinks that there was sufficient evidence in the case that one of the libelants contracted arthritis as a result of drinking the impure water, and that in another

passenger an attack of gallstones was the direct and immediate result of typhoid fever caused by drinking the water.

An award of \$1,500 damages as actual compensation for pain and suffering from typhoid fever, the court holds cannot be considered excessive; and in addition to that, it approves of various allowances for loss of time and services to business, while, in the gallstone case, in addition to the allowance for pain and suffering from typhoid fever, \$2,000 for past and future suffering on account of the gallstone trouble, as well as \$1,545.69 for medical expenses incident to the typhoid fever and gallstone trouble combined, are approved.

Chiropractor as Assistant to Regular Physician

(*State v. Young (Mo.), 215 S. W. R. 499*)

The St. Louis Court of Appeals says that the defendant, who was charged with practicing medicine without a license from the state board of health, admitted that he was a chiropractor, but contended that he was engaged as an assistant to a regularly licensed physician, and offered evidence to that effect, which was excluded. But such exclusion was not error, as the defendant could not escape the effect of the statute by showing that in practicing his profession he was employed by another and acted under another's direction. Under the law of Missouri, one engaged in chiropractic is practicing medicine. However, the judgment of conviction in this case was reversed, and the cause remanded, because the verdict being general in character was bad, in view of the fact that the information charged separate and distinct offenses, namely, practicing medicine, attempting to practice medicine, and advertising as a physician, without a license. The verdict should have been specific as to whether he was guilty of one or the other of the offenses, or of all of them. As it was, some of the jury may have believed him guilty of one of the offenses, and some of another, while he was entitled to have twelve men believe him guilty of either one or all of the stated violations of the statute.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.

Alpha Omega Alpha Honorary Fraternity, New Orleans, April 26.

American Association for Thoracic Surgery, New Orleans, May 1.

American Association of Anesthetists, New Orleans, April 26-27.

American Association of Physicians, Atlantic City, May 4-5.

American Climatological and Clin. Assn., Philadelphia, June 17-19.

American Gastro-Enterological Assn., Atlantic City, May 3-4.

American Gynecological Society, Chicago, May 24-26.

American Laryngological Association, Boston, May 27-29.

American Medico-Psychological Assn., Cleveland, O., June 1-4.

American Ophthalmological Society, Hot Springs, Va., June 15-16.

American Otological Society, Boston, May 31-June 1.

American Pediatric Society, Highland Pk., Ill., May 31.

American Psychopathological Assn., Cleveland, O., June 5.

American Radium Society, New Orleans, April 26.

American Surgical Association, St. Louis, May 3-5.

American Therapeutic Society, Philadelphia, May 7-8.

Arkansas Medical Society, Eureka Springs, June 8-9.

Assn. for Study of Internal Secretions, New Orleans, April 26.

Association of American Peroral Endoscopists, Boston, June 1.

Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.

California State Medical Society, Santa Barbara, May 11-13.

Connecticut State Medical Society, New Haven, May 19-20.

Georgia Medical Association, Macon, May 6-8.

Illinois State Medical Society, Rockford, May 18-20.

Iowa State Medical Society, Des Moines, May 12-14.

Kansas Medical Society, Hutchinson, May 5-6.

Louisiana State Medical Society, New Orleans, April 24-26.

Maryland, Med. and Chir. Faculty of, Baltimore, April 27-29.

Massachusetts Medical Society, Boston, June 8-9.

Medical Veterans of the World War, New Orleans, April 26-27.

Michigan State Medical Society, Kalamazoo, May 25-27.

Mississippi State Medical Association, Jackson, May 11-12.

Nebraska State Medical Association, Omaha, May 24-26.

New Hampshire Medical Society, Concord, May 12-13.

North Dakota State Med. Assn., Minot, June 15-16.

Ohio State Medical Association, Toledo, June 1-3.

Oklahoma State Medical Association, Oklahoma City, May 18-20.

Rhode Island Medical Society, Providence, June 3.

So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.

Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.

West Virginia State Medical Association, Parkersburg, May 18-20.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

March, 1920, 159, No. 3

- *Physical Signs of Foreign Bodies in Bronchi. T. McCrae, Philadelphia.—p. 313.
- *Oculopupillary Fibers of Sympathetic System: Division of First Thoracic Root in Man. W. G. Spiller, Philadelphia.—p. 325.
- *Epidemic Acute and Subacute Nonsuppurative Inflammations of the Nervous System Prevalent in the United States in 1918-1919: Encephalitis; Encephalomyelitis; Polyneuritis; Meningo-Encephalo-Myeloneuritis. L. F. Barker, E. S. Cross and S. V. Irwin, Baltimore.—p. 337.
- *Pleural Effusion with Inversion of Diaphragm Producing an Abdominal Tumor; Acute Pulmonary Edema Following Tapping. D. Riesman, Philadelphia.—p. 353.
- *Retroperitoneal Liposarcoma: Chemical Analysis. E. F. Hirsch and H. G. Wells, Chicago.—p. 356.
- Vascular Reactions in Vascular Hypertension. J. P. O'Hare, Boston.—p. 369.
- Dangers of Ascariasis. B. C. Crowell, Rio de Janeiro, Brazil.—p. 380.
- *Evidence of Nephritis and Urinary Acidosis. J. H. Barach, Pittsburgh.—p. 398.
- *Association of Fever with Fracture of Skull. A. O. Wilensky, New York.—p. 402.
- Subcutaneous Emphysema: Complication of Influenzal Pneumonia. Report of Seven Cases. J. Meyer, Chicago, and B. Lucke, Philadelphia.—p. 417.
- *Gross Pathology of Influenzal Pneumonia in France. H. Bakwin, New York.—p. 435.
- Chronic Nontuberculous Lung Infection. C. G. Field, Iowa City, Iowa.—p. 442.
- *Psychologic Theory of Cause of Epilepsy: Special Reference to Abnormal Muscular Expression of Strong Emotional Drive. C. A. Marsh, Newcastle, Ind.—p. 450.

Physical Signs of Foreign Bodies in Bronchi.—Decreased expansion on the affected side, the presence of very fine râles and the "asthmatoïd wheeze," McCrae regards as signs of value in the diagnosis of foreign body in a bronchus. Some foreign bodies, such as a peanut, set up a very acute general process which is fairly distinctive. Other structures, such as metallic objects, cause permanent changes, usually in a lower lobe. The chief errors in diagnosis are to mistake the signs for those of pneumonia in the early stages and in the acute cases, and for tuberculosis after the body has been present for some time.

Oculopupillary Fibers of Sympathetic System.—The conclusion is formulated by Spiller that in man the oculopupillary fibers do not decussate, or at least in very slight degree, in the pons or below this in the medulla oblongata or cervical cord. In two cases of tubercle of the pons, which is a lesion destroying the axis cylinders where it exists and not permitting them to pass through as does glioma, the oculopupillary symptoms were on the side of the lesion. Spiller has repeatedly seen oculopupillary paralysis of the sympathetic on the side of the lesion resulting from occlusion of the posterior inferior cerebellar artery. This occlusion produces softening in the lateral part of the medulla oblongata. Spiller admits the possibility that the sympathetic fibers may decussate in the cerebral peduncle, but says the evidence of this is far from conclusive.

Encephalitis.—In the experience of Barker and others a cell count in the cerebrospinal fluid of from ten to 100 small mononuclears, along with a positive globulin reaction, with negative Wassermann and negative bacteriologic smears and cultures, is, at the time of an epidemic of encephalitis, strong corroborative evidence of the existence of the disease in a patient in whom the process is for any other reason suspected to exist. Negative findings in the cerebrospinal fluid do not, however, rule out the disease. The clinical course of the disease is discussed and eight cases are analyzed. A very fine list of selected references is given, including papers of importance as earlier sources of conception of nonsuppurative encephalitic syndromes; papers on nonsuppurative encephalitis by American authors (before the present epidemic); papers on the pathologic anatomy and histology of nonsuppurative encephalitis; papers on the recent epidemic of nonsuppurative encephalitis North American, South

America, Great Britain, France, Oceania (Australia), Austria, Germany and Africa.

Pleural Effusion with Inversion of Diaphragm Producing an Abdominal Tumor.—On the occasion of a necropsy, Riesman found in the left upper abdominal quadrant a large, smooth, tense tumor, which on further exploration, proved to be a bag made by the inverted diaphragm and filled with pleural fluid. Since then he has seen this tumor twice, clinically. The condition is a mechanical result of great intrapleural pressure.

Retroperitoneal Liposarcoma.—Hirsch and Wells report the microscopic and chemical examination of a retroperitoneal liposarcoma without myxomatous elements, weighing 69 pounds, being the largest solid tumor on record. It illustrates the capacity of malignant tumors to store up protein and fat, despite extreme emaciation of the host.

Evidences of Nephritis and Urinary Acidosis.—The observation made by Barach show that in the most severe type of exertion (Marathon race), albumin and casts and red blood cells occur in all individuals. The casts were of the broad and narrow, hyalin and granular variety. Some of the casts showed red and white corpuscles. The amount of albumin was greatest in those who ran strenuously, finishing earliest, from three hours and fourteen minutes to four hours and fifteen minutes. Observations of the blood pressure and pulse rate in these cases showed that the largest amount of albumin and blood and casts occurred in those individuals who showed the greatest degree of circulatory disturbance. This was manifested by a marked fall in both the maximum blood pressure and in the pulse pressure. In the less strenuous type of exertion are usually found an increased urinary acidity, albuminuria, cylindruria and, at times, blood cells. A critical analysis of these findings, however, shows, first of all, that in the more strenuous effort the amount of albumin, the presence of blood cells and the number and type of casts all depict a more serious renal disturbance than is found in the less strenuous form of exercise. Urinary acidity was increased after exercise in 85 per cent. of the cases, but it did not occur more frequently, nor was the acidity higher in the severe exertion cases than in the milder ones. There is a positive relationship between the degree of albuminuria and cylindruria and the type of physical exertion; but these observations show that no such relationship can be established between the urinary acidity and the occurrence of albumin, casts and blood cells in the urine.

Association of Fever with Fracture of Skull.—Fever occurred in fifteen of a series of seventy-two cases of fracture of the skull recently studied by Wilensky. In another series of cases of fracture of the skull admitted to the hospital in a different period of time, twenty-two patients of a total of seventy-seven developed fever. In the fifteen febrile cases of the first series the fractures were situated in the posterior fossa in six cases and in the middle fossa in two cases; in the others the fractures were distributed over the vertex and sides of the skull. One fracture was compound externally; one communicated with the middle ear and two fractures with the nasal cavities; the others were all closed fractures. Eight of the patients who developed fever died; in four of these the cause of death was a meningitis.

Pathology of Influenzal Pneumonia in France.—One hundred and six necropsies are analyzed by Bakwin. Changes in the rectus muscle were observed in 33 per cent. of the cases. Empyema was rare, occurring in less than 4 per cent. of the cases. Acute laryngitis was comparatively rare, occurring in only six out of thirty-eight larynges examined (16 per cent.). Sphenoid sinusitis was a very common complication and was found in twenty out of twenty-two cases examined (90 per cent.). Seven out of thirty-five ante-mortem blood cultures showed pneumococci. The rest were sterile, with the exception of one, which showed a meningococcus. The bacteria found in the organs at necropsy were varied; *Streptococcus hemolyticus*, the pneumococcus, staphylococcus, nonhemolytic streptococcus, *B. influenzae* and gram-negative cocci being found in the various cases in the order of frequency given above.

Cause of Epilepsy.—Marsh is of the opinion that epilepsy is an abnormal muscular reaction to strong mental states. It is an abnormal expression because such muscular activity does not gain the end for which the emotional state was generated. It is unnatural, also, since it is effort undirected. The epileptic, because of his peculiar make-up cannot avoid the dangers of too great stress as the normal man meets it, but by an emotional drive that cannot be readily checked, labors on to mental exhaustion in unconsciousness. This is not deep enough to involve the motor of life centers of the brain, so a convulsion takes place. Viewing epilepsy in this light, it is now possible, in treating this disorder, to institute more rational methods than has previously been had in surgical procedure and in empirical therapy.

Archives of Internal Medicine, Chicago

March 15, 1920, 25, No. 3

- *Studies on Arthritis in Army, Based on Four Hundred Cases. R. Pemberton and J. W. Robertson, Philadelphia.—p. 231.
- *Id. Basal Metabolism in Arthritis. R. Pemberton, Philadelphia, and E. H. Tompkins, Boston.—p. 241.
- *Id. Studies on Nitrogen, Urea, Carbon Dioxid Combining Power, Calcium, Total Fat and Cholesterol of Fasting Blood Renal Function, Blood Sugar and Sugar Tolerance. R. Pemberton, Philadelphia, and G. L. Foster, San Francisco.—p. 243.
- *Method of Analyzing Electrocardiogram. H. Mann, New York.—p. 283.
- *Irritation of Vagus and Hemorrhagic Erosions of Stomach. K. Nicolaysen.—p. 295.
- *Clinical Studies on Respiration: VI. Comparison of Various Standards for Normal Vital Capacity of Lungs. H. F. West, Boston.—p. 306.
- Experimental Determination of Influence on Abnormal Cardiac Rhythms on Mechanical Efficiency of Heart. J. A. E. Eyster and E. C. Swarthout, Madison, Wis.—p. 317.
- *Platelet Count and Bleeding Time in Diseases of Blood. H. C. Gram, Copenhagen.—p. 325.

Arthritis.—Of four hundred cases of arthritis studied by Pemberton and Robertson, it was found that 256 patients had arthritis only; 112 had a combination of arthritis and myositis; twenty-two had myositis only; seven had nerve involvement (neuritis) only, and three were listed as doubtful. One hundred and seven persons were taken sick in the apparent absence of demonstrable surgical foci. Two hundred and ninety-three persons showed demonstrable surgical foci. Of this latter number 208 showed foci in the tonsils. One hundred and thirty-four persons in the entire series were positive for a genito-urinary focus. Seventy-eight showed a combination of both dental and tonsillar foci. It was also found that thirty-eight persons showed some combination of foci other than dental and tonsillar, as for instance dental and genito-urinary or tonsillar and genito-urinary.

Basal Metabolism in Arthritis.—Of the twenty-nine cases studied by Pemberton and Tompkins, 80 per cent. showed a metabolism within normal limits; 20 per cent. showed a metabolism slightly below normal limits. The metabolic data give no explanation for this deviation. From the respiratory quotients no abnormality can be detected in the percentage of calories obtained from the three foodstuffs. Nothing abnormal was found in the pulse, temperature or minute volumes of air breathed at the times of the determinations. In the cases showing a basal metabolism below the normal limits, no particular relation could be determined between the severity of the disease, age or condition of the patient (whether active or bed-ridden), atrophy of muscle, edema or other factors.

Studies on Nitrogen, Urea, Etc., in Arthritis.—In a series of sixty-seven observations in fifty-seven cases of chronic arthritis, the fasting blood nitrogen fell within normal limits in all but two cases. One of these patients had cirrhosis of the liver and renal calculus. He gave 45.4 mg. of nitrogen per hundred c.c. of blood. The other patient had a chronic arthritis of one knee. He gave 38.5 mg. The carbon dioxid combining power of the blood in seventeen cases of chronic arthritis fell well within normal limits. The same was true of the calcium of the circulating blood, and the total fat and cholesterol of the fasting blood. The authors go into considerable detail in their discussion of a definite relation between the intake of food on the one hand, and the inci-

dence or perpetuation of symptoms of the disease on the other in cases of chronic arthritis. This relation is best illustrated by the fact that the institution of a reduced diet in appropriate cases may be followed by marked benefit. Of the three foodstuffs, the evidence at hand, although not yet complete, has indicated that carbohydrate is most concerned in this connection. Studies were carried out in sixty cases of arthritis on the fasting level of the blood sugar and on the response of these cases to the so-called glucose tolerance test. The results are given in full. Experience suggests that the sugar tolerance test may sometimes be helpful to indicate whether all foci of infection have been removed. The disturbance of the sugar tolerance due to focal infection, apparently accompanies the failure of the organism successfully to maintain its wall of defense and is apparently restored to normal when this defense returns. In this light a lowered tolerance, following on a focus, becomes an intermediary, or, at least, a concomitant step in the pathology of arthritis and possibly other conditions as well.

Analyzing Electrocardiogram.—A new method is presented by Mann in which the ordinary three leads of the electrocardiogram are combined in a single curve, the monocardigram. The usefulness of this method of analyzing the electrocardiogram is explained.

Irritation of Vagus and Stomach Erosions.—All of Nicolaysen's experimental observations were made on animals. Ten cases in human beings were observed clinically. In the first group of six cases, irritation of the vagus was produced during the course of the illness which in every case was situated in the brain or its membranes. In the second group of three cases the disease involved the chest, the lungs and pleura being the seat of infiltrating processes. In a case of cancer of the breast with metastases in the lung and pleura there was infiltration of the vagus and symptoms of vagus paralysis. In one case, one of peritonitis with empyema, it is possible that there may have been involvement of the nerves of the stomach in the abdomen as well as in the thorax, although the proof that such was the case cannot be supplied. The vagus nerves and the nerves of the stomach in these ten cases should have been examined microscopically, but the material was gathered originally in the course of a study of ulcer of the stomach; it was only later that Nicolaysen's attention was directed to the hemorrhagic erosions of the stomach in these cases. The results of the study shows that in most of the cases in which hemorrhagic erosions were found, there had been irritation of the vagus or the possibility of such irritation. To conclude from these cases that hemorrhagic erosion always results from irritation of the vagus does not seem warranted, in Nicolaysen's opinion. It is possible, that in some of these cases it concerns a coincidence. However, Benke's results and the pilocarpin experiments in rabbits favor the conclusion that vagus irritation may cause erosions.

Determination of Normal Vital Capacity.—A group of 129 persons were studied by West for the purpose of comparing various standards for determining the normal vital capacity. A standard based on the body surface area is advised, since it has been shown that the vital capacity varies with this function more uniformly than with others tried. When the weight of the patient cannot be obtained, a standard based on the height is recommended.

Platelet Count in Diseases of Blood.—The method of Oluf Thomsen for counting the platelets in citrated plasma is described by Gram. The number of platelets in normal individuals lies between 200,000 and 500,000. The platelets are diminished in number in pernicious anemia, in most cases of lymphatic leukemia and in some cases of myeloid leukemia. Normal values are found in hemophilia, and augmented values are found in many cases of simple anemia and some of myeloid leukemia. The diagnostic and prognostic importance of the platelet count in diseases of the blood is discussed. The bleeding time determination of Duke helps to disclose a latent hemorrhagic diathesis due to platelet deficiency, as symptoms may not appear without a provocative cause. It is shown that platelet counts of less than 100,000 per c.mm. generally cause a tendency to bleed. The counting of the

platelets and determination of the bleeding time is considered by Gram as of extreme importance as a preoperative measure, especially in cases of aplastic anemia, in which an operation often is performed for explorative, occult cancer being suspected.

Boston Medical and Surgical Journal

March 11, 1920, 182, No. 11

- Malignancy and Radiation. Study of Relation of Structure of Cancer Tissue to Radiation. F. Bryant, Worcester, Mass.—p. 263.
 Cesarean Section. N. W. Emerson, Boston.—p. 272.
 Next Step in Campaign for Infant Welfare. Education of Women of Nation for Motherhood. I. W. Brewer, Watertown, N. Y.—p. 276.

Journal of General Physiology, Baltimore

March 20, 1920, 2, No. 4

- Device for Regulating Temperature of Incubators Either Above or Below Room Temperature. J. H. Northrop, New York.—p. 309.
 Hereditary Adaptation of Organisms to Higher Temperature. J. H. Northrop, New York.—p. 313.
 Stereotropism as a Function of Neuromuscular Organization. A. R. Moore, Woods Hole, Mass.—p. 319.
 Regeneration and Neoteny. E. Uhlenhuth, New York.—p. 325.
 Comparative Studies on Respiration. Toxic and Antagonistic Effects of Magnesium in Relation to Respiration of *Bacillus Subtilis*. M. M. Brooks, Cambridge, Mass.—p. 331.
 Intensity and Process of Photoreception. S. Hecht, Omaha.—p. 337.
 Labyrinth and Equilibrium. Mechanism of Dynamic Functions of Labyrinth. S. S. Maxwell, Berkeley, Calif.—p. 349.
 Studies in Dynamics of Histogenesis. Tension of Differential Growth as Stimulus to Myogenesis. E. J. Carey, Omaha.—p. 357.
 Nature of Directive Influence of Gravity on Arrangement of Organs in Regeneration. J. Loeb, New York.—p. 373.
 Cause of Influence of Ions on Rate of Diffusion of Water Through Collodion Membranes. J. Loeb, New York.—p. 387.
 Effect of Temperature on Facet Number in Bar-Eyed Mutant of *Drosophila*. J. Krafka, Jr., Urbana.—p. 409.

Journal of Immunology, Baltimore

November, 1919, 4, No. 6

- *Influence of Desiccation on Natural Hemolysins and Hemagglutinins in Human Serum. J. A. Kolmer.—p. 393.
 *Nature of Thermolabile Hemolysins. J. A. Kolmer, Philadelphia.—p. 403.
 Complementary and Opsonic Functions in Their Relation to Immunity. A Study of the Serum of Guinea-Pigs Naturally Deficient in Complement. H. D. Moore, Burlington, Vt.—p. 425.

Influence of Desiccation on Natural Hemolysins and Hemagglutinins.—Kolmer maintains that drying normal human serum on cover glasses and in paper at ordinary room temperatures frequently results in marked or complete deterioration of the normal isohemagglutinins. Deterioration of these normal isohemagglutinins is especially evident within the first to fourth days after the serums have been dried. Similar results were observed with hemagglutinins in normal human serums for the corpuscles of the lower animals. Human serums containing large amounts of normal hemagglutinins when dried under ordinary conditions and properly kept in a refrigerator may prove satisfactory for microscopical tests for at least two weeks, due to the presence of sufficient agglutinins escaping destruction. Only such serums should be used for drying and tests should be made at the end of the first week to determine if agglutinins are present before the cover glasses are used for the typing of bloods. The hemolysins found in normal human serums for the corpuscles of persons and the lower animals also deteriorate on desiccation under ordinary conditions and are somewhat more susceptible than the hemagglutinins. For the grouping of blood, serums should be kept in a fluid state sealed in ampoules at a low temperature, both hemagglutinins and hemolysins in normal human serums being highly susceptible to heat.

Nature of Thermolabile Hemolysins.—The experiments reported on by Kolmer indicate that the natural hemolysins in human serums are distinct substances and not differentiated complements. Natural hemolysins are susceptible to heat being inactivated (masked) or destroyed when serums are heated at 56 C. and totally destroyed by heating at 62 C. The natural hemolysins in human serums vary in resistance to heat, antishoop hemolysin being most resistant (thermostable) and antiginea-pig hemolysin being most susceptible (thermolabile).

Medical Record, New York

April 3, 1920, 97, No. 14

- *Infection of Intestinal Origin Complicating Pregnancy, Labor, and Puerperal State. E. P. Davis, Philadelphia.—p. 551.
 *Mental Deficiency and Criminality. M. G. Schlapp, New York.—p. 554.
 Ductless Glands and Constitutional Diagnosis. J. Gutman, Brooklyn.—p. 558.
 Mental Hygiene During Childhood. I. S. Wile, New York.—p. 561.
 Electronic Reactions of Abrams: Obert Phenomena. A. Abrams, San Francisco.—p. 565.
 Psychoanalysis of Heart. A. R. De Janis, Boston.—p. 568.

Bearing of Intestinal Infection on Pregnancy.—The intestine in the human being swarms with bacteria, notably the colon bacillus. The mechanical conditions prevailing in the abdomen as pregnancy advances are such that interference with the peristalsis of the bowel and the accumulation of fecal matter during pregnancy are inevitable. In addition to this, congestion of the abdominal viscera must be present to some degree during pregnancy in the majority of patients, and a combination of these two conditions, Davis says, furnishes a state of affairs exceedingly favorable for the development of infection of intestinal origin. This may manifest itself most frequently in appendicitis, cholecystitis, infection of the lymphatics of the intestine and peritoneum, or infection of the blood stream. While some patients pass through pregnancy without the use of purgatives and laxatives this is not true of the majority. What is described is to render the fecal mass in the bowels soft and unirritating and to promote peristalsis and to keep the bowel in a tonic condition. In the use of drugs care must be taken that the ganglia in the uterine muscle are not stimulated to contraction by drugs which stimulate peristalsis of the bowel, for excessive uterine peristalsis will cause abortion. That there is danger in the prolonged retention of hard feces in the intestine of the pregnant woman has been demonstrated. What is especially needed to promote intestinal peristalsis in pregnancy is exercise by walking. Where this cannot be procured, calisthenic exercises during pregnancy are of considerable value, and should these be impossible massage by skilful hands may often be employed to great advantage. Exercise, cold bathing followed by gentle rubbing, the plentiful use of fruit, water and cereal foods, and regular and systematic attention to the matter will enable many patients to pass through pregnancy without the use of purgatives. If laxatives are necessary, refined petroleum with compound licorice powder, is often successful. In the presence of toxemia, drugs which act vigorously on the eliminative organs must be used, but without this indication purgation during pregnancy should be avoided.

Observation Hospital for Mental Defectives.—Schlapp urges the erection of a detention hospital where all persons suspected of defectiveness can be examined properly and their condition ascertained. There should be the closest of contact between this hospital and the courts and other public institutions. The proper execution of tests requires periods of fasting, quiet, and observation, which cannot be observed unless the patient is detained. Besides reception and consultation rooms, wards, recreation, and living quarters, such an institution as would meet the requirements must have laboratories fully equipped both for complete tests and research. Every provision should be made for prompt and thorough examination by a staff of specially trained observers and nurses and there should be either a sufficient endowment fund or an assured appropriation in order to prevent embarrassment, or limitation in the scope of work.

Missouri State Medical Ass'n Journal, St. Louis

April, 1920, 17, No. 4

- Pneumoperitoneum. John L. Tierney, St. Louis.—p. 137.
 *Clinical Value of Complement Fixation Test for Tuberculosis. E. P. Buddy, St. Louis.—p. 145.
 *Interpretation of Complement Fixation Reaction in Tuberculosis. George Ives, St. Louis.—p. 147.
 Medical Problems Suggested by War. Roland Hill, St. Louis.—p. 150.
 Goiter. James B. Williams, Joplin.—p. 155.
 Infection. A. C. Ames, Mountain Grove.—p. 157.

Value of Complement Fixation Test for Tuberculosis.—Buddy analyzed this test in thirty-six cases of suspected

tuberculosis. Twenty patients, or 55.5 per cent., gave a positive reaction. There were eight positive Wassermanns and six clinically diagnosed as having syphilis and tuberculosis. Of sixty-nine cases with diagnosis other than tuberculosis, twelve, or 17.3 per cent., gave positive complement fixation tests. Of the sixty-nine cases, one in every 5.7 cases gave a positive complement fixation reaction and one in every 8.6 cases gave a positive Wassermann. Buddy points out that the complement fixation test for tuberculosis is of some value in the cases of positive tuberculosis. A negative reaction in this class usually indicates far advancement with every grave prognosis. It has a clinical value as additional evidence in clinically active tuberculosis. In suspected cases it has a slight value only in being an additional factor for or against tuberculosis. A diagnosis of clinical tuberculosis cannot be made from a positive reaction, neither can tuberculosis be excluded from negative reaction. It is not of so much value in tuberculosis as the Wassermann reaction is in syphilis. It is an aid only when considered in conjunction with complete history and thorough physical examination.

Id.—Ives maintains that this test can never determine positively whether or not a patient is ill with tuberculosis. On the other hand, the results of the test are in fairly close harmony with the true condition of the patients who have been tested, and hence the test should influence judgment in arriving at a diagnosis. This test should not displace clinical observations, but if properly used it will stimulate the clinician to make more accurate and thorough observations.

Modern Medicine, Chicago

March, 1920, 2, No. 3

- Untilled Fields of Public Health. C. E. A. Winslow, New Haven.—p. 183.
- Influence of War Concepts of Mental Diseases and Neuroses. S. I. Schwab, St. Louis.—p. 192.
- Hemiplegia, Spontaneous and Traumatic. W. D. Wise, Baltimore.—p. 200.
- Industrial Medicine. N. Barnesby, New York.—p. 226.
- War Contributions to Industrial Surgery. S. R. Maxeiner, Minneapolis.—p. 231.
- Welfare Work in a Japanese Electric Plant. G. M. Price, New York.—p. 235.
- Survey of Public Health Topics. J. Schevitz, Oklahoma City.—p. 242.
- Detection of Typhoid. F. M. Meader, Albany.—p. 244.
- Reduction of Infant Mortality. D. M. Lewis, Charleston, W. Va.—p. 247.
- Trade Union Disability Insurance. B. Emmet, Baltimore.—p. 250.
- Why a Public Health Nurse? G. M. Rines, Armour, S. D.—p. 262.

Philippine Journal of Science, Manila

October, 1919, 15, No. 4

- Formosan Termites and Methods of Preventing Their Damage. M. Oshima.—p. 319.
- New Scale Insect on Rhizophora. T. D. A. Cockerell.—p. 385.
- Balantidium Haughwouti, N. Sp. Parasitic in Intestinal Tract of Ampullaria Species. W. De Leon.—p. 389.

Public Health Journal, Toronto

March, 1920, 11, No. 3

- Ventilation. J. J. R. MacLeod.—p. 101.
- Recreation as Public Health Measure. A. B. Dawson.—p. 119.
- Mentally Deficient in Ontario. J. Hodgins.—p. 126.
- Why Community Organization? A Statement of a Need and Some Suggestions for Meeting It. J. Collier.—p. 135.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, London

January, 1920, 7, No. 27

- Specimens of Long Bones in British Army Medical Museum Showing Processes of Infection and Repair. A. Keith and M. E. Hall.—p. 302.
- *Loss of Abdominal Reflexes in Affections of Abdomen. G. Williams.—p. 320.
- *"Monobloc" Operative Treatment of Tuberculous Lymphangitis; Report of Case. W. S. Handley.—p. 324.
- *End Results in Partial Amputations of Foot. S. T. Irwin.—p. 327.
- Hemangioma Group of Endothelioblastomata. J. Fraser.—p. 335.
- Morbid Consequences of Mobile Ascending Colon; Record of 180 Operations. G. E. Waugh.—p. 343.

*Results of Bridging Gaps in Injured Nerve Trunks by Autogenous Fascial Tubulization and Autogenous Nerve Grafts. H. Platt.—p. 384.

Excision of Subclavian Aneurysm. L. R. Braithwaite.—p. 390.

*Local Discoloration of Abdominal Wall as Sign of Acute Pancreatitis. G. G. Turner.—p. 394.

Gastric Ulcer: Plea for Gastrectomy: Roentgen-Ray Diagnosis. H. B. Scargill.—p. 396.

*Fracture of Atlas Vertebra. G. Jefferson.—p. 407.

Idiopathic Dilation of Sigmoid Flexure and Pelvic Colon: Recurring Intestinal Obstruction. G. H. Makins.—p. 423.

Case of Osteitis Deformans (Osteoporosis, Osteomyelitis Fibrosa), With Pronounced Affection of Forearm. H. French.—p. 425.

Loss of Abdominal Reflex in Abdominal Conditions.—

Analysis of a considerable number of cases has convinced Williams that the loss of the abdominal reflexes in abdominal conditions may be regarded as a phenomenon of fatigue of the reflex, this fatigue being caused by a previous stimulation of the reflex by a painful affection in the abdominal area; and it is suggested that the fatigue of the reflex may be cerebral rather than spinal. The local loss of the reflex, e. g., the right lower reflex in appendicitis, or the general loss of all four reflexes of a patient whose abdominal wall is in good condition, is of considerable clinical value; but its value is not absolute, and it must be determined together with the other features which go to make up the picture of the case.

Monobloc's Operative Treatment of Tuberculous Lymphangitis.—

Although the treatment of tuberculous lymphangitis by the excision of the primary focus, the affected vessels and the glands of which they are afferents, is recognized as, perhaps, the only effective treatment for tuberculous lymphangitis of the limbs, Handley doubts whether the importance of excising all the affected tissues in one piece has been properly emphasized. Obviously, if the removal is carried out in sections, the chances of a reinfection of the wound are greatly increased. He cites a case of tuberculous lymphangitis following injury to a tuberculous wart of long standing in which the result was not perfect, and the policy of attacking the recurrences, which sometimes gives such satisfactory results in carcinoma, was followed with a considerable degree of success. From the microscopic examination of many specimens, Handley is convinced that lupus vulgaris is essentially and primarily itself a lymphangitis of the cutaneous and subcutaneous lymphatics, and that it differs from "tuberculous lymphangitis" only in its slow and limited spread through the lymphatics. The principal reasons for this belief are: The plane primarily affected, namely, the superficial layer of the dermis, is the plane of origin of the lymphatic vessels of the skin. Changes in the lymphatic vessels of origin can be seen beyond the clinical edge of the area of lupus. Moreover, isolated giant cell systems can often be found in the subcutaneous tissue, showing that this layer also is affected as well as the skin, and these isolated giant cell systems are usually found close to the blood vessels, in the situation of the comitant lymphatics.

End Results in Partial Amputations of Foot.—

The conclusion reached by Irwin as the result of an investigation of partial amputations of the foot is, that, unless more of the limb can be saved than that found in Lisfranc's amputation, the function of the limb, as estimated by the man's capacity for work, his ability to keep time, and his value as a unit in the general industrial machine, will be improved by the complete amputation of the foot through the ankle joint after the manner of James Syme.

Bridging Gaps in Injured Nerve Trunks by Autogenous

Fascial Tubulization and Autogenous Nerve Grafts.—

In the eighteen operations analyzed by Platt in which fascial tubulization combined with autogenous nerve grafts, fascial tubulization alone, and autogenous vein tubulization (one case), were used, there was a complete absence of any sign of recovery. The shortest period over which observations were made was four months, the longest period twenty-six months. Secondary exploration in four cases showed complete silence of the nerve trunk to direct faradic stimulation. End-to-end suture was accomplished in all after excision of the bridged segment. At the re-exploration operations, partial or complete obliteration of the lumen of the fascial tube was noted. In two specimens examined his-

tologically, one, a tubulization alone, showed obliteration of the lumen of the tube by fibrous tissue in which no nerve fibers could be found. In the second, a graft and tubulization combined, nerve fibers were present in the center of the obliterated tubule eighteen months after the operation. There was no sign of continuity between the proximal and distal ends through this strand of nerve fibers. Platt is of the opinion that the early re-exploration of all graft and fascial bridge operations is advisable.

Local Discoloration of Abdominal Wall as a Sign of Acute Pancreatitis.—The case of a woman, aged 54 years, suffering from an acute abdominal illness of three days' duration, is cited by Turner. On the abdominal wall, surrounding the umbilicus, was an area of discoloration about 6 inches in diameter, of a bluish color, very like the postmortem staining seen on the abdominal wall or the appearance of the skin in a late case of extravasation of urine. The area was slightly raised, and pitted on pressure. The patient suffered from acute pancreatitis, with much effusion into the peritoneal cavity. She lived nine days after operation, and the postmortem examination disclosed a sloughing pancreas with much fat necrosis. In another similar case there were two large discolored areas in the loins. They were about the size of the palm of the hand, slightly raised above the surface, and of a dirty greenish color. There was a little edema with pitting on pressure, but there was no pain or tenderness. The urine was full of sugar. A diagnosis of acute pancreatitis was made; and this was confirmed by an immediate operation. Turner says he has never seen mention made of this sign.

Fracture of Atlas Vertebra.—Four cases of fracture of the atlas vertebra are described by Jefferson, and forty-two cases previously recorded in the literature are analyzed. The common cause of the accident is a fall on the head, and the probable mechanism of fracture is tension of the atlas ring due to lateral spreading of the lateral masses, owing to the divergence of the lines of force passing through the bone. Two other possible mechanisms are outlined, the head being in extreme extension, but neither fits in with the nature of the accidents usually recorded. Atlas fracture is by no means necessarily fatal; 45.7 per cent. of the patients have recovered. When complicated by a fracture of another vertebra, the mortality is higher. The commonest of such complications is a fracture of the odontoid process, next in frequency being rotary dislocation of the atlas on the axis. It is pointed out that inability to rotate the head may occur in some forms of atlas fracture. It is not pathognomonic of a broken odontoid. The accident is probably by no means uncommon, but as very clear and sharp roentgenograms are necessary in order that the fracture may be detected, the atlas injury is often overlooked. Cord injury is often absent (50 per cent.). Useful aids in diagnosis may be obtained from signs of injury to the great occipital nerve. Treatment will generally be conservative, directed to immobilizing the head by a "Minerva" plaster or a Lorenz bed.

Glasgow Medical Journal

March, 1920, **11**, No. 3

- Practical Significance of Attention to Detail in Abdominal Operations. A. E. Maylard.—p. 97.
Dr. Dover of Powder Fame. W. Downie.—p. 112.
Ocular Sequels of Malaria. W. H. Manson.—p. 127.

Journal of Laryngology, Rhinology and Otology, London

March, 1920, **35**, No. 3

- Adenomata (Glandular Tumors) of Larynx. I. Moore.—p. 65.
Anatomy of Membranous Labyrinth. J. K. Dickie.—p. 76.
Semicircular Canals: Simple Method of Demonstrating their Relative Position to Each Other and Their Planes of Incidence. J. D. Lithgow.—p. 81.
Digital Retraction of Epiglottis During Indirect Laryngoscopy. A. Ryland.—p. 82.

Journal of State Medicine, London

March, 1920, **28**, No. 3

- Sanatorium Treatment of Pulmonary Tuberculosis. J. Watt.—p. 65.
Venereal Disease: A Plea for Statesmanship. A. Corbett-Smith.—p. 86.
Public and Individual Housing Ideals. S. A. Barnett.—p. 91.

Journal of Tropical Medicine and Hygiene, London

March 1, 1920, **23**, No. 5

- Sadd Dermatitis. A. J. Chalmers and A. F. Joseph.—p. 57.
*Treatment of Three Cases of Malignant Tertian Malaria. P. J. Veale.—p. 59.

Malignant Tertian Malaria.—Veale treated three cases of malignant malaria by injecting intravenously a solution of disodium hydrogen phosphate and sodium chlorid in a strength of 3 per cent. each, the dose varying from 60 to 100 c.c., with excellent results. These patients had been given prophylactic quinin in varying doses before admission. All showed the gametes of *P. falciparum* in the blood, and the primary object was to clear these very resistant bodies from the blood. No quinin was administered during the time of observation.

Practitioner, London

March, 1920, **104**, No. 3

- Postdysenteric Colitis: Seat of Lesion and its Treatment. J. Cantile.—p. 161.
Tests for Tuberculosis of Lungs and for Consumption. H. B. Shaw.—p. 167.
Medicolegal Notes. J. Collie.—p. 181.
Dislocation of Shoulder Joint and its Treatment. A. H. Todd.—p. 186.
Modern Conceptions of Heart Disease. W. Edgecombe.—p. 197.
Recent Work on Tropical Diseases. R. T. Hewlett.—p. 210.
Cause and Treatment of Abdominal Hernia. W. B. Cosens.—p. 220.
Ciliae of Respiration. C. O. Jones.—p. 228.
Plea for Compulsory Restraint on Use of "Domestic Measures" in Administration of Medicine. H. O. Gunewardene.—p. 235.

Sei-I-Kwai Medical Journal, Tokyo

Oct.-Dec., 1919, **38**, Nos. 10-12

- *Comparative Study of Bruck and Wassermann Reactions. M. Terada.—p. 44.
Action of Adrenin and Various Extracts of Glandular Organs on Veins. Tugane.—p. 51.

Comparison of Bruck and Wassermann Reactions.—Terada made a comparative study of both reactions by using the serum of 150 syphilitic and nonsyphilitic patients whose cases were clinically diagnosed. In the primary stage of syphilis, Wassermann's reaction was positive in seventy-five cases, Bruck's reaction was positive in fifty cases; in the secondary stage (of syphilis), the former was positive in eighty-eight cases and the latter in eighty-five cases. In the tertiary stage, Bruck's reaction was positive in eighty-six cases and the Wassermann in eighty cases. In cases in which the presence of syphilis was very doubtful, the Wassermann reaction was positive in thirty-nine cases and Bruck's reaction was positive in forty cases. Finally, in nonsyphilitic cases, the Wassermann was positive in twelve cases and Bruck's reaction was positive in twenty-five cases. Bruck's reaction always showed a smaller positive percentage than Wassermann's in each stage of syphilis, while Bruck's reaction always indicated a higher positive percentage than Wassermann's in nonsyphilitic cases. Terada recommends Bruck's reaction as an aid in the diagnosis of syphilis when a complicated method, such as Wassermann's reaction, cannot be used. Naturally, however, the decision of a serious question such as the diagnosis of syphilis should never depend on Bruck's reaction alone.

Archives des Mal. du Cœur, etc., Paris

November, 1919, **12**, No. 11

- *Anemia in Young Children. E. Lenoble.—p. 481.
*Rachitis with Embryonal Bone Marrow. Idem.—p. 488.
*Functional Aortic Insufficiency. J. Bret.—p. 494.
Interpretation of Oscillometer Findings. E. May.—p. 502.

Anemia in Young Children.—Lenoble reports a case of pseudoleukemic anemia, or actual myeloid leukemia with anemia, in a child of 3, the blood picture the reverse of the usual formula in children. He comments that the rôle of hematology and pathologic anatomy has been well studied in anemia but the rôle of parasitology and serology has scarcely begun to be investigated. Another boy of 3 presented hemolytic jaundice of the pernicious anemia type, with intestinal hemorrhages for over a year. The tint was more waxy than jaundice, and the upset in the blood picture suggested

that a parasite or toxin was responsible. There was nothing to suggest syphilis in either case.

Rachitis with Embryonal Bone Marrow.—The infant of 17 months had rachitis and inherited syphilis, but Lenoble exonerates the spirochete from the responsibility for the rachitis, the blood being approximately normal. But the bone marrow of the femur showed what he calls *réviviscence embryonnaire*, of the type described by Dominici as latent myeloid reactions. This finding is particularly important in connection with the theory that rachitis is primarily a disease of the bone marrow—a reaction of the bone marrow to chronic infections and intoxications.

Functional Aortic Insufficiency.—Bret's experience with even cases seems to warn that the Corrigan syndrome without true diastolic hypotension is probably of functional nature. Functional aortic insufficiency may be found in the course of chronic nephritis, associated or not with adherent pericardium. It is a disturbance in the heart action rather frequently observed with high blood pressure. Mechanical factors elsewhere in the aorta may contribute to its production, as he explains.

Journal de Médecine de Bordeaux

Feb. 10, 1920, 91, No. 3

Cicatricial Stenosis of the Larynx in Children. E. J. Moure.—p. 59.
Sarcoma of Kidney. Oraison and Faure.—p. 60.
Variations in Acidity of Gastric Juice in Vitro. H. Barthe and Malgouyre.—p. 63.
Colloidal Therapeutics. J. Vergeley.—p. 64.

Cicatricial Stenosis of the Larynx in Children.—Moure refers to conditions left after long wearing of a tracheotomy tube. When the opening for it had been made not in the trachea but through the tissues above, the stenosis can be corrected more easily than where the opening is in the trachea itself. It is better not to attempt the operation on children under 7 or 8 as the passages are so small, and the laryngostomy followed by cleaning out the cavity and consecutive dilation may entail pulmonary complications. If the stenosis is the result merely of a bad position of the tube, correcting its position may cure the stenosis, which is inflammatory rather than cicatricial. Patience is necessary here, watching over the throat to prevent exuberant granulations around the tube, excising them from time to time and cauterizing with the actual cautery or with 1 per cent. zinc chlorid. In time the passage will become permeable, but the tube should never be discarded without ascertaining with the mirror that the vocal organ is freely permeable. The children have to be trained to breathe through the natural passages, by plugging the tube during the day and, later, at night. There is no need to use special tubes for the purpose. Even if the stenosis is from cicatricial tissue inside the larynx, it can only benefit from the above measures, being in better condition for the correcting operation when the child has reached the proper age. In a case described in a boy of 3, the tube had been introduced just below the thyroid, and the opening had filled up with granulations which had to be excised or cauterized every two weeks for over two years. Then the opening gradually healed, and three years after the tracheotomy had been done, the training of the child to breathe through the natural passages was begun. In four months the tube could be discarded, and several months later the tracheal fistula was closed. The boy is now 10 and the larynx and trachea have developed apparently normally.

Sarcoma of the Kidney.—The young man suddenly developed symptoms suggesting right pyelonephritis. Intense anemia and progressive weakness imposed nephrectomy although there was no hematuria and the functioning of the kidney did not seem to be much impaired notwithstanding the sarcomatous degeneration. The patient was too weak to rally. The whole course was less than four months.

Variations in Acidity of Gastric Juice in Vitro.—Barthe and Malgouyre present evidence that the gastric juice increases or loses in acidity on standing. Their findings showed a loss of from 10 to 33 per cent. in three cases the forty-eighth hour, and a gain of from 6 to 20 per cent. in

the others. In one case there was a loss of 25 per cent., but this was made up and surpassed later, the third day showing an increase of 20 per cent. over the findings when the gastric juice was first drawn.

Colloidal Therapeutics.—Vergely here gives a survey of the field of colloids in therapeutics and the experiences to date with these inorganic ferments, metallic ferments or electric colloid metals as they are variously called. Their catalytic action is explained by their enormous surface. A liter of a 0.5 per thousand solution of colloidal gold, for example, presents a surface of 150,000 square centimeters, while the same weight of gold in a compact form presents a surface of only 50 square millimeters. In therapeutics, they whip up the organism but if it is unable to respond, they can do no good. If the patient is unable to produce more leukocytes, if the opsonic index is too low, there is no chance of success. In selecting the colloid to use, he advises the metal that has been found most active against the bacteria, etc., involved. He adds that injection of a colloid may favor the production of a fixation abscess when this is attempted at the same time. There is a place for colloidal therapeutics, he concludes, besides vaccine therapy and serotherapy, but its principal indication is in chronic disease or infection in which a specific chemotherapy is required.

Lyon Médical

Feb. 10, 1920, 129, No. 3

*Roentgen Study of Atony of the Digestive Tract of Nervous Origin. F. Barjon.—p. 109.
*Auto-Experimental Study of Pruritus. P. Jourdanet.—p. 116.

Atony of Digestive Organs.—Barjon emphasizes the importance of atony of the esophagus and stomach in the clinical picture of neurasthenia and other nervous disturbances. The discovery of atony of any segment of the digestive tract sustains the assumption of a nervous origin for the various disturbances noted anywhere in the body. If the symptoms from the atony are accepted as of organic origin and an operation is done, the symptoms continue afterward the same as before. He describes three extreme cases, and warns to seek for atony of the digestive tract before operating in all dubious cases.

Auto-Experimental Study of Pruritus.—Jourdanet remarks that as pruritus is a sign that the nerve terminals are suffering, it belongs to the sphere of the neuropathologist. He has been making a detailed study of it in his own person as he could bring it on at will by taking antipyrin. He is subject to itching eruptions when he takes this drug but never has pruritus at other times. His experience confirms that the pruritus is most severe at points subjected to strain or pressure. Scratching fastens, increases, and generalizes the pruritus, as also sudden exposure to air. He received a telegram announcing a death in the family, and an explosion of generalized pruritus followed immediately on this emotional shock, and persisted for an hour.

Paris Médical

Feb. 7, 1920, 10, No. 6

*Radiotherapy of Uterine Fibromyomas. A. Bécélère.—p. 101; of "Primary" Neuralgia. A. Zimmern.—p. 105; of Local Tuberculous Processes. P. Cottenot.—p. 107.
*Radium Treatment of Uterine Cancer. Th. Nogier.—p. 111.
*Radium Puncture in Treatment of Cancer. C. Regaud.—p. 118.
*Radium Treatment of Cancer of Esophagus. Dufourmentel.—p. 124.

Radiotherapy of Uterine Fibromyomas.—Bécélère credits Foveau de Courmelles with the first application of the roentgen rays in treatment of uterine fibromyomas. His first communication on the subject appeared January, 1904. Bécélère's own experiences with over 400 cases compel the assumption that radiotherapy is applicable to every uterine fibroma except where conditions demand surgical intervention at once. He gives weekly exposures, and records the size of the fibroma at each sitting; this testimony demonstrates the primary and direct action of the rays on the fibromas. In three cases the roentgen rays induced the retrogression of uterine fibromas which had developed several years after the natural menopause.

Radiotherapy of Neuralgia.—Zimmern relates that the success of roentgen treatment of neuralgia by raying the roots of the nerves involved has been remarkably constant in all forms of neuralgia except the facial. Sciatica and neuralgia of the brachial plexus have responded especially promptly and completely. Relatively small doses are required; not more than one or two applications of 3 H units notably attenuate the pains or cure them completely. The area exposed for brachial neuralgia should be from the fourth cervical to the first thoracic vertebra. He has made a special study of radiotherapy of neuralgia since 1913, and increasing experience, he says, has confirmed its value.

Radiotherapy of Local Tuberculous Processes.—Cottenot is the radiologist at the Saint Louis Hospital and his experience confirms the beneficial action of roentgen-ray treatment in many cases of tuberculous gland, joint and bone disease. With osteitis and arthritis he prefers to combine it with immobilization, making as many windows in the cast as possible, so that cross-fire raying can be done. In certain other forms of local tuberculosis, curetting followed by raying seems to insure a permanent cure.

Radium Treatment of Uterine Cancers.—Nogier gives illustrations of the different devices he uses in applying radium treatment to the vagina, uterus or rectum to insure a certain space and filtration between the radium and the tissues, and still have the radium in the heart of the tumor, so as to take advantage of all the rays.

Radium Puncture in Treatment of Cancer.—Regaud refers to needles loaded with radium emanations and plunged into the neoplasm. The circles of influence from the radium emanations thus overlap and the entire area of the cancer is subjected to the treatment. In a cancer of the breast, for example, twenty-five needles can thus be plunged into the breast and others run horizontally through enlarged glands in the axilla. One of the illustrations shows four radium puncture needles thus implanted in a neoplasm in the tonsil, with safety threads attached to the needles. He warns that this radium puncture is so potent that it is harmless only by keeping the needles scrupulously from encroaching on sound tissue. The fifty cases he has thus treated in the last eight months are too recent for a final judgment as to the outcome; all were inoperable cases.

Radium Treatment of Cancer of the Esophagus.—Dufourmentel reports a few cases in which the patients have been relieved from pain, and swallowing has been improved, and there has been a gain in weight during the five months or more since radium treatment of the cancer of the esophagus is being systematically applied. Others have survived for from thirteen months to three years, and during this remission they were relieved of pains and dysphagia.

Progrès Médical, Paris

Feb. 7, 1920, 35, No. 6

Case of Spleen—Ganglia Form of Myeloid Leukemia with Subacute Course. J. Chalié and R. Crémieu.—p. 57.
The Crisis in Infectious Diseases. M. Loeper.—p. 58.
Protein Therapy. H. Paillard.—p. 61.

Schweizerische medizinische Wochenschrift, Basel

Feb. 19, 1920, 50, No. 8

*Diabetes in Wartime. D. Gerhardt.—p. 141.
*Adaptation of the Parasite to Its Host. B. Galli-Valerio.—p. 143.
Getting Patients Up Early After Childbirth and Operations. Häberlin.—p. 148.
*Tuberculosis and Abortive Treatment of Syphilis. Tièche.—p. 149.

Diabetes in Wartime.—Gerhardt observed eleven cases of diabetes in soldiers which began with high glycosuria and great loss of weight, but under dietetic measures it subsided to a final complete cure after return home. Emotional stress and nervous influences may have cooperated, but the diabetes was influenced by dieting as readily as any diabetes. In 11 cases of war diabetes in the Würzburg hospital, 2 died in coma within three months of the onset of symptoms; a third died in coma after a carbuncle although he had been in good condition notwithstanding high glycosuria for two years. The others improved under treatment and were discharged. Among the 16 civilian cases, 3 died in coma and 3 showed no

benefit from treatment, but all the others were materially improved. The dietetic restrictions of the war seemed to have rather a favorable influence on diabetes, and the lessons learned therefrom will benefit diabetics in future. Various explanations for this have been given, but Gerhardt ascribes it to the low calory content of the food, and especially the small proportion of albumin, and the large proportions of carbohydrate-containing vegetables. It is seen to be not necessary to exclude meat and cheese absolutely. The diabetics did even better on this diet than if they had conscientiously followed a strict antidiabetic diet without careful medical supervision. Too little carbohydrates may do harm as well as too much.

Adaptation of Parasites to the Host.—Galli-Valerio cites a number of observations in which it has been possible to trace the adaptation of a protozoon from the exterior to a casual host until it became an actual parasite; or, after being a parasite of one species, it adapted itself to another. The sequence is usually through the invertebrates to the vertebrates. His long review of the subject emphasizes anew the importance of comparative pathology and parasitology for human pathology and epidemiology. It shows how a new parasitic disease is liable to develop among us at any moment. Such was the case with the trench foot of the war. It shows further the danger for man from the widespread prevalence of flagellata among the invertebrates.

Tuberculosis and Abortive Treatment of Syphilis.—Tièche warns that abortive treatment of syphilis may be fraught with considerable danger when the patient is already tuberculous. The tuberculosis may be whipped up by the specific treatment of the syphilis, in some cases, while in others no effect is apparent. The combination of arsphenamin and mercury may upset the balance of antibody production. Special caution is necessary with an inherited taint. He advises extreme caution, bearing in mind that the syphilis is more amenable to treatment later than the tuberculosis, if the latter is roused to a progressive course, and also that the syphilis in itself does not have such an injurious influence on the tuberculosis as the means taken to abort it.

Policlinico, Rome

Feb. 2, 1920, 27, No. 5

Inaugural Lecture of Dermatology Course. A. Ducrey.—p. 127.
Conc'n in No. 6, p. 160.

*Ficai Corpuscles in Typhus. G. Ficai.—p. 133.
*Edema of the Larynx in the Pregnant. S. Pusateri.—p. 135.
Prophylaxis of Endemic Goiter. G. Cavina.—p. 137.

Special Corpuscles in Typhus.—Ficai reports finding in infected lice and in the brain of persons who had died at the height of typhus, numerous corpuscles of a diameter of 2 or 3 microns in the capillaries, but larger ones, round or oval, were found both in and outside of the large nerve cells of the cortex and of the nuclei of the base. Nothing resembling these corpuscles could be found in diseases other than typhus in his research.

Edema of the Larynx in the Pregnant.—Pusateri reports the case of a healthy woman of 30, with two healthy children, nearly at term with her third pregnancy. She had been exposed to scarlet fever, and suddenly developed acute edema of the larynx. Repeated attempts at intubation failed, while tracheotomy and means to hasten delivery were opposed by the family until the second day, by which time the fetus had died, and tracheotomy had to be done as a last resort. The woman died in coma in a few hours. The case teaches the necessity for prompt intervention with acute edema of the larynx in the pregnant; even intubation is liable to prove ineffectual. The danger to the fetus from the lack of oxygen, etc., justifies prompt artificial delivery. This not only saves the fetus but may have a favorable influence on the mother by the loss of blood and the rapid oxygenation of her blood. The pressure on the diaphragm from the pushing up of the viscera by the enlarged uterus hampers the functioning of the respiratory organs, and aggravates conditions from the acute edema.

Feb. 9, 1920, 27, No. 6

The Controlateral Achilles Tendon Reflex. A. Giannelli.—p. 150.
*Spina Bifida in Adults. F. Fermi.—p. 166.

Spina Bifida in Adults.—Ferini recently encountered three cases of spina bifida in young persons of about 17. In one the deformity had spontaneously corrected itself almost completely. Notwithstanding the favorable history in these cases, he still proclaims the advantage of early operative intervention to ward off serious mishaps.

January, 1920, 27. Medical Section, No. 1

The Future of Medicine. A. Murri.—p. 1.
Reproduction of the Malaria Parasite. T. Pontano.—p. 36.

The Future of Medicine.—Murri takes thirty-five pages to reply to Mackenzie's recent book with this title, which was reviewed in THE JOURNAL, Feb. 7, 1920, p. 415. He regards as extremely important Mackenzie's insistence that the future of medicine rests with the general practitioner; but he declares that Mackenzie goes too far in his effort to "simplify." To simplify too much is to retrogress. Murri also quotes from his own writings of thirty-three years ago describing what he called paralysis of the auricle, which has been recently rediscovered and entitled auricular fibrillation. Murri thinks that the practitioner will get a much better idea of the condition when it is called paralysis of the auricle than from the term fibrillation. He protests further against Mackenzie's assertion that there is always pain with incipient disease, citing a number of conditions, such as when albuminuria is casually discovered, in which there are absolutely no subjective symptoms.

Reproduction of Macrogametes of Plasmodium Vivax in the Blood Stream.—Pontano presents evidence of this occurrence in a case described, with a colored plate showing the gametes of *Plasmodium vivax* in different phases of reproduction, and says that even one positive observation outweighs a thousand negative findings. The attack of malaria was the first relapse after a latent interval of nearly five years.

Riforma Medica, Naples

Jan. 3, 1920, 36, No. 1

Cultivation of the Gonococcus in Gelatin with Beer Yeast. L. Morini.—p. 2.
*Collateral Physical Signs of Central Pneumonia. C. Sofrè.—p. 3.
Artificial Pneumothorax in Treatment of Wounds of the Chest and Lung. E. Santoro.—p. 5.
Treatment of Latent Malaria. A. Jona.—p. 12.
*Protein Reaction and Fever. G. Galeotti.—p. 13.

Central Pneumonia.—Sofrè relates that he has sometimes had patients with high fever for several days, the face red, occasionally slight coughing, but none of the usual signs of pneumonia or of any other pulmonary disease could be detected. The course of the case, the increase in the cough, the progressively abundant expectoration, and the drop in the fever by crisis all testified to the correctness of the diagnosis of pneumonia and its central location. The extra resonance and the weakness of the vesicular murmur are restricted to one zone of the lung, usually corresponding to a single lobe, but there is nothing otherwise in the history to suggest emphysema.

Fever and Protein Intoxication.—Galeotti recalls that any heterogenous protein introduced parenterally in man or animals induces fever. On the other hand, in experiments on animals and in spontaneous fever in man, the fever every time could be traced to the presence in the organism of heterogenous or denatured or disintegrated, dead protein. Even exogenous poisons, he continues, never induce fever unless they modify the protein metabolism. Fevers can thus all be explained by this conception of protein intoxication. The heterogenous protein molecules can not be adsorbed, and they are thus unutilized, and they hamper the functioning of the cellular protoplasm. They may even exert a destructive action as they cling to the cells. This toxic action persists until by advanced hydrolysis the protein substances lose their colloid structure and become simple molecules (polypeptides and amino acids).

Jan. 24, 1920, 36, No. 4

*Benzol in Treatment of Leukemia. F. Ravenna.—p. 86.
*Signs of Hyperthyroidism in Early Diagnosis of Pulmonary Tuberculosis. A. Gallotti.—p. 88.

*Pressure in the Brain as Element in Cerebral Hemorrhage. G. Paoletti.—p. 92.
*Electropuncture of the Spine in Tabes. F. Piccinino.—p. 94.
Lethargic Encephalitis. A. Montefusco.—p. 96.
Functions of the Optic Thalamus. A. Jappelli.—p. 97.

Benzol in Leukemia.—Ravenna reports three cases of chronic myeloid leukemia in which benzol treatment was systematically applied. They show that extreme caution is necessary with it, and that the effect is purely symptomatic. The symptoms inevitably return, sooner or later, and in a graver form, against which we are disarmed. In the favorable cases, under benzol the drop in the number of leukocytes is proportionately greater, in the immature forms; more uric acid is eliminated and the leukopenia continues to progress after suspension of the drug. In one of his cases the leukocytes numbered 234,000 in the obese woman of 57. Under 80 drops of benzol daily, the number dropped to 8,800. After a few months of substitution of Fowler's solution for the benzol, the leukocytes ran up to 43,000 but were again brought down to 11,000 under benzol. Nine months later they again ran up but subsided again under two months of 80 drops of benzol daily. A year later the number was 11,000. After another year or two the leukocyte count was found to be 265,000, and the number then was not modified by benzol, but was brought down to 22,000 with two months of roentgen exposures, 3 H units at a sitting, and the general health improved. Necropsy in the two other cases failed to show any injury from the benzol, or special accumulation of leukocytes in any organ. One patient was a man of 35; roentgen treatment brought the leukocytes down from 400,000 to almost normal. After a few months the symptoms flared up again and vigorous benzol treatment induced only transient improvement, the man dying the fifteenth day of the acute exacerbation.

Signs of Hyperthyroidism in Early Diagnosis of Pulmonary Tuberculosis.—Gallotti describes six cases in which toxic action from the insidious tuberculosis induced a more or less complete hyperthyroid picture. The goiter was treated with electricity, and tonics were given. The results indicated that treatment of the thyroid in such cases is liable to have a favorable influence on the pulmonary tuberculosis. He has encountered so many cases of this combination that he now suspects pulmonary tuberculosis in every case of exophthalmic goiter until this can be excluded. His experience indicates further that enlargement of the thyroid seems to imprint a benign character on the tuberculosis.

Prophylaxis of Cerebral Hemorrhage.—Paoletti queries why hemorrhage in the elderly occurs only in the cerebral vessels and not in the vessels of the abdomen or limbs. It seems as if there must be some special condition in the brain which favors rupture of vessels. The condition peculiar to the brain is that the vessels are subjected to a constant pressure from the cerebral fluid, although the intensity of this pressure may fluctuate. It is possible, he suggests, that when this pressure is less than usual, the vessel walls stretch as they are released from the usual pressure, and, as they stretch, they rupture. This assumption of hemorrhage *ex vacuo* not only explains all the facts observed, but suggests that when symptoms indicate impending cerebral hemorrhage or minute extravasation has already occurred, intraspinal injection of a little artificial serum might restore the normal intracerebral pressure, and thus ward off future injury from this source. He thinks that at least it is worth a trial in institutions for the aged, in treatment and in prevention of apoplexy.

Electropuncture of the Spine in Tabes, etc.—Piccinino has found vigorous revulsion applied to the spine effectual in treatment of tabes, often curing the ataxia or other disturbances. He prefers for the purpose a needle connected with the negative pole. This induces an electrolytic action deep in the tissues, but strictly localized. The positive electrode is placed on the spine above or below, with continuous current from pile or battery, connected with street lighting current, with galvanometer and rheostat. In cases rebellious to courses of mercury, this electropuncture at the points most diseased seems to attract the drug to these points, and clinical improvement results. The negative pole branches and

this can be connected with two needles; one is inserted to a depth of 1, 2 or more cm. and a current of 10 or 15 milliamperes is turned on. The electrolysis causes bubbles of gas around the needle; when this occurs, the second needle is introduced and the first withdrawn. This avoids sudden shocks, and in this way from fifty to 100 punctures can be made at a single ten or fifteen minute sitting, under a local anesthetic and epinephrin. This method of intrapolar catalysis, he says, is applicable to any form of meningomyelitis, especially those with spastic phenomena.

Brazil-Medico, Rio de Janeiro

Jan. 3, 1920, 34, No. 1

- Black Tongue in Influenza. M. Couto.—p. 1.
*Hyperplasia of Lymph Glands in Abdominal Pathology. C. Bourroul and Z. do Amaral.—p. 1.
Single Giant Middle Finger. A. Ferreira de Magalhães.—p. 3.
Amyl Nitrite in Treatment of Hemoptysis. Misservy.—p. 5.

Hyperplasia of Abdominal Lymph Glands.—Bourroul and do Amaral report the case of a boy of 9 who suddenly developed intense pains in the abdomen. An exploratory laparotomy the fifth day revealed merely enlargement of lymph glands, simple hyperplasia. The mesentery was studded with these enlarged glands, some as large as a pigeon's egg, compressing the bowel at different points. After the exploratory laparotomy, the pains gradually subsided and disappeared completely by the end of the second week. The boy had been given iodid, epinephrin, atropin and a single injection of arsphenamin. No attempt was made to remove any of the glands as sarcomatosis was assumed. Only microscopic examination of an excised scrap revealed the benign and curable nature of the lymphatism. The authors cite in connection with this case Symmers and Greenberg's study of lymphoid hyperplasia in the appendix, *THE JOURNAL*, Feb. 15, 1919, p. 468.

Jan. 10, 1920, 34, No. 2

- Commencement Address. A. Peixoto.—p. 17.

Jan. 17, 1920, 34, No. 3

- Case of Pellagra. F. I. da Silva.—p. 34.

Jan. 24, 1920, 34, No. 4

- Certain Drugs Used in Dermatology. F. Terra.—p. 49.
*Leprosy in Pernambuco. A. Rocha.—p. 52.

Leprosy in Pernambuco.—Rocha states that the asylum for lepers founded in his district in 1786, and still efficiently functioning, has aided materially in keeping the number of cases of leprosy at a low figure. There are now forty-seven men and thirty-six women inmates. Segregation is not compulsory.

Gaceta Médica de Caracas

Nov. 15, 1919, 26, No. 21

- Fever Should be Combated. A. Machado.—p. 223.

Dec. 15, 1919, 26, No. 23

- *Typhoid in a Syphilitic. D. Lobo.—p. 247.
Fracture of Carpal Scaphoid Bone. Idem.—p. 249.
Experiences with Local Anesthesia in Venezuela. E. Alamo Gutiérrez.—p. 250.

Typhoid in a Syphilitic.—Lobo relates that the typhoid in the young man did not seem to be modified by the various measures applied. The fever kept running up at times, and ulcerations developed in the tonsil, neck, arms and elsewhere. The Wassermann reaction was negative, but under tentative treatment for syphilis the disease took a turn for the better at once.

Dec. 31, 1919, 26, No. 24

- *Treatment of and by Fever. F. A. Rísquez and others.—p. 259.
Cyclic Vomiting. Villegas Ruiz and others.—p. 263.

Treatment of Fever and Treatment by Fever.—Rísquez reviews the arguments in favor of the assumption that the fever is a useful defensive reaction, Machado in a previous article having presented the other side. Villegas gages the fever and the necessity for intervention by the amount of elimination of metabolic products through the kidneys. He does not expect baths and packs to reduce the temperature directly, but only by aiding in the elimination of waste and soothing the heat centers.

Revista del Instituto Bacteriológico, Buenos Aires

October, 1919, 2, No. 3

- *Enzootic Meningo-Encephalitis. R. Kraus, L. Kantor and R. Quiroga.—p. 239.
*Heterogenous Antibodies. III. A. Sordelli and C. E. Pico.—p. 261.
*Heterogenous Antigens. R. Wernicke and A. Sordelli.—p. 281.
*Mixed Tumor on Rat. A. H. Roffo.—p. 283.
*Vaccine Treatment of Whooping Cough. J. L. Parera.—p. 285; Idem. J. Bacigalupo.—p. 291.
Mosquito Host of Malaria Found in Buenos Aires. J. Petrocchi.—p. 295.
*Biologic Tests for Kinship between Species of Animals. G. Fischer and L. Kantor.—p. 303.
*Endemic Goiter and Cretinism in Argentina. R. Kraus.—p. 309; Idem. R. Wernicke.—p. 325.

Encephalitis in Horses.—Kraus and his co-workers cultivated a diplococcus from the lesions of the brain in the contagious enzootic which for several years has been affecting horses in Argentina. The symptoms are explained by the infiltration of the cerebral vessels, and the presence of the diplococcus with which they were able to reproduce the disease in rabbits and in horses. Over twenty large photomicrographs accompany the article and seven illustrations of animals with the disease. It was first observed, they say, at Borna, near Leipzig, in 1894, and is usually called Borna disease.

Heterogenous Antibodies.—Sordelli and Pico found that when a hemolysin for sheep or goat corpuscles was added to a suspension in physiologic saline solution of an alcoholic extract of guinea-pig kidney tissue, in a few hours agglutination and precipitation occurred and the fluid became clear. They experimented with other lipoids and antigens, and explain the phenomenon as a reaction between an antibody and a heterogenous antigen. It does not occur in the absence of sodium chlorid.

Heterogenous Antigens.—Wernicke and Sordelli state that light is thrown on the nature of heterogenous antigens by their success in isolating a substance (containing nitrogen and phosphorus, with the property of fixation of heterogenous hemolysins), from an alcoholic extract of horse kidney tissue treated with acetone, ether and benzol.

Mixed Tumor in Rat.—Roffo gives eleven photomicrographs of a spontaneous carcinosarcoma found in an old white rat.

Vaccine Treatment of Whooping Cough.—The vaccine is made from sputum, and the impressions from this treatment were quite favorable, although Bacigalupo reports over 12 per cent. unmodified by it in his 495 cases.

Biologic Tests Show Kinship Between Species.—Fischer and Kantor found it impossible to induce anaphylaxis in various members of the cavy family. This negative response sustains their biologic kinship. They found further a similar analogous response to inoculation of transplantable guinea-pig lymphosarcomas, and also to the response to precipitin tests. The animals investigated were the guinea-pig and the cuis or *Cavia pallas*. The article is illustrated.

Endemic Goiter in Argentina.—Kraus states that no statistics have been compiled in regard to the prevalence, etc., of goiter and cretinism in Argentina, but that both are known to occur in the mountainous regions of the country while the Buenos Aires and Córdoba districts seem to be free from goiter. The insect host of Chagas' disease is prevalent, and it has been found at various points to be infected with the trypanosome, *T. cruzi*, which induces Chagas' parasitic thyroiditis. But Kraus does not know of any instance of Chagas' disease in Argentina, the endemic goiter and cretinism having apparently no connection with the trypanosome. The acute form of Chagas' disease as observed in Brazil is characterized by the thyroiditis and the presence of the trypanosome in the blood. The chronic forms may be confounded with endemic goiter and cretinism; the differential diagnosis is difficult in mountainous districts. It is possible that this South American trypanosomiasis is a superinfection of endemic goiter and cretinism. He urges research in this line to determine whether Chagas' disease is common in mountainous districts in Brazil where endemic goiter and cretinism abound, while it is absent from the plains—as in the Argentina flat country—notwithstanding the presence of

the infected insect host. Some of the illustrations show groups of cretins in the mountain districts and cretin dogs.

Endemic Goiter and Cretinism in Argentina.—Wernicke relates that the localities where goiter is endemic in Argentina have soil and waters that differ completely from those which Bircher incriminated in Switzerland as responsible for endemic goiter.

Berliner klinische Wochenschrift, Berlin

Dec. 1, 1919, 56, No. 48

Renal Calculi Following Spinal Injuries. E. Holländer.—p. 1129.
Scarlet Fever. G. Zuelzer.—p. 1131.
Leukocyte Count in Malaria. M. Stoss.—p. 1135.
Body Heat in Relation to Work. J. Fischer.—p. 1137.
Prevention of Infant Mortality. F. Lenz.—p. 1139.

Causes Producing Renal Calculi Following Injuries to the Spinal Column.—Holländer gives an elaborate and detailed explanation of the phenomenon to which Kurt Müller called attention in 1895, namely, that following certain injuries to the spinal cord, there is frequently a rapid and bilateral formation of calculi in the renal pelvis. He ascribes the condition to the paralysis of the renal pelvis and the ureter, resulting directly from the injury to the spinal column.

Early Diagnosis of Scarlet Fever.—Zuelzer endeavors to show that scarlet fever is recognizable in the incubation stage several days before the onset of the fever. He ventures in explanation of the maximal enlargement of spleen and liver at the onset of the fever in scarlatina, typhus and malaria the hypothesis that the causative agent attacks these organs first. He has found quinin treatment of scarlet fever efficacious in the early stages, and has effected cures by its use. As it is doubtless true that the disease is spread during the incubation stage, this constitutes an added reason for its early recognition. As a prophylactic measure he recommends that in every case of infectious sore throat large doses of quinin should be prescribed. If scarlet fever is not present, no harm is done; in fact, Fraenkel recommends quinin as the most rational treatment for angina. In Prussia the case mortality from scarlet fever before the war was 10 per cent. He states that percussion of the liver is facilitated by a deep inhalation, distending the abdomen.

Dec. 8, 1919, 56, No. 49

Reforms in Medical Education. B. Fischer.—p. 1153.
*Genesis of Blackwater Fever. T. Zlocisti.—p. 1157.
*Hemolysis with Urine in Chronic Nephritis. L. Neufeld.—p. 1159.
*Potassium Permanganate Treatment of Smallpox. W. Bender.—p. 1160.
Value of Liquor Carbonis Detergens. Herxheimer and Altmann.—p. 1162.

Pathogenesis of Blackwater Fever.—Zlocisti expresses doubt whether on the basis of the known material a uniform genesis for all cases of blackwater fever can be established. He endeavors to show that the theory that blackwater fever is due to the harmful effects of quinin administration is untenable, by citing a special case in which grave hemoglobinuria developed when no quinin was being taken and it subsided under large doses of quinin.

Hemolytic Phenomenon of Urine in Chronic Nephritis.—Neufeld calls attention to a peculiar phenomenon occurring in a case of severe nephritis as revealed in the serologic examination of the urine of a series of syphilitics. The volume of albumin in the urine of the patient in question was 0.7 per cent. The Wassermann reaction in the blood was strongly positive; in the urine, absolutely negative. This negative urine reaction as opposed to the strongly positive blood finding contradicts, he thinks, the usual serologic findings in other body fluids containing albumin. Investigation revealed the fact that the urine contained a very active hemotoxic substance, laking sheep blood and beef blood but not human, guinea-pig or rabbit blood. He found further that this hemotoxic substance seems to have nothing to do with syphilis but is often found with severe nephritis, especially in cases with manifestations of uremia. The hemolytic substance is not destroyed by boiling. It seems to occur proportionately to the albumin content of the urine.

Potassium Permanganate in Treatment of Smallpox.—Bender condemns red light therapy and endorses the potas-

sium permanganate treatment of smallpox as effective in dealing with the dermatologic aspects of the disease. The convalescent stage is much shortened on account of the accelerated desquamation process, especially if the peeling of the palms of the hands and the soles of the feet is aided by mechanical removal. The isolation period is reduced, which lessens the number of melancholy states and hysterical attacks. Dreyer has the face, arms and hands painted with a saturated aqueous solution of potassium permanganate three or four times a day for the first two days and then the entire body once a day. This stains the skin brown and thus realizes a kind of colored light therapy, he says, besides its other advantages. Bender found it impossible to apply the solution so often or in such concentration, as it caused smarting, but by diluting it and applying it to part of the body at a time, he obtained excellent results in his eight cases.

Deutsche medizinische Wochenschrift, Berlin

Dec. 4, 1919, 45, No. 49

Alimentary Factors Influencing the Blood in Children. L. F. Meyer and A. Japha.—p. 1345.
Dermoids of the Neck. H. Wendriner.—p. 1355.
Secondary Covering of Wounds with Skin. H. Walther.—p. 1356.
Silver Salvarsan in Treatment of Syphilis. Fabry.—p. 1358.
Tuberculin Treatment of Tuberculous Pleurisy with Effusion. C. Stuhl.—p. 1360.
The Friedmann Tuberculosis Treatment. Lydia Rabinowitsch.—p. 1362.
What Is Hypnosis? M. Levy-Suhl.—p. 1363.
Effect of Methylene Blue in Malaria. P. Kaufmann.—p. 1365.
Production of Artificial Râles for Teaching Purposes. W. Hildebrandt.—p. 1365.

Münchener medizinische Wochenschrift, Munich

Dec. 5, 1919, 66, No. 49. F. Penzoldt Number

*Variable Virulence of Tubercle Bacilli. G. Hauser.—p. 1398.
Paratyphoid Colonies. L. Heim.—p. 1399.
*Significance of Sarcinae in the Stomach. Gerhardt.—p. 1400.
*Pulmonary Syphilis. G. Schröder.—p. 1401.
Protein Therapy. A. Schittenhelm.—p. 1403.
Roentgen Therapy in Pulmonary Tuberculosis. O. de la Camp.—p. 1405.
Psychogenic Disturbances During the War Period. G. Specht.—p. 1406.
Studies on the Thorax. E. Zeltner.—p. 1407.
*Neuroses of the Diaphragm. F. Jamin.—p. 1408.
*Intermittent Therapy: I. Value of Intervals. H. Königer.—p. 1410.
Protein Substances Found Within Bacterial Cells, and Chemical Composition of Bacterial Cell-Membranes. E. Tönniesen.—p. 1412.
Value of the Sachs-Georgi Reaction. L. Hauck.—p. 1413.
Treatment of Acute Appendicitis. Hagen.—p. 1414.
*Petruschky Treatment of Surgical Tuberculosis. Heubach.—p. 1415.
Prophylactic Vasectomy in Tuberculosis of the Sexual Organs. E. Pflaumer.—p. 1415.
Pathologic Anatomy of Typhoid Occurring in the Army. H. Merkel.—p. 1416.
Surgical Aspects of Chronic Gastric and Duodenal Ulcer. F. Doederlein.—p. 1420.
*Infants Born during War Period. Jahreiss.—p. 1421.
Cadaveric Odor of Breath as Sign of Impending Death. O. Rüdel.—p. 1422.
*Acute Participation of Ovary in Epidemic Parotitis. Ruge.—p. 1422.
Echinococcus Cyst in Liver Simulating Gallstones and Pleural Empyema. Reismann.—p. 1423.
*Pityriasis Rosea and Trichophytosis. Fried.—p. 1423.

Variable Virulence of Tubercle Bacillus Infections.—Hauser reports as the result of animal experimentation that the virulence of the human type of tubercle bacillus found in various cases of tuberculosis in man varies between very wide limits. Strains of weak virulence after repeated introduction in the eye of a rabbit regain the average virulence for a rabbit's eye. In acute miliary tuberculosis the virulence of the tubercle bacillus may be unusually low.

Diagnostic Significance of Sarcinae in the Stomach.—Gerhardt states that it has been his experience that sarcinae in the stomach may always be taken as an indication of stasis, usually from organic pyloric stenosis, accompanied by considerable gastrectasia. In some cases the stasis was only temporary, caused partly by slight organic changes combined with reflex spastic closing of the pylorus, and partly the result of motor insufficiency due to acute gastritis. The amount of free hydrochloric acid present seemed to have no bearing on the colony of sarcinae.

Pulmonary Syphilis.—The fact that pulmonary syphilis is often overlooked clinically, and that it is so commonly mistaken for pulmonary tuberculosis has led Schröder to endea-

vor to clarify in some measure its clinical picture. The most important means of establishing a differential diagnosis is the roentgen ray. An exact anamnesis is important. Syphilitic changes in the upper respiratory passages and elsewhere should be looked for. The localization, or atypical seat, of the lung process is significant. Absence of tubercle bacilli should be weighed. A more protracted course than in tuberculosis should be noted.

Neuroses of the Diaphragm.—Jamin recalls that the diaphragm, owing to its position between voluntary and involuntary muscles and forming a partition between the abdomen and the thorax with its own sensory innervation, is not infrequently the seat of psychogenic sensory and motor disturbances, in which the thoracic and abdominal muscles are involved in various ways. The resulting neuroses may easily lead to diagnostic errors as to conditions in thoracic and abdominal organs, the functioning of which may in fact be thereby impaired. Early diagnosis and psychotherapeutic treatment of these neuroses are therefore essential. Systematic breathing exercises will exert a prophylactic influence, and, while valuable for all, they are especially indicated for young persons who are weakly and nervous.

Intermittent Therapy: Value of Intervals Without Treatment.—Königer thinks that too little attention has been paid in the past to the value of rest periods, or intervals without treatment, which his investigations and observations would lead him to regard as an integral part of therapy. The periods of suspension should be as carefully investigated as the choice of a remedy, its dosage and manner of administration.

Inunction Tuberculin Treatment of Surgical Tuberculosis.—Heubach states that he has been using the Petruschky method since April, 1918, in both hospital and private practice, having given this treatment in eighty cases of tuberculosis of the lymph glands, forty-five cases of tuberculosis of the bones and joints, and in five other isolated cases. More than 50 per cent. of the cases were grave, and only 5 per cent. were mild. In every case he was impressed with the favorable effect on the course of the disease. The usually intractable fistulas in tuberculosis of glands and joints, and the abscesses in vertebral tuberculosis healed after the second or third tuberculin inunction. In a few cases a second series of treatments following a four to eight week interval became necessary, but he seldom failed to secure the desired results. Many of the severe cases he would formerly have regarded as hopeless. Sufficient time has not elapsed to speak of the percentage of permanent cures. He considers the beneficial effect of the treatment to be indirect, in that it strengthens the natural resistance of the organism.

Infants Born During War Period.—Jahreiss considers the question as to how the development of the fetus is affected by the changed nutrition of the mother. The results of his investigations on children born in the Augsburg Maternity during 1918 and the first seven months of 1919 are to the effect that the children born during this period were perfectly normal in weight, length and size of head.

Acute Participation of the Ovary in Epidemic Parotitis.—Ruge reports an acute condition of the ovary which arose in the course of mumps. There were symptoms of internal hemorrhage which precluded a diagnosis of acute oophoritis and favored ovarian hematoma; or possibly a combination of the two. Five weeks after it was first discovered the ovary had returned to normal size.

Treatment of Pityriasis Rosea and Trichophytosis.—Fried recommends mercurial ointment for the treatment of pityriasis rosea and trichophytosis, as it effects a speedy cure and is cheaper and simpler than the roentgen ray.

Wiener klinische Wochenschrift, Vienna

Dec. 4, 1919, 32, No. 49

*War in Relation to Hereditary Syphilis. K. Hochsinger.—p. 1173.

*Epinephrin in the Elderly. A. Arnstein and H. Schlesinger.—p. 1179. Bradycardia: IV. L. Hess.—p. 1181.

*Lung Enlargement in Syphilis. A. Edelmann.—p. 1182.

Roentgen Diagnosis of Diseases of the Spleen and Liver. A. Henzelmann.—p. 1185.

Quinin in Childbirth. L. Knapp.—p. 1185.

Traumatic Purpura. R. Gruss.—p. 1185.

*By-Effects with Smallpox Vaccination. K. Wagner.—p. 1186.

War in Relation to Hereditary Syphilis.—Hochsinger, basing his opinion on investigations applied to 123,284 births in Vienna, reaches the conclusion that syphilis among the newborn and infants decreased during the war period.

Unusual Effects of Epinephrin in the Elderly.—Arnstein and Schlesinger record that sometimes, following subcutaneous administration of epinephrin in elderly patients, the blood pressure drops, either with or without a preceding brief rise. In many cases this is associated with cardiac weakness, in which case tachycardia commonly results. Or the response may be bradycardia for several hours, often without accompanying decrease of blood pressure.

Lung Enlargement in Syphilis.—Edelmann reports on the basis of extensive investigations that tertiary syphilis may lead to lung changes in the nature of lung enlargement and emphysema. This finding, he thinks, serves to throw light on a certain proportion of the cases of so-called idiopathic emphysema occurring in middle life.

Observations on Smallpox Vaccination.—Wagner reports some peculiar phenomena following vaccination for smallpox in a woman of 36, who, with the exception of hay-fever, from which she had suffered since she was 14 years old, was perfectly healthy. She had been vaccinated two years previously without success. Following revaccination in July, 1919, with the appearance of the pustule, doughy swelling of the skin developed over the whole surface of the body. The patient was unusually pale and listless. Temperature ranged between 37.5 and 38.8. Marked dyspnea was present and the pulse was slow and tense. Respiration was asthmatic. The tonsils were somewhat enlarged and covered with grayish-white spots. The liver was enlarged. Specific gravity of urine was from 1.009 to 1.018. The albumin content was 0.05 per cent. and remained at this level for several days. There were no casts and no red blood cells, but renal epithelial cells were present in considerable numbers. The affected arm was red and swollen. These inflammatory phenomena disappeared in a few days without treatment. Wagner raises the question whether the hay-fever could have been in any way connected with the phenomena. Sore throat was observed in five other cases of the series of thirty and accompanied by a still higher fever (up to 40.2 C.). The sore throat yielded readily to local treatment. Sore throat was not epidemic at the time, nor were the weather conditions such as to favor its development. During this same period of vaccination, cases of severe illness and even fatalities following vaccination were reported from other sources.

Zeitschrift für Tuberkulose, Berlin

February, 1920, 31, No. 6

*Treatment of Pulmonary Tuberculosis in Sanatoriums and in the Home. F. Köhler.—p. 321.

Induced Right Pneumothorax with Left Pleurisy with Effusion. E. Als.—p. 333.

*The Tuberculous Psychoneurosis. G. Ichok.—p. 334.

Repose versus Occupation in Treatment of Pulmonary Tuberculosis. H. Hayek.—p. 350; Idem. H. Maendl.—p. 352.

Treatment of Pulmonary Tuberculosis.—Köhler declares that sanatorium measures are often applied too arbitrarily. The patients may actually suffer from cold, when reclining or sleeping out of doors. "The exposure of the décolleté gowns of the present day may be extremely harmful for anemic and tuberculous girls and women. . . . Toughening procedures have their day before 35 for the healthy, but after this the aim should be to spare the organism, and chief among the measures for this purpose is a proper supply of warmth. This is particularly necessary for persons with poor blood, the tuberculous, the nervous, the rheumatic, and those with disease of the kidneys or sexual organs."

The Tuberculous Psychoneurosis.—Ichok insists that the tuberculous psychoneurosis is a characteristic syndrome which requires individual treatment and is of general social importance. Pronounced psychoses are rare in the tuber-

ous, but this psychoneurosis is extremely common. Toxic ion from the tuberculosis toxins cannot be alone responsible, as the psychoneurosis does not necessarily become as severe as the intoxication progresses, while, on the other hand, the psychoneurosis may develop complete even with the mildest forms of the disease. Ichok ascribes it mainly to a subconscious sense of organic inferiority (*organ-
inderwertigkeit*). The source of the psychoneurosis should be sought, possibly by psychoanalysis, to enable the patient to convert his mental processes into useful channels.

Zentralblatt für Chirurgie, Leipzig

Feb. 14, 1920, 47, No. 7

the Mechanics of Concussion of the Brain. H. Rahm.—p. 146.
Volvulus of the Sigmoid Flexure. C. Pochhammer.—p. 148.
Suture for Abdominal Wall. H. Hans.—p. 149.
Constructing an Artificial Anus. J. Kinschrf.—p. 151.

Anastomosis for Volvulus of the Sigmoid Flexure.—Pochhammer sutures together, side to side, the lowest parts of the loop that he has just untwisted. The anastomosis opening must be 6 or 8 cm. long, to allow free passage of the contents. The loop above is thus functionally excluded, and it finally gradually shrivels away. He has thus treated four patients with volvulus of the sigmoid flexure in the last two years. Other clinics expose to danger of recurrence, while with this method recurrence is impossible.

Feb. 21, 1920, 47, No. 8

Habitual Dislocation of the Patella. G. Marwedel.—p. 170.
Postoperative Tetany. W. Haas.—p. 171.
Operation for Undescended Testicle. P. Frangenheim.—p. 173.
Orchidopexy plus Funiculopexy for Testicle Retained in Inguinal Canal. E. Glass.—p. 174.

Habitual Dislocation of Patella.—Marwedel says that he knows of fifty different methods for correction, but that the technique he describes here is superior to all others. He slits the capsule and laps the lips in a special way as he shows in his illustrations.

Cure of Postoperative Tetany.—Haas was able to cure the tetany and bring it on again at will in a severe case by administering beef parathyroid tablets. In a short time the patient's own parathyroids had recuperated; they had only been damaged, not removed, at the goiter operation. Haas adds that in resecting the thyroid in a woman seven months pregnant, he found the parathyroids three or four times their normal size, and regards this as a hint to give parathyroid treatment to pregnant women showing signs of parathyroid insufficiency, and to keep it up until far into lactation. Or castration of parathyroids might be considered. There is no theoretical ground for giving thyroid treatment alone in tetany; the thyroid may actually annul any action from the parathyroids.

Simplified Operation for Undescended Testicle.—When Frangenheim finds it difficult to bring the testicle down to its proper place, he lengthens the spermatic cord by shifting its position to back of the epigastric vessels, thus shortening its course without injury to the elements of the cord. The testicle is easily drawn through behind the inferior epigastric artery and vein, as he explains with an illustration. The procedure is much facilitated by raising the pelvis quite high. He has applied it successfully in ten cases.

Zentralblatt für Gynäkologie, Leipzig

Feb. 21, 1920, 44, No. 8

the Corpus Luteum in Relation to Menstruation. A. Labhardt.—p. 185.
Operative Treatment of Incontinence of Urine. A. H. M. J. van Rooy (Haarlem).—p. 192.
Endemic Diphtheria in Maternities. E. Hollatz.—p. 195.

Operation for Incontinence of Urine.—Van Rooy applied the Goebell-Stoeckel technic in a case of incontinence of urine that had resisted all treatment for sixteen years. It followed forcible removal of a calculus from the bladder. A flap of muscle was brought down to each side of the neck of the bladder, working through a transverse incision above the symphysis. Then, through an incision in the vagina, the ends of the muscle flaps were sutured together around the

neck of the bladder to make a new sphincter, as it were. Eight months have passed since the operation, and there has not been a trace of incontinence since. The patient, an unmarried woman of 36, urinates only every three and a half or four hours. The muscle loop draws the neck of the bladder upward, and this partially kinks it. The pyramidalis was the muscle used to reinforce the sphincter.

Endemic Diphtheria Among the Newly Born.—Hollatz states that since 1910 thirteen reports have been published of epidemics of diphtheria among the newly born. In nearly all the cases the nose was the seat of the process.

Feb. 28, 1920, 44, No. 9

*Injection of Fluid into the Placenta. B. Schwarz.—p. 217.
Isolated Compression of Abdominal Aorta. J. Suerken.—p. 223.
Amniogenous Deformities. C. v. Goetzen.—p. 225.

Hydraulic Turgidization of the Placenta.—Schwarz extols Gabaston's method of injecting a fluid into the placenta as a simple and harmless means to arrest hemorrhage and aid in the spontaneous separation of the placenta. He has applied it in sixteen cases. As the placenta swells from the injected fluid, the effect in detaching it from the uterus wall is the same as when the uterus wall contracts under the placenta, while the distention of the placenta stimulates the uterus to contract, and its heavier weight exerts greater traction. A still further advantage is that the turgidized placenta offers a better hold for the hand in case continuance of the hemorrhage demands Credé expression. The saline is injected through the umbilical cord vein until some resistance is felt; usually 300 or 400 c.c. are enough. It never seemed to do any harm in his cases. (Gabaston's original communication on this hydraulic method of aiding in detaching the placenta was summarized in THE JOURNAL May 2, 1914, p. 1443.)

Mededeel. uit het Geneesk. Lab. te Weltevreden, Java

1919, No. 4

*Immunity of Common Fowls to Plague. P. C. Flu.—p. 116.

Immunity of Fowls to Plague.—Flu inoculated ten hens or cocks with a fraction of or one or two loops or a whole slant culture of plague bacilli of a strain which killed guinea-pigs in a 1:10,000 loop dose injected subcutaneously. The fowls were inoculated by the vein, subcutaneously or intramuscularly, but none showed signs of sickness, phagocytosis always insuring the prompt disappearance of the plague bacilli. They retained their virulence to the last, up to four days, but all seemed to act merely as foreign bodies, and were incorporated by the phagocytes. Domestic fowls, he states, have a temperature of 42 C., and he regards this as significant, as he, Kolle and Strong have noted that the plague bacilli rapidly decrease in virulence when cultivated at a temperature as high as 40 to 42 C.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 10, 1920, 1, No. 2

*The Fight Against Venereal Disease. T. M. van Leeuwen.—p. 112.
*Shape of the Stomach. E. H. van Lier.—p. 119.
*Whooping Cough. W. F. Enklaar.—p. 126.
Wassenaar's Visual Phenomenon. S. J. R. de Monchy.—p. 129.
*Treatment of Lupus. P. J. Mink.—p. 130.

The Campaign Against Venereal Disease.—Van Leeuwen reiterates that the efforts to deprive venereal diseases of their endemic character require the personal cooperation of medical men. It would result in incalculable advantage if all would keep a record of every case, especially of syphilis, and record the effect of the disease on the patient and on his family as the years pass. He appeals to physicians in general to aid in this and in other ways the organized efforts to repress the spread of these diseases.

The Shape of the Normal Stomach.—Van Lier compares the conflicting statements of various authors as to the shape of the normal stomach, saying that the shadow cast when the stomach is weighed down with a suspension of bismuth cannot be accepted as the normal finding. Even the necropsy findings do not represent the physiologic stomach; the rigor mortis, the gases that may form in half an hour after death,

and other factors distort the shape of the stomach. He gives roentgenograms of the dog stomach, after a fine rubber tube filled with a contrast suspension had been sutured to the outside of the stomach from the esophagus to the pylorus. The shadow of the fasting stomach shows the rubber tube crumpled up in a bunch, the fasting stomach having evidently contracted into small compass. With the heavy contrast meal, the stomach assumes a sac shape, with a tube shape at the pylorus end.

Prophylaxis of Whooping Cough.—Enklaar suggests that contagion of whooping cough and possibly of measles might be prevented by arranging the classes according as the children have had the disease or not. If a case develops in a school room, those who have had the disease can continue at school, but the susceptible should be kept at home until the danger of contagion is past.

Acid Treatment of Lupus.—Mink applied trichloroacetic acid in a case of lupus refractory to light treatment, and was surprised at the prompt benefit.

Jan. 17, 1920, 1, No. 3

*Prophylaxis of Venereal Disease. II. T. M. van Leeuwen.—p. 201.

*Functional Dyspepsia. C. G. Vervloet.—p. 207.

*Epidemiology of Cholera. C. S. Stokvis.—p. 216.

Contract Practice in Rural Districts. H. C. van den Bijlaardt.—p. 223.

Prophylaxis of Venereal Disease.—Van Leeuwen enumerates the reasons why he rejects as bound to prove ineffectual any official recommendations for individual prophylaxis among civilians. His five years' experience as secretary of the Netherlands Society for Combating Venereal Disease has convinced him that the best plan is for the authorities merely to enjoin abstention from extramarital intercourse in prevention of venereal disease, but to provide ample facilities for medical care at suitable hours and places for the infected, leaving it to the physician in charge to decide whether in a given case it is necessary or useful to apply local preventive measures. Van Leeuwen makes a point of always carefully instructing in the first signs and symptoms of venereal disease, and in the danger of infecting others during these six or eight weeks.

Functional Dyspepsia.—Vervloet remarks that the diarrheas from insufficiency of the digestive glands form the largest contingent of the cases of functional intestinal derangement. The glandular secretions may be deficient in quantity or quality. He found gastric achylia or hypochylia in 25 of 84 cases of fermentation diarrhea, and in 6 cases the pancreas also was functionally insufficient. Undigested starch and much cellulose in the stools should suggest investigation of the chemistry of the stomach, and in 30 per cent. some secretory anomaly then becomes evident, as a rule. Treatment to substitute the lacking gastric juice soon improves the diarrhea. Diarrhea from putrefaction processes or defective digestion of fats is seldom found with achylia, and the products are less irritating than the acids generated in the fermentation processes. He never saw a case in which the intestinal disturbances had preceded the hypochylia, but was able to trace the reverse sequence very plainly in two cases; the defective functioning of the secretory system of stomach and pancreas had preceded the colitis, with a catarrhal intestinal condition bridging the intermediate period. In 32 cases of diarrhea with gastric achylia or hypochylia there were only 8 in which there was distinct putrefaction; in the other 24 there was abnormal fermentation. The abnormal fermentation of carbohydrates and cellulose forms the link between the gastric achylia and the colitis. Perhaps investigation of other digestive ferments may throw further light on functional dyspepsia. In treatment, bed rest will often be found a valuable adjuvant. The findings in the stools should guide the diet.

Epidemiology of Cholera.—Stokvis insists that nowadays we pay too exclusive attention to bacteria, and overlook other circumstances that may have a causal or accessory significance. We should study epidemics by a "mass epidemiology" instead of by individual cases. Of course when the epidemic has once got a firm foothold, it is spread by contact, but this is inadequate to explain the earlier phases.

Hygiea, Stockholm

Feb. 29, 1920, 82, No. 4

*Masks in Prevention of Contagious Disease. A. Josefson.—p. 113.

Masks in Prophylaxis of Contagious Disease.—Josefson had masks used by the nurses in his service almost from the beginning of the influenza epidemic, and states that none of the nurses in the influenza wards contracted the disease as all scrupulously wore the masks. In the adjoining surgical ward, where masks were not worn, some of the nurses were down with the disease all the time. The wearing of masks with whooping cough, diphtheria, scarlet fever, mumps, etc., he observes, might arrest the spread of the infection. In conclusion, he warns that pregnant women should be protected with special care against influenza.

Ugeskrift for Læger, Copenhagen

Feb. 12, 1920, 82, No. 7

*Roentgen Ray Diagnosis of Gout. Hans Jansen.—p. 217.

*Huge Cavities in Lungs. F. Tobiesen.—p. 221.

Lethargic Encephalitis. H. Jacobsen.—p. 227.

*Perirectal Carcinoma. L. Melchior.—p. 231.

Roentgen Ray Diagnosis of Gout.—Jansen's roentgenogram of the hand of a man of 47 showed callus-like masses of bone and destructive processes—the picture not fitting into the frame of any known disease except gout, and it was of an unprecedented scale for gout.

Large Cavities in Lungs.—Tobiesen reviews the necropsy findings in five of six cases of a large cavity in one lung and compares them with six cases on record, all on the left side. In the majority, the huge cavity had been mistaken for pneumothorax. In one of his five cases the cavity was on the right side. In all, the entire lung or nearly the whole lung formed a cavity traversed by trabeculae which corresponded to the vessels.

Perirectal Carcinoma.—Melchior recalls that cancerous stenosis of the intestines practically always has been explained by a cancerous growth in the bowel mucosa or secondary fibrous bands. The conditions were different in three cadavers recently examined; the rectal mucosa was intact, and the stenosis was the result of a metastatic carcinomatous infiltration of the connective tissue around the rectum and encroaching on it. In one of the cases the conditions had compelled a laparotomy, and the patient, a previously healthy man of 55, died. The primary cancer was a very small neoplasm in the esophagus which had not caused any clinical symptoms at the time of death. The "perirectal cancer" and tendency to stenosis was a necropsy surprise in the second case—a woman of 33 with multiple metastases of a mammary cancer—and also in the third, a man of 60 with gastric cancer.

Feb. 19, 1920, 82, No. 8

Strophanthin. Marie Krogh.—p. 249.

Progressive Lipodystrophy in Young Woman. J. Helweg.—p. 261.

March 4, 1920, 82, No. 10

Acute Orbital Disease Originating in Nasal Sinuses. S. H. Mygind.—p. 305. To be cont'd.

*Immunity to Influenza. H. C. Hall.—p. 317.

*Intestinal Contents of Mummies. J. W. S. Johnson.—p. 326.

Immunity After Influenza.—Hall states that at the Bispebjerg hospital among the 500 patients with influenza in four weeks early in 1920, 8.2 per cent. had had the disease during the 1918-1919 epidemic.

The Intestines of Mummies.—Johnsson relates that the mummies found in the excavations at Nagaed-der in Upper Egypt had not been embalmed. The intestines contained relics of grains and epithelial cells of a common plant, the trichodesma, which is a household remedy to this day in certain countries for intestinal irritations and catarrhal conditions of the air passages. He believes that the plant has been taken as a medicine because it was not found regularly among the eighty mummies, only in a few, and in three was accompanied with mouse bones which are known to have been used medicinally by the ancients. The alkali in the bone powder was accompanied with scraps of cyperus and trichodesma. These mummies date from before the embalming period, more than 5,000 years B. C.

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THE OBLIGATIONS OF MEDICINE IN RELATION TO GENERAL EDUCATION

PRESIDENTIAL ADDRESS *

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WASHINGTON, D. C.

In the old Navy a midshipman was defined as a person with no rights and few privileges. Many societies and associations have a feeling akin to this about their president and regard him as a sort of lay figure on which to drape honors but from whom no serious participation in affairs is expected. It is no empty honor and no small privilege to be permitted to address the American Medical Association. I hope no one will think that I am exceeding my rights or straining my privileges in taking for discussion a subject which has been largely entrusted, during the Association's long campaign for the education of the public and the improvement of our medical schools, to members having special knowledge and special ability. It is my good fortune to be granted the floor here this evening, and I firmly believe that, while leadership belongs to the few who enjoy peculiar qualifications, intelligent cooperation is the obligation of all; that if the measures concerted in committees are to succeed they must have behind them the force of general approval and of lively interest in proportion to their importance. I therefore conceive that it is my part to foster by every means in my power a general participation in the educational program which has characterized this Association since its incipience.

It is glorious to think that the practical, material benefit which we anticipate from this meeting is only secondarily for ourselves. We want to be more capable in the service we render to our patients rather than to increase either fame or fortune. This is very well as far as it goes, but it is not enough. We must realize afresh at each annual convocation that before being members of the Association we are physicians, before physicians citizens, before citizens men. So far as we neglect the functions of the citizen or forget the obligations created by man's social environment and repudiate every duty not directly connected with private practice, we are recreant to a high trust.

In the recent war the medical men of America laid aside their practices at no small sacrifice and with no small risk to their future prospects to play the patriot; and so did lawyers, business men, teachers in colleges,

scientific investigators, and so on. It was a noble stand to take, but the glory of this spontaneous uncalculating action will be considerably dimmed if, now that the threat of invasion, the foreign menace to our institutions has passed, we relapse into that narrow life pursued by so many who tacitly maintain that because they sustain important private relations to the sick they are absolved from participation in the struggle for the betterment of town, city, county, state and country, and of the world itself.

In this matter of responsibility outside of mere professional life we all need education, and what more fitting opportunity than this to solicit from you all a holier dedication to your patients' interests by thinking of what they need to be told, how they should be guided and how helped when they are not actually suffering from bodily ailments? When we do this we are at the threshold of social and preventive medicine—a medicine of education as well as of prescribing and operating.

EDUCATION OF THE PUBLIC IN HEALTH MATTERS

The education of the general public in matters relating to health has not been entirely overlooked in the United States. A good deal has been done, especially in the last few years, but the sum total is small indeed when considered, on the one hand, in relation to the importance of the subject, and, on the other, to our great territory, huge population, vast resources, multiplied and highly productive forms of energy and our general advance along all lines. Certainly in many details of health regulation and health promotion we are behind the older nations of Europe, relatively if not absolutely. True, we have an infinity of things to enrich and brighten life which they lack, but these have resulted from a desire for comfort and the reduction of manual labor, and have not grown out of the pursuit of health, which, as a matter of fact, is not always enhanced but may be seriously jeopardized by ease and luxury.

After the dissipation of life incident to all great wars, men invariably turn to the importance of saving life and prolonging it, and health-giving measures excite at least a temporary interest. We shall therefore miss a great opportunity if we do not at this time use every endeavor to press home the great self-evident truths about health and long life as they affect national prosperity and race permanence.

Is there any one who doubts for a moment that the physical integrity of its citizens and their ability to deploy all the energy which unvitiated, untainted nature can generate are of the first importance for the onward and upward progress of this republic? Is the health of the nation a national concern? If so, then the nation as such should go into the matter with the same busi-

* President's address before the American Medical Association at the Seventy-First Annual Session, New Orleans, April, 1920.

ness acumen, on the same scale and with the same continuity of effort manifested in any other vital public concern. There is certainly no occasion to advance arguments on this score. No educated and thoughtful man can deny that physical stamina plays an enormous part in the prowess and permanence of peoples. We see families, tribes and races spring up from a mysterious, nebulous origin that baffles alike the research of the philologist and ethnologist, reach a climax of development and power, and then decline. These fluctuations of fortune are genetically connected with physical conditions such as geographic location and its corollaries climate, food supply, parasitic infections, local foci of disease and perhaps the necessity for more or less consanguineous marriages. As a result of local conditions unfavorable to the propagation and perpetuation of a race, religious and social usages are evolved which form a sort of counterpart to those protective physical processes seen everywhere in nature.

One of the most remarkable and anomalous incidents of history is the way the Hebrews have preserved their race entity and characteristics though deprived for two thousand years of a local habitation and though prior to their final dispersion they had been for centuries the objects of foreign domination—enslaved, driven out, carried into captivity. While today the Jews may enjoy the benefits of other civilizations than their own, it is generally recognized that in the earlier periods of their history their cohesion and their national achievements were largely the result of a unique and remarkably extensive hygienic and sanitary system far beyond anything employed by any other race. Their peculiar observances were not due to the influence of physicians, to whom there is scant and none too favorable reference in the Old Testament, but embodied the wisdom of Egypt and Mesopotamia and had behind them the force of civic and religious obligation and were administered by the priestly caste. Carl Sudhoff of Leipzig, the modern authority on medical history, has characterized the Hebrew Sabbath day of rest and the direct prophylaxis of disease as the two greatest hygienic thoughts of mankind.

THE STATE'S NEED OF STURDY MEN

Can we pretend for a moment that the stability of Rome through twelve centuries of existence under kingly, republican and imperial rule, vexed by enemies within and without, was not dependent in a large degree on the extensive municipal provisions for health, which included an ample and excellent water supply, adequate drainage, extramural sepulture, and on the universal respect for physical prowess and physical hardihood inculcated by kings and consuls and not by the physicians, who to their lasting shame cared little for these things? We know how much the national life of Sparta owed to its rigid discipline and the paramount emphasis laid on bodily vigor, and how Athens all through its glorious period of intellectual development continued to cultivate physical perfection, not only because the artistic sense of the Greeks was gratified by beauty of form and symmetry of proportion but also because the old Homeric and pre-Homeric belief still survived that the deformed or depraved physique was to some extent an index of mental abnormality and moral blemish. In all this we are not up to the level of the Greeks of 500 years before Christ; for while science has gone far toward

demonstrating the extent to which conduct and happiness depend on conformation and structure, we do practically nothing about it.

To my mind the most paradoxical feature of our modern civilization is the indifference of a comparatively educated and well informed world to the human body, which is the most marvelous of nature's products and has been styled by Sir James Paget "the most complex mass of matter in the known world."

We are astonished when we reflect that man inhabited the earth and examined himself and his surroundings for thousands of years without discovering what seems to us so evident a thing as the circulation of the blood. But is it not extremely likely that future ages will comment with astonishment and scorn on our stupidity in not carrying on as a nation a systematic effort to improve physical development and to further physical conservation; in allowing our children to grow up in utter ignorance of their bodies and, if ignorant, necessarily neglectful of them?

I submit that the nation's health is a national concern; that it underlies all industrial and business effort; that it is the fundamental element in successful competition with rival nations, whether under the slow and prolonged strain of commercial contests or the sudden and imperious demands of armed conflict; that if we look ahead, as true love of country compels us to do, and estimate the trend of future events, we must acknowledge that physical vigor will, in a large measure, decide our complete development and permanent possession of the land which our forefathers won for us not only on the fields of battle but in strenuous struggles against the elements; in the mighty labor of felling forests, tilling the soil and developing the resources hidden in the heart of the earth.

I am very far from undervaluing the work of the many agencies already engaged in indoctrinating the people in the fundamentals of health; but it is undeniable that so far their efforts have been inadequate to the magnitude of the task as I conceive it. The campaign must be one of concerted measures, nationwide in extent and unflaggingly prosecuted.

TEACHING OF HYGIENE IN PRIMARY SCHOOLS

I think that up to the present we have been guilty of a cardinal error in seeking wholly to proselyte the adult. Our preaching has been to people enslaved by the chains of lifelong habits. We have advised men with damaged hearts and kidneys and blood vessels to eat and drink and smoke less; to take moderate exercise; to learn to relax and play; to avoid undue excitement so that they might spin out the thread of life by a few years. We have appealed to high school, college and university students to abjure tobacco and alcohol; have held up personal purity as something of supreme importance, given instruction about venereal diseases, instituted courses in personal hygiene that perhaps conveyed to them for the first time in their lives some rudimentary knowledge of their own bodies. In all this we have overlooked two things. The man of middle life cannot make his depraved body over and replace worn out organs. If he stops work he dies for lack of occupation. If he gives up some habit that has become an integral part of his being, he may suffer devitalizing mental and bodily reactions not unlike those of the opium eater deprived of his drug. The best he can do, and what he is most likely to do under the influence of this health propaganda, is to plan to

bring up his children on the lines suggested. This would seem at first blush to be a very definite and valuable result; but whoever has attempted in his own family to reform modes of living, whether in the matter of food, dress, ornaments, study or pastime, knows how difficult, how nearly impossible it is to accomplish any radical change which differentiates wife and children from the bulk of their associates and makes them the objects of comment. Young people are more gregarious than adults, and far more bound by the ethics and standards and practice of their kind.

In the second place we forget the pitiless logic of youth. The lad or maiden who has for five, ten or fifteen years been goaded to study grammar, mathematics, languages; on whom there has been exerted insistent pressure to acquire mental attainments, cannot easily be persuaded later on that a subject kept in the background or displaced in favor of something else is the one of paramount importance. We cannot expect the young to believe that hygiene, physiology and health are matters of prime importance; that their parents and teachers really esteem them such, when everything else has come ahead of these subjects. The children are right, because we do put first what we esteem to be first. They infallibly consider that health teachers are mere faddists and reformers, and that it is more vital to the gratification of their ambitions and their success in life to know the length of the Amazon and to be able to give the order in which different politicians have occupied the White House than to understand the oxygenation of the blood or the nature of a reflex movement.

I propose that we abandon at once all half measures, get away from routine, conventional methods and embark on something new, radical, revolutionary, but something at the same time perfectly feasible, if undertaken on a scale fully commensurate with the colossal results desired. We recognize that the nation must be composed of individuals having a maximum of physical strength and we believe that these individuals must be carefully educated; that is to say, mentally and morally developed, if we are to be something more than the world's bully, and if America has a destiny and a mission related to the world's ultimate amelioration. But just as our race as a whole must have physical integrity for survival in the struggle with its rivals, so the individual must have health and strength as a groundwork for all mental development.

SOUND HEALTH THE FIRST REQUISITE OF A LIBERAL EDUCATION

Let us throw out as irrelevant and misleading the occasional benefits conferred on humanity by the prodigious accomplishments of some individual whose genius bordered on insanity; let us forget that here and there an invalid, a neurasthenic, a neurotic has enriched the intellectual life of the world or done some epoch-making thing. Such facts do not invalidate the general proposition that sound health is the first prerequisite of a liberal and rounded education, and let us as a nation proceed henceforth not simply to give intellectual adherence to that proposition but to act on it. In other words, let us begin the child's education by teaching him health before everything else; first in point of time, first in importance.

Our primary schools have received not a little attention lately. They are better built and have better lighting and ventilation than in the past. We examine

the pupils for enlarged tonsils, bad teeth and granulated lids. We are instituting various commendable reforms, which should be continued and expanded, but they all belong to what might be called an extrinsic method of procedure. We must have something intrinsic. We must get possession of the child himself, affect his inner consciousness, modify his personality and give his life a definite bent, so that he will progressively and increasingly contribute by his own efforts to secure and preserve the health indispensable for the fullest use of the opportunities of high school, college and university. One of the most valid arguments against the higher education of women is the well recognized fact that the intense mental application of the really serious student is often accompanied by suppression or irregularity in certain important bodily functions. Therefore, an accumulated reserve fund of health, and habits of health, are as essential to her success at college as the girl's ability to pass the entrance examinations. It is too late to acquire health habits when the need for them begins to be felt, nor can we impart a proper sense of the importance of our health message to the high school girl if we wait until she is 16 to deliver it.

The primary school is universally recognized as the place to acquire certain things indispensable to future mental development and ultimate success. There is world unanimity about these essentials, but how common it is to have to take children out of school for reasons of health before they have got well into the three r's—reading, writing and arithmetic. What I propose is to go back of the three r's and begin all education by instilling into the child before he can read or write some knowledge of the human machine and the laws that regulate its upkeep; to elaborate and intensify this teaching step by step with other instruction, showing by practical illustration how to obtain the maximum yield from this machine.

Childhood is the habit-forming and the impressionable age. Churches wisely recognize this, and by means of the catechism, the Sunday school, and numerous other direct and indirect influences, seek to fashion the plastic mind and heart of the young into harmony with their worthy purposes.

In our plans to develop citizens with a proper sense of their public duties and privileges we take advantage of many of the instincts of childhood. We exhibit the flag, we have the children sing patriotic songs; later we give them outlines of community interests and civic economics. Occasions of national importance, military parades, the presence in the locality of some great public character are seized on to arouse and develop the patriotic spirit. But so far we have not gone to the root of the matter or seriously attempted to make health and the health cult the foundation of the child's education, which I conceive to be the only way by which later we may have lawmakers and law-abiding people who will put healthy living ahead of every other kind of living. The beginning should be made in the kindergarten, where already something is accomplished toward teaching appreciation of form and color; but the wonderful opportunities of this golden period are otherwise almost wholly thrown away. In kindergartens and primary schools singing might with propriety be insisted on. Children love to sing, and every harmless natural impulse should be fully utilized. There is an enormous moral value for young people in everything that illustrates the power of cooperation.

A few good voices will carry along with them the feeble, inaccurate ones. The total volume is inspiring. Each feels that he has contributed something toward the pleasurable result. Furthermore, singing has great value as a health measure because it requires expansion of the lungs. Children love to romp and play, but some of them need to be taught to play right; to breathe through their noses. When they do not do this there is an obstruction. It should be corrected before the consequences to cranium and ear become serious. Defects of bony and muscular structures should be discovered in kindergarten and primary school, because when found early many of them can be corrected.

The teaching of physiology and hygiene to the youngest pupils requires no book, but it does require a trained teacher. Unfortunately, however, there are teachers who do not care for that feature of the work even though they are competent. The reason for their indifference to the subject is that they did not grow up in that atmosphere of health culture which I would like to see created for the next generation. Some teachers prefer telling and reading fairy stories, and a little of that is good; but we have too much of it. The young pupil grows to demand entertainment and then to resent any call on him for serious work. Pleasure in work is an undoubted aid to concentration, and hence, if, in the instruction of a child, we can in some measure coincide with natural bent and inclination for certain studies, there is great gain; but this is essentially different from attempting to conduct education as a holiday excursion up the steep slopes of Parnassus, a journey which still has to be made on foot and involves for rich and poor in worldly goods or mental attributes no small privation and effort. Pleasure in work should be the aid, not the object.

The really clever teacher makes his subject entertaining and interesting but does not wander far afield in search of mere diversion. The teaching of health and the first anatomy and physiology lessons will be by the Socratic method of question and answer, and by the still older case-method first known as the parable. There will be no fear of lack of interest when the day's session begins with a tale like this: "John ran away from his mother. He was so little and he ran so fast that he fell down. There was a piece of glass just where he fell and he struck the sharp edge of it with his hand. What happened? What made the blood come? What is blood? Do animals have blood? What is it for? How was the bleeding stopped?" Such lessons can be varied and multiplied indefinitely and made practical by reference to or, when possible, by actual demonstration with natural objects and natural phenomena.

They are very much mistaken who tell you that children cannot think and would have early instruction rely in the main on memory. Even very young children do far more thinking and think far more accurately than the average adult realizes. They are not capable of abstract thought; but in relation to the things of everyday life they are constantly observing and trying to deduce conclusions.

The child is forever discovering new and surprising aspects of his terrestrial environment and is eager to investigate them. He gets into many a scrape through ceaseless experiment with cause and effect. He is eternally asking, "Why?" What a field is this young mind for the sowing of seed, and how much needless

suffering and disappointment he can be spared if we will only teach him the important things first.

In the kindergarten and in the lower grades of the primary school which are to be devoted, in the proposed scheme, to health and hygiene, clean hands, clean finger nails, clean faces, proper carriage, proper breathing; sound, well-brushed teeth, and all the little details of physical deportment that are matters both of social convention and of health (like the use of a handkerchief for a moist nostril, holding up the hand to cover the sneeze or cough) will receive reward and make for class standing exactly as does the correct solution of an algebra problem or a good recitation in the higher grades. As the pupil grows and advances, the health instruction will be increased and extended, and will, I am sure, serve to make chemistry, physics and natural history more interesting in themselves, while, conversely, these topics will render more intelligible the hygienic lessons.

PUBLIC SCHOOLS AS NATURAL HEALTH CENTERS

Our public schools, then, must become the health centers of their respective communities. Every measure carried out in them should be fully explained, so that the wisdom of preventive measures shall be fully appreciated by the pupil and he may become an advocate of them for the rest of his life. Will not the children who have been cured of hookworm and its attendant anemia, and come to feel the joy of physical and mental vigor for play and for work, be lifelong converts to health propaganda, and will they not be deeply interested when the cause of their previous disability and its cure is explained?

In connection with the bowl of hot broth furnished daily there may be lessons in diet. Temperance in all details of food and drink may be inculcated at the same time that the evils of alcohol, tobacco and narcotic drugs are set forth. Then the necessity for scalding knives, forks and spoons must be emphasized and the menace of the mouth secretions fully explained. The child must acquire, on the grounds of health, the same horror of the mouth secretions that refined people have for the spitting habit.

Such a program may commend itself to you, but the difficulties attending its execution are rather staggering. In the first place, we must have better teachers, and that means teachers who have had special training and will therefore expect better pay. There will be need for special textbooks, and this is one of the most critical features of the whole business; for good books of any kind for children's use, and especially textbooks, are among the hardest things in the world to produce. A mere rehashing and boiling down of an advanced treatise will not meet the requirements at all. We must captivate the imagination. We must arouse and hold interest in the topic discussed; we must stimulate thought, avoid overtaxing the memory and teach only facts which are scientifically sound, however simple the presentation. Now we have men and women perfectly capable of handling hygiene, physiology and physics in the proper way, but publishers are slow to take up new lines until they are convinced that there is a demand justifying the expense of an edition; and so long as such a movement as this is begun in a small tentative way and as a local experiment, publishers will hesitate.

While on the subject of schoolbooks, and having in mind the examinations conducted under the draft law,

which revealed a high percentage of refractive errors in our adult population, I cannot refrain from making something more than a passing comment on the type used in the schoolbooks supplied to young children. Some thought has been given to schoolroom illumination and to proper posture in reading, but nine children out of ten, if left to themselves, get their noses on the paper when they write; hold the book too close when they read, and will do both without regard to the quantity or source or direction of the light. Dr. G. I. Hogue, in an address before the schoolteachers of Milwaukee, estimated that 30 per cent. of the schoolchildren of this country had some visual defect. In Milwaukee, 27.24 per cent. of the schoolchildren had visual defects. In New York City, out of 650,000 children in the public schools, 30 per cent. at least were two grades behind what they should have attained. Ninety per cent. of these backward pupils are suffering from some defect in eye, ear, nose or throat. He estimates that out of 22,000,000 schoolchildren in the United States, some 6,000,000 suffer from ocular trouble. Good food, ample exercise in the fresh air, and hygienic surroundings will counterbalance a host of objectionable practices; but the ever-growing strain imposed on the human eye by modern life calls for special consideration. I profess no special knowledge of the pathology of the eye, and I have consulted no specialist preliminary to making these remarks; but I do not hesitate to declare that the time is ripe for a reform in the construction of children's schoolbooks.

CAUSES OF EYE STRAIN IN CHILDREN

When you get home from this meeting take your child's geography, history or arithmetic—if not blessed with a child of your own, a nephew, a niece, a neighbor's or a patient's child can supply you—and observe what a large proportion of the text is in fine print. The paper is good; the illustrations are attractive, and the binding is child-proof; but the questions for review, the footnotes, and much of the explanatory matter are set up in six point. I think I am very conservative in the opinion that no child of 10 or under should have to study a book printed in anything smaller than twelve point lower case or eight point capitals, and older children should not have to con by the hour a type finer than ten point. If fine print could be officially stigmatized as a menace to eyesight; if the federal government were to forbid the transmission through the mails of children's schoolbooks improperly printed, we would have a ready solution of the problem. Left to the example of the individual school or to the individual state, the correction of an evil of this kind will not be achieved for many, many years.

This thought and a consideration of the difficulty of securing the services of properly trained teachers and sanitary inspectors and physicians not merely for local experiment, for the collection of data, as a demonstration of some useful doctrine, but as part of a continuous and permanent health campaign, lead naturally to a consideration of government responsibility for the public health fostered and encouraged in the children but affecting also the adult in relation to trade and commerce, preparation for war and so on.

I wish that the public had a fuller appreciation of the really great educational work of our distinctly military services. Through the work of the medical officers of the Army and Navy, our government may be

said to have been carrying on for years a health propaganda, within the sphere of the activities presided over by two cabinet officers, affecting directly some 200,000 men in time of peace, and, to a much more limited extent of course, in the past three years acting on a force of several million men. But if we continued to maintain an army of from two to three hundred thousand men and a navy of a hundred thousand, the matters of health which are made prominent in military service would still not directly touch half of 1 per cent. of our population, and we have these men under our influence for relatively short periods—not more than from four to eight years out of a life of three score. This humanitarian, educational work is an incident and not the chief purpose of the departments referred to.

We have to admit, then, that vital as it is for us to maintain a high standard of physical development for the eventualities of war, neither the Secretary of War nor the Secretary of the Navy has any way of concerting measures which will assure for the military needs of the country the necessary number of men of sound bodies with unimpaired special senses. We reject every year thousands of applicants for enlistment who are ineligible for service by reason of conditions which might be regarded as preventable but which are not prevented. We reject men with serious defects of the teeth, with inferior vision or color perception, insufficient development of muscle, bone and tendon, poor heart-action and a defective innervation. Furthermore, the conditions of life in this hurried age; the social environment of the tenement; insufficient training in the home or the lack of a home, and the ravages of alcohol and syphilis in parents, are making for the development of neurotic and unstable types unavailable for service training in peace and of worse than no value for war. All these men are debarred at the recruiting office, but what becomes of them? The Secretary of War and the Secretary of the Navy have no cognizance of them, but they remain a part of the nation, an element of weakness, a burden, a disgrace, and transmit their defects and weakness to their children. The bad teeth; the weak, strained eyes; the overworked, injudiciously used hearts, and the distorted and depraved nervous systems are all preventable. Whose care is it to concert far-reaching plans to fend off from the younger generation and future generations ills that are not by any means an inevitable concomitant of birth?

NEED OF A FEDERAL DEPARTMENT OF HEALTH

Besides those specifically charged with the defense of the country, we have eight other presidential advisers or cabinet officers, each at the head of an extensive establishment and, together, they are supposed to have a supervisory action in regard to the great fundamental needs of the nation; and yet no one of them is specifically charged with the care of the nation's health. Neither the Department of the Interior nor the Department of Labor takes health into account on any considerable scale. It is by what might be called an accident of birth that our very efficient but small Public Health Service is conducted by the Treasury Department.

The U. S. Public Health Service, originally called the U. S. Marine Hospital Service, dates from 1798, when Congress made provision for the medical care of sailors in our merchant marine by generously muic-

ing each sailor 20 cents of his monthly pay for the support of hospitals ashore and for the pay of the physicians who worked in them. The money was to be collected by the several collectors of customs, who were of course officials of the Treasury Department. It was not until nearly a hundred years later that this body of physicians had any but a curative function.

In 1878 Congress directed the supervising surgeon to prepare and forward to state and municipal health authorities weekly abstracts of consular reports and other information relating to contagious and epidemic diseases; but it is interesting to note that even in 1796 Congress had recognized some measure of responsibility for public health by passing an act requiring all revenue officers to cooperate in the execution of state health laws.

In 1879 Congress appropriated \$50,000 for a National Board of Health, whose existence was limited to a period of four years. This board owed its creation to the terrible epidemic of yellow fever raging in the Mississippi Valley. It was after this that the Marine Hospital Service was financed by funds voted by Congress for the specific purpose of preventing the spread of epidemic disease, more particularly smallpox and yellow fever.

In 1892 the Marine Hospital Service achieved notable results in preventing the introduction into this country of the cholera so extensively prevalent in Europe. Then came the passage of an interstate quarantine law and later a national quarantine act in virtue of which a systematic examination of all immigrants has since been maintained. Gradually this service has assumed a distinctly educational function. Its research laboratory was one of the first agencies of the kind. Its work in connection with malaria, pellagra, hookworm, infantile paralysis, leprosy, rabies, typhoid and Rocky Mountain fever, school hygiene, the pollution of water, trachoma, the problems of rural life, and railroad and industrial sanitation, has been of a high order.

I give this outline of the history of the United States Public Health Service because I think too little is known of what it has accomplished; because its growth in importance shows very plainly that, as the value of this kind of work became more and more apparent, ways and means were found to make it possible. The work has been economically done by trained experts often opposed by local prejudice but far more seriously hampered by general indifference and by the fact that they could act only in an advisory capacity, and were only a side issue in the Treasury Department, whose main concern was with other and very unrelated affairs.

This history of the Public Health Service illustrates how the government has been able to play a rôle of considerable importance in promoting public health though acting in an ancillary capacity, and we see how from purely medical practice its members have assumed more and more an educational function. Then, too, in recent years the government's obligations have been recognized by the passage of pure-food and child-labor laws; by enactments regarding the sale of narcotic drugs; by assigning to the Public Health Service supervision of the manufacture and sale of serums and vaccines. But today the public health is, so far as the federal government is concerned, a matter of secondary importance, whereas it should be first.

WASTAGE OF LIFE AND NATURAL RESOURCES

As a people we are of all civilized nations the most wasteful of human life as well as of food, natural resources and public funds. France and Italy have a minister of public education, and England has a ministry of health. During the year 1917 our railroads, which under government administration cost us a million dollars a day, were responsible for 194,000 injuries, 6,300 of which resulted in more or less serious crippling, and for 10,000 deaths. In the same year the funds assigned for the maintenance of the U. S. Public Health Service, including its laboratory, its department of zoology, its field work, the salaries of 200 medical officers and 1,800 other employees totaled \$3,250,000. That is to say, the national government's expenditure for its only accredited and official agency for the care of the national health was at the rate of a little over 3 cents a head for the total population. As regards vital statistics, birth registration and morbidity reports we are far behind Europe.

Doubtless the size of the land in which we dwell and the large population account somewhat for our laxness in these things, and of course the nature of our political organization does not make for a uniform and general plan of endeavor to increase physical endurance and physical capacity for output. Absorption in local needs and exaggerated or misconceived ideas of local rights bring a forgetfulness of the interdependence of these states and of the universality of public health interests. How often it happens that the least salubrious section of a state becomes the least populous, though its forests or mines or water power entitle it to be the most thickly settled. If sparsely inhabited, it of course has scant funds for ditching and draining, wholesale eradication of mosquitoes, adequate water supply or whatever the remedy may be. Under federal administration the greatest need would constitute the greatest justification for reclamation, and help would be more generally and systematically extended to counties and states which could not afford to remedy expensive local defects.

A department of health in Washington would be purely civilian in composition and would call to its aid or give its assistance to all private or corporate forms of endeavor, very much as the Army and Navy call on the Carnegie Foundation, the Rockefeller Institute or the American Red Cross. Then we would coordinate effort for improved public health of every kind and make it continuous and progressive instead of desultory and sporadic, and many problems would be diligently attacked which now, in spite of their importance, must wait until some great calamity excites public attention or arouses the sympathy of a philanthropist.

FACTS REVEALED BY THE OPERATION OF THE DRAFT LAW

We have learned and the general public has learned a good deal about our national weakness from the facts revealed by the operations of the draft law. Massachusetts, stimulated by the knowledge of the number and character of the rejections for military service, and other sections of the country alive to the declining birth rate of the white race are proposing enactments to remedy crying evils in the physical development of our people; but years may pass before other sections awake to the importance of these efforts. Mean-

while the whole nation is concerned, and the nation as a whole should be at work to remedy what is wrong.

If Massachusetts or Louisiana were to conclude that fine print and footnotes in children's textbooks were producing eye strain in the pupils of the primary classes in its public schools, and passed laws forbidding the use of a book in any of their public schools unless the type was of an ordained and specified size, this would be fine for the children of those two states. If, again, these sections of the country took steps to improve the general physical development of the young, this would be commendable and useful; but to what extent could Massachusetts or Louisiana supply the needs of the country in time of war? There is much to be learned from war, hard and cruel lesson though it be. As a nation shows itself in war so it is in peace. There is in war a test of the nation's capacity for the tasks of peace. War disrobes us of the figments of conceit and fancy, of self-satisfaction and egotism, and leaves us naked before the mirror of truth. The World War has been a liberal education to some of us. It should be used as a means of enlightenment to everybody.

How are we to explain the fact that the older sections, such as New England, New York, Virginia, North Carolina and Louisiana, lead in nervous and mental disorders; that in defects of the eye New York, Boston, and New England generally and the cities of Ohio, Michigan and Illinois were the most conspicuous; that Rhode Island led in defect rate and Vermont came next, while Kansas had the lowest defect rate of all the states; that the extreme northeast, including New York and New Jersey, made the poorest showing in regard to the teeth? Are these fortuitous facts or are they susceptible of explanation and correction? It is clear that when we have as physicians informed ourselves on these topics there must be education of the public to prepare it to cooperate with, and there must be legislation to enforce, the necessary corrective measures.

There is a mystery in the report of the Provost Marshal General that Oklahoma and Arkansas for the number of men examined gave the highest percentage of men going into Class A, and Arizona and Rhode Island the lowest—men in Class A being the fully qualified, able to see and hear well, able to transport themselves by walking, having a circulatory apparatus able to stand the stress of physical exertion, the intelligence to understand and execute military maneuvers, obey commands and protect themselves.

NATION-WIDE VERSUS STATE CONTROL OF HEALTH MATTERS

How impractical to expect that any one state alone, or even two or three, should go into the study of these things at considerable expense, or that just and reliable conclusions could be arrived at from such a partial study! These are national matters most easily, most economically and most satisfactorily studied as national questions by national rather than local agencies. Not for a moment do I undervalue the investigations carried on by benevolent and scientific societies or corporations. One would have to be profoundly ignorant, deeply prejudiced, singularly ungrateful, to do so. Such enterprises excite discussion and help to create public opinion; but how slow is the general advance, how lacking in uniformity and concentration are the efforts of individuals and societies working in the

interests of a hundred million people! In America we are too prone to leave general measures for general betterment to professed philanthropists; and here as elsewhere what is everybody's business is nobody's business. There is a supineness, an inertia, a criminal neglect in the nation which surrenders to private agencies matters which are of vital concern to the development and expansion of the race and to its triumph in peace or war. Shall we be content to rely on the public spirit of liberal and enlightened millionaires, of a Carnegie or Rockefeller, to do for us, with all our boasted wealth and civilization, things which smaller and less rich nations regard as essential obligations of the governments they maintain and support; and is it not a devitalizing, corrupting, enervating, in every way demoralizing influence in our national life to trust for essentials of national happiness and success to what we must admit are accidental agencies?

I can perfectly understand a strong disinclination to any step that might appear to open the way for government control or restriction of the practice of medicine or that tended to paternalism, especially in view of the agitation developing here and there for all sorts of medical, dispensary and hospital privileges. On the other hand, history teaches that when in the complexities of modern life radical tendencies assume such force as to result in insistent demands for unusual and excessive privileges, it is easier to anticipate and circumvent than to overthrow them in open conflict. History teaches also that greed and violence are usually the result of previous injustice or neglect. There are no fortuitous happenings in nature. The geologists have long since ceased to talk of catastrophism; the physicists and chemists no longer recognize spontaneous combustion, nor do the biologists admit spontaneous generation. In the same way the convulsions of society always have a definite cause, although it may be deeply hidden. Whenever the superior intelligence and education of a given time or locality are threatened with overthrow by the force of an unreasoning mass, we may be sure that there has been neglect on the part of the superior or better favored to discharge its obligations to the inferior or less favored element. If as a nation we are lacking in all the proper provisions for promoting health and longevity; if the physicians who know about these things ignore their obligation to agitate in the matter and obtain results on legitimate lines; if everything that we consider needful to health in connection with industries, public carriers, charities, and the like is not done according to the means and the light we possess, we may be sure that sooner or later a wave of protest and clamor will sweep over the nation and that we physicians, along with other members of the educated classes, will have to pay an excessive price for previous passivity and indifference.

As a general proposition, I am firmly opposed to the disposition to saddle every public and semipublic enterprise on the government, a tendency arising from a profound misconception of government and its legitimate function, and often associated with a disinclination on the part of those displaying it to perform their own individual duty. But I am unqualifiedly in favor of a national department of health with a cabinet officer at its head which shall by its very creation give a great object lesson to our people and shall correlate and vastly expand all the efforts now put forth for the improvement of the race, the prolonging of life and the full development of physical capacity for work and

production. By reason of what it has accomplished in the past and because of the incalculable volume of influence which its individual members can exert in the various communities where they labor, I believe this this Association can effect this legitimate enlargement of government effort as soon as it sets to work whole-heartedly to do so.

I have drawn your attention to the vast latent possibilities for health propaganda in the public schools. I have tried to show that the nation's health, being a vital national concern, should be the particular care of a department of government on a par with the importance, dignity and power of existing departments which affect commerce, labor, revenue, agriculture, the mails and military preparedness; that popular government cannot ignore the human element, the physical element in the people. Permit me now to advert briefly to the practice of medicine as bearing on general scholastic training.

In the main, the medical curriculum of our leading colleges seems satisfactory, judged by the results. There are two points, however, which I do wish to mention briefly. In a recent able and discriminating paper, Dr. Hobart A. Hare of Philadelphia has brought out the well recognized fact that all recent graduates and many old practitioners are profoundly ignorant of drugs and how to prescribe them so as to get the desired results, and he has made an extremely important distinction between the invaluable researches of the scientific pharmacologist on the one hand and the teaching of practical therapeutics on the other. The medical student has no need, as an undergraduate, to engage in experimental work; but he should be taught what and how to prescribe, and to this end should have a short, simple course in practical pharmacy and a very thorough course in applied therapeutics.

In the second place I beg to submit that hygiene and sanitation are not given sufficient prominence in our medical courses. This is amply proved by the poor showing made in these subjects by the candidates appearing before the National Board of Medical Examiners. These topics should receive special emphasis, and the candidate for a diploma must be made to realize that competence in surgery, obstetrics or bacteriology will not atone for deficiency in a branch which, while not by any means fully setting forth the modern conception of medicine as a profession dealing with people collectively, socially and industrially, at least paves the way for a grasp of that conception.

For the medical school to provide a few lectures on hygiene is not enough. The school which does no more than this is not alive to the call of the twentieth century, which demands through the voice of rich and poor, of high and low, better living conditions for the world. We are tempted sometimes to berate the public for its indifference to health and its callousness to the wise injunctions of medical writers and speakers concerned with prolonging life by care of the body; but is not the public bound in such a matter to be behind the professed master, and are we not as the whole rather sunk in crass indifference? How many capable practitioners are really in a position to give sound, scientific advice on the thousand and one details bearing on the preservation of health derived from a knowledge of hygiene in any way comparable to the knowledge they are bound to possess in a score of other things if they are really the kind of physicians they ought to be?

Is not our profession constantly brought into discredit by the ignorance of the family physician and of the eminent specialist about matters of real and vital interest to the general public?

PRACTICAL KNOWLEDGE OF HYGIENE NEEDED BY PHYSICIANS

Our semiscientific and popular current literature, and even the daily papers, are constantly giving out bits of information about the flea, the louse, the bedbug and the mosquito in their relation to the transmission of disease. A layman does not quiz his physician about anatomy or pathology, but he does turn to him for enlightenment about these and kindred matters bearing on health and disease which he can understand and on which he would like to be informed. When the physician cannot fully satisfy the questioner about the rôle of these insects; about the potability of water; the danger of damp, newly constructed buildings; the proper trap to a water closet, and the infections that may be acquired from intimate contact with domestic animals, he loses enormously in prestige and, what is more important, he loses the chance to thrust home some valuable lesson in public health and public duty.

We are beginning to develop here and there schools offering special courses and special degrees in hygiene, and I think this is a forward step, for we must have men of special training prepared to do advanced research work in this field; but can any one reasonably pretend that the medical profession can wisely permit this branch to become one for specialists only, and that, while pathology belongs to the physician, hygiene and sanitation are not his sphere? On the contrary, will not the exhaustive teaching of hygiene and of public health medicine in our medical schools immeasurably enlarge the scope and improve the character of the practice of medicine itself?

Let us institute a thorough course in hygiene and sanitation, making a real knowledge of the subject indispensable for graduation. We could include in this course whatever features of the specialties bear directly on the public health.

RESTRICTIONS AS APPLIED TO CANDIDATES FOR ADMISSION TO MEDICAL SCHOOLS

Far more important than determining what particular subjects are to be emphasized and how the medical student's time is to be apportioned in classroom and laboratory is the standard of fitness to which a young man must conform before he can be permitted to study medicine. Admission to a medical school contains the implied promise that diligent application for a given period will qualify him for a diploma as a doctor of medicine. In justice to the public, to the profession, and to the candidate we must endeavor to establish three things before the medical school opens its doors to him. The prospective physician must be sound in body; he must have sufficient mental training and acquirements to enable him to pursue the course with profit; he must give evidence of those personal, temperamental and moral qualities which promise reasonable adaptation to the highest aims and purposes and to the best practice of the American profession.

The first step in establishing the standard for admission to a profession is of course to define the scope of that profession. The distinction between medicine as an unlimited science and medicine as an art, more limited in scope and confined to a comparatively nar-

row field, was alluded to in these words by Huxley: "It is so difficult to think of medicine otherwise than as something which is necessarily connected with curative treatment that we are apt to forget that there must be and is such a thing as pure science of medicine." I have this distinction in mind when I urge that we shall not so arrange our scheme of medical instruction as to make it lean unduly to fitting men only for the practical curative art biased by the American inclination to demand immediate and practical results in a business and financial way. Some of our graduates will infallibly prove by temperament ill adapted to private practice; and if they have had during their student days no vision of medicine, no introduction to it as a science, they will drift out of medicine entirely. If our schools are wholly planned with the idea of turning out only men who can at once become practical bedside clinicians, do we not to some extent limit the chances of our country's taking a prominent part in the further development of the science of medicine? It is this fear which makes me feel that there is a place in our medical faculties for teachers of certain scientific branches even though they are not themselves practitioners. It behooves us to have close affiliations with the pioneers, and as Maeterlinck has well said: "We must beware of abandoning ourselves unreservedly to the prevailing truths of our time."

The distinction between the science and the art of medicine is a vital one. In the program of our medical instruction we must recognize that these two aspects of medicine exist, and we should provide instruction that will make it possible for graduates to be scientific and practical healers of disease or to develop as purely scientific investigators.

People have been inclined in the past to consider the clergyman and the churchman dogmatic; but dogmatism is also the besetting sin of medical centers, medical schools and practicing physicians. We may not be able to prevent individual practitioners from being narrow and prejudiced in their old age, but we can at least start our young men off in their professional career with a strong impulse toward liberality of judgment and breadth of view.

There is, I am convinced, a real danger in the modern trend to practical instruction so called. The danger of neglecting the necessary fundamental and more or less abstract teaching for the distinctly enjoyable clinical and bedside work is increased by the realization that the latter has stronger attractions for the student and that it greatly facilitates the acquisition and retention of information furnished in the classroom. Students and even teachers speak of schools as theoretical and practical, having in mind apparently the distinction between didactic lectures and laboratory exercises; but it is very easy for an unconscious transposition of ideas to lead one to think of theoretical instruction as removed from the domain of usefulness to the sick because the word theoretical is connected with the idea of speculation and hypothesis. Now, as a matter of fact, by theoretical instruction in medicine we mean the abstract handling and presentation of scientific truth as compared with its application as a practical means of healing. With this clarification of terms it becomes manifest at once that the school must be primarily the place for medicine as a science; for if the young physician have not scientific knowledge, what is he to apply when he comes to the bedside?

ERAS OF MEDICAL TEACHING

We have known in this country the era of strictly practical medical teaching. The physician jogged along from house to house, and the neophyte who accompanied him saw the patients and picked up what he could about them through the dissertations of the preceptor. It was followed by the era of cheap medical schools where men were shown at clinics the manifestations of disease: where they committed to memory prescriptions for fever or diarrhea or cough. These schools had short courses, and the fees for diplomas were essential to their maintenance. We have, through the American Medical Association, rung the death knell of the medical diploma mill. But historical justice compels us to admit that there was much excuse, in our country's undeveloped period, for giving some kind of brevet to men willing to settle and supply what primitive rude aid they could in remote and sparsely settled sections that would never have attracted or adequately compensated those who had spent the time and money necessary for more complete training in the half dozen high-grade medical schools we possessed. Conditions are very different now; there is a more equal distribution of wealth and education throughout the land; standards and requirements of various geographic sections are more uniform.

Now let us not be led astray by the insistent demand that our improved schools shall turn out men able from the start to display a high degree of curative skill, for then we shall unconsciously develop a type of school that for our times and standards is little more than a glorified elaboration of the narrow, superficial institution of an earlier day. Let us teach the science of medicine as far as we know it and superimpose on and combine with that, regardless of time and cost, the art of applying it. Let us not be afraid to weed out those candidates for admission to the schools who have neither the acquisitive nor constructive faculties which give promise of development. Let us be primarily concerned with what our graduates will do for American patients and American advance in medicine five and ten years after graduation.

I look forward to the time when we shall have in this country an even higher standard than now and uniform medical requirements with comprehensive courses of five and six years as in England, France and Italy. The small, ambitious and ill financed private medical schools of the past have made impossible for us the practice of giving medical degrees of different values representing different degrees of preparation such as prevails abroad, because no school could expect to attract students if it conferred a degree less pretentious than that of the others. That a need for something of this kind has been recognized by the profession in this country is shown by the rise of the American College of Surgeons and other American colleges, to be a fellow of which implies an advance in attainments beyond those of the ordinary graduate. This need is shown, too, by the existence today of the National Board of Medical Examiners, an incorporated but privately supported organization whose aim is to stamp the successful candidates coming before it as men of peculiarly liberal acquirements.

The gradual elevation of state requirements for license to practice and their constant approach to uniformity justify this board in looking forward to a time in the near future when we shall have a single standard for the whole country; when men who have by their

actual work confirmed the justice of their title to practice in one locality shall not be under the painful necessity of undergoing examinations afresh if questions of health, family, finance, research or specialization lead them to remove to another section; when we can as a nation have proper reciprocal medical relations with the great educational centers and the licensing bodies of Europe. It is in view of all this and because of the need of a good deal of reform in our actual conduct of examinations that the National Board of Medical Examiners was organized. It is in pursuance of our desire to secure from Europe proper recognition of American progress in medical education, to tighten the bonds which unite us with our foreign brethren and to enable us to profit by their greater experience that this board invited to America as its guests the following distinguished gentlemen: Sir Humphrey Rolleston, K. C. B., of the Royal College of Physicians; Col. H. J. Waring, Fellow of the Royal College of Surgeons; Dr. Norman Walker of Edinburgh, and Professors Grégoire and Roussy of the Faculty of Medicine of the University of Paris.

In practice and in our preparation for practice we swing pendulum-like from extreme to extreme, and it would almost seem as if real activity, earnestness and conviction are radical and exaggerated, and that inevitably the effort to moderation and a rational conservatism involves inaction.

Galen in trying to stabilize medicine, to free it from wild speculation and the vagaries of individual schools and the excesses of individual teachers, bound it with iron bands and stopped all progress for thirteen hundred years. The Faculty of Paris, standing like a rock for a maximum of book learning, insisting that the physician must be a savant, holding to narrow conceptions of the dignity of the profession, despised the manual operations of surgery, exacted from aspirants for a license an oath to do no surgery, and by cutting itself off from the opportunities for acquiring that knowledge of anatomy, physiology and pathology afforded by operative investigation made the practice of medicine in France as dead and as meaningless as the branch which it so effectively circumscribed for four centuries. But just here is a feature of the development of medicine that we are apt to overlook. It was not until the itinerant bone setters, the cutters for stone, the oculists, the herniotomists succeeded in being admitted to the schools that they exercised any vital effect on the profession. The schoolmen were narrow, as every one admits, but the practical men who had not been to school were butchers, and they had no real influence until surgery in the person of Felix cured Louis XIV of a fistula in ano which had never been benefited by salve or unguent. Maréschal, successor of Felix as court surgeon, influenced Louis XV to establish five chairs of surgical instruction, and La Peyronie induced him to pass an ordinance making it obligatory for masters of surgery to qualify first as masters of art.

THE EVILS OF TOO PURELY ACADEMIC INSTRUCTION

In recent years we have perceived with ever increasing intensity the evils of a too purely academic instruction, and in the inevitable reaction to practical methods we run the risk of going to an equally dangerous extreme the other way. It behooves us to find a way to teach so that the two lines shall have their proper proportion.

The Renaissance, which introduced a deeper and wider study of the classics, was at the same time the period of humanism, a term I like because it suggests in itself how with the revolt against dogma came a fuller recognition of the human side of life; of the rights, the claims, the needs of the individual and an increasingly general recognition of the fact that the study of mankind is man. The Renaissance marked also what may be called the resurrection of the human body from the grave of ignominy and contempt into which it had been cast by the early Christian and medieval church in its fight against the lusts of the flesh.

Through the stretch of the centuries men have sought in vain the anatomic seat of the soul. Samuel Johnson aptly remarked that "all power of fancy over reason is a degree of insanity." We waste no time today trying to locate the soul in pituitary body or pineal gland, and we insist that physical findings are the basis of diagnosis and treatment; but the physician's preliminary education must take into account the sentimental and imaginative side of life. What true and worthy practitioner fails to feel the appeal of the soul in the searching look, fastened on him as he enters the sickroom? The physician's principal function, as in the days of Hippocrates, is still to assist the healing power of nature. We know that with all our science much of our medicine is without efficacy so far as its direct ostensible purpose is concerned. The doctor's personality, his power to inspire hope and confidence, his understanding of human conduct, his analysis of character remain his chief asset at the bedside. All ages, whatever the attainments of science, have produced great healers, and the family physician of an earlier generation with his kindly sympathy, his unselfish devotion, his capacity for toil and vigils must ever remain the ideal minister to the sick. It is the personality of the upright, big-hearted man whom people trust to use what knowledge he possesses rather than abstract scientific qualifications that counts in the long run. Can we expect men to qualify for the sacred function of receiving the confidences of sufferers in mind and body if we expunge poetry and philosophy and art from their preliminary education and wholly replace fairy tale and legend, Longfellow, Tennyson, Hawthorne and Shakespeare by so-called strictly scientific premedical work? We want a man broad in interests and understanding, not the recluse who finds more pleasure in dissecting a beetle than in viewing a sunset, who gets more soul satisfaction out of the hum of a machine just because it is a machine than in listening to a Patti singing the Last Rose of Summer. Dr. W. M. Beach of Pittsburgh well epitomized all this when he said at Atlantic City last year that "proficiency in the physician requires development in the direction of spirituality; there is a curative force that is moral."

THE KIND OF MEN NEEDED

We want the men who take up medicine in America to be big men; big in heart, big in brain, blessed with vigorous health. The possession of a store of facts is nothing as compared with evidence of native ability and sterling integrity of character. Before we permit a young man to matriculate in medicine we should have assurance that he is careful of his health and careful of his financial obligations; that he commands the respect of former classmates; that he has qualities that make for leadership: above all else that he understands and justly values and possesses that indefinable,

exquisite, delicate something as intangible but as real as the bloom on the plum and the fragrance of a wild flower—the sense of honor. Our inquiry into the pre-medical career of a prospective physician will be of infinitely more value if it enlightens us on these points than if it merely establishes his ability to memorize a book and on admission we discover that the high marks and the multiplicity of diplomas were won by a physical and moral runt. When our schools generally, as one or two now do, come to view the premedical standing as one to be deeply investigated and carefully passed on, we shall have fewer graduates, perhaps, but a relatively larger number of real physicians in whose ranks there will be no fee-splitters, no men of shady reputation and questionable conduct to disgrace us and forfeit our title to the confidence of fathers and mothers.

It is time that the subject of examinations be very thoroughly gone over by professional educators, and substitutes found for such methods of testing a candidate for promotion or honors as do not indicate reasonably lasting acquisition. The bulk of our examinations as at present conducted have but little to recommend them. Their only merit and the reason why the pedagogic world hesitates to discard them lie in the powerful stimulus they provide to the study of even the most difficult branches and the most obnoxious details. When, however, we stop to consider that the labor incited by examinations is usually not for the acquisition of knowledge but for the passing of the examination; when we admit that the modern examination determines, in the main, a very ephemeral form of attainment, we may find that something better than the examination may not be so very difficult of accomplishment after all.

PRESENT METHODS OF EXAMINATION

The present method is vicious for two reasons: First, it fails largely of its object because we do not get a correct idea of mental capacity and mental development, nor a proper appreciation of a student's grasp of the subject by examinations which he can undergo successfully by cramming. In the second place, cramming is a devitalizing process and the very opposite of memory cultivation, because behind the effort to acquire is the deliberate conscious purpose of unloading the mind of the stores taken aboard as soon as a given contingency has passed. The willingness to forget and the deliberate effort to forget negative and weaken the retentive power.

Memory is still an essential, but written examinations often demonstrate only that facile and superficial memory which picks up and carries for a while under stress of need very much as a stream in freshet carries down rocks and earth, dropping the heaviest first and bearing the sand even to its own finish in the ocean.

For years, in our examinations at the Naval Medical School in Washington, we have allowed laboratory notes to be used by candidates in the chemistry and hygiene laboratories, considering that memory for the exact quantities in various solutions is not required, nay, undesirable, where men are trying to do accurate work. What we demand are the principles involved, the meaning of the steps, the interpretation of the results. This is the method followed by the National Board of Medical Examiners. It is in the necropsy room, the laboratory and the hospital ward that we test the candidates in an endeavor to ascertain what they know by what they do, instead of judging entirely by what they say or write.

It is gratifying to observe that medical men are giving more and more thought to the subject of premedical education, and I consider this a most favorable augury for the future of American medicine. We may not yet be in absolute accord as to the means of obtaining the best type of medical student, but it is something to agree that we need in medicine the scientific investigator as well as the scientific practitioner, and that each is dependent on the other. We are agreed too that what we require in preparation for medicine is not scholarship but a process of training which shall develop a certain mental attitude as well as a certain degree of mental power. This unites us at once with the interests of the legal and other liberal professions, and a common platform as to our desires inevitably simplifies the problem of arranging a satisfactory high school course. If we wanted a strictly scientific course as a preparation for medical study we should be compelled to arrange for the paths of school and college education to diverge very early from those to be pursued by men looking to some other career; but I hope we realize today as never before that the true aim of preliminary education is not so much to fit men to study medicine or law or architecture as to help them achieve the fullest success in the pursuit of these several callings. If our primary requirement is for capable men, then we can combine with every other profession which is similarly more concerned with molding character and increasing the range of mental outlook than in making the final technical course easier by a preliminary one which invades the territory of the professional school.

BASIS FOR SCIENTIFIC STUDY

We must concede the soundness of the contention of Bain of Aberdeen that: "In a right view of scientific education the first principles . . . of all the great sciences are the proper basis of the complete and exhaustive study of any single science."

Sir George Makins, president of the Royal College of Physicians, does not think that we should relegate the teaching of physics, chemistry and biology to the premedical period for fear that the medical student may not have a sufficiently thorough grasp of these subjects. On the other hand, Thomas Huxley held very emphatically to an opposite opinion. He said: "The great step toward a thorough medical education is to insist on the teaching of the elements of the physical sciences in all schools, so that medical students shall not go up to the medical colleges utterly ignorant of that with which they have to deal; to insist on the elements of chemistry and the elements of physics being taught in our ordinary and common schools so that there shall be some preparation for the discipline of the medical colleges."

I agree with both Makins and Huxley. My own view is that these subjects should be taught in the school and college course and in the medical school also. In the preliminary courses, pupils should acquire a knowledge of the great fundamental principles involved and the methods employed in scientific work, because all this emphasizes the value of accurate observation and correct interpretation of facts, and both of these mental processes are invaluable in every department of human activity. The future lawyer, doctor, business man needs this training. In the medical school chemistry, physiology and biology will be taught with reference to their bearing on medicine. But the premedical courses must be very different from those now pursued. The textbooks must be simpler and the

courses be made general, and then pupils must be compelled to master what they go over. There is far too much superficial teaching, too much smattering of knowledge at present. This leads to nothing and negatives the very object in view. Huxley appreciated this and usually preferred to teach the beginners himself, so as to be sure that they started with a proper comprehension of the fundamentals, and he left to colleagues and advanced students the subsequent conduct of the classes.

I should put biology and physiology or nature lessons among the earliest, since they go naturally with the health teaching and the hygiene by which all schooling should begin. Next would come physics, which will be attractive to the great majority of active-minded youngsters who are animated by a desire to do things, to make things, to understand electrical devices, automobiles, telephones, flying machines and the like; but I would see to it that they did not waste their time in trifling manual accomplishments but were enabled to understand the principles involved—the development and transformation of energy, latent heat, expansion and contraction of gases and gravitation. Chemistry would come later still. The college course would permit a resumption of the physics and chemistry, at least for medical students, while others would elect something more distinctly related to the careers they planned to embrace.

It will be impossible, I fear, to allow for more than two years of college for the intending student of medicine with five years of classroom and practical work still ahead of him. We want him to graduate while relatively young so that he may face the discouragements and trials of early practice and the long uphill climb to a financial competency while still possessed of the resilience, the buoyancy, the freshness, the enthusiasm, the high courage and the endurance of youth.

In enumerating these so-called scientific features of premedical education it is important to remember that a slightly greater familiarity with them prior to matriculating in medicine will not compensate for the dwarfing effect of a course restricted to them and unbalanced by studies of a complementary character, bearing always in mind that the object of premedical work is to develop, not to indoctrinate. Bain has well said that "the defect of the practical man is the limitation of his tests to his own sphere of working; he seldom learns to extend his method into other spheres." Now the sciences have a definite place in all education quite apart from the direct acquisition of useful facts. Observation, analysis of evidence, accuracy of statement and definition, the insistence on proof and demonstration are among the features that render scientific studies so useful in themselves; but are we not guilty of unpardonable onesidedness if we let only the physical part of the animal man occupy our pupil's attention in our enthusiasm for nature study?

It is many years since Mr. T. Davison wrote these significant words: "A man who has been trained to think upon one subject, or for one subject only, will never be a good judge in that one; whereas the enlargement of his circle gives him increased knowledge and power in a rapidly increasing ratio. So much do ideas act not as solitary units but by grouping and combination; and so clearly do all the things that fall within the proper province of the same faculty of the mind intertwine with and support each other. Judgment lives, as it were, by comparison and discrimination."

MISTAKES OF THE MIDDLE AGES

Education, and as a part of it medical education, in the Middle Ages, was distinctly scientific in character. The strong literary bias and the study of languages which became so marked in the seventeenth and eighteenth centuries did not develop until the Reformation and after. This is not commonly appreciated, but it is a fact. Mathematics, astronomy, chemistry—or, if you choose, astrology and alchemy—and even metaphysics, grammar and rhetoric, as they were taught, were not literary studies but distinctly along the lines of scientific training. True, much of the science of the Middle Ages is held in contempt today; but science and its standards are forever changing, and we cannot require of educators that they shall teach the unknown but only that they shall be abreast of their times.

Now, then, when we consider that for 400 years the premedical studies of Europe were grammar, rhetoric and dialectic, making the trivium; and music, arithmetic, astronomy and geometry, making the quadrivium (called collectively the seven liberal arts but really sciences not arts), and when we realize how absolutely sterile of results was the medical practice to which these premedical studies lead up, have we not some basis in history for questioning the extreme ground which some people take today in decrying the value of the humanities and insisting on purely technical preliminaries?

The Hon. A. J. Balfour, an Eton and Cambridge man, author of the Education Bill, one of the early champions of the higher education of women, an earnest advocate of technical training and of every form of practical instruction which might enable the British man of business to hold his own with foreign competitors, epitomized his thoughts on education in a speech delivered in 1899 at the Ley School. He admitted that a few years of Latin and Greek study do not suffice to accomplish the intended purpose of introducing the scholar to the beauties of ancient literature in the original, but he did insist on the importance of some form of literary education, nay, regarded this as indispensable. I think the opinion of so versatile a man as Balfour, once a successful opponent of Gladstone, leader of the House of Commons, an uncompromising yet locally popular secretary for Ireland and the representative in Parliament for the laboring men of East Manchester, is well worth heeding.

THE PLACE OF LATIN AND GREEK

There is no question that we must give up Greek, and I believe that Homer, Sophocles and other ancient authors will give more pleasure through the good translation of ripe scholars than from the perspiring school-boy's own efforts; but I consider that Latin, if ably taught, has a place in our schools. I do not offer in support of this study that it helps in acquiring scientific nomenclature, for that is as roundabout and difficult a way of doing the thing as Charles Lamb's roasting of a pig by burning down the place of his abode. I believe in three or four years of Latin because, along with other and indirect benefits, it is the easiest and surest way of teaching boys and girls to write and speak English correctly. I cannot take the time to marshal the arguments for this contention. Suffice it to say that the elasticity and simplicity of our construction, the practical lack of declension and conjugation inherent in our language, as well as many features of American life and thought, combine to

make for careless and inaccurate writing and speaking. Latin is not an elastic, plastic vehicle of thought like Greek, English or French, but an inflexible one cast in an iron mold. Properly taught to young people of reasonable intelligence, the translation of Latin into English prose can be made as fascinating as a picture puzzle, once those forms have been mastered which are essential features of the organic structure of a sentence and give the clue to its meaning. The study of Latin is thus a powerful though indirect method and, because indirect, the easiest way of teaching English grammar. It should be begun early when the necessary memorizing will be least laborious, and continued beyond the time when the pupil would be put at English grammar, a study of great difficulty and universally obnoxious. Grammar can be taught, as it were, objectively and solely through Latin, which illustrates the rules of construction in a way that our own language does not.

NEED FOR MORE ATTENTION TO ENGLISH

And if I am right in this idea, I think the place of Latin is secure in the schools because the one thing that we must insist on is that our boys and girls, whatever their purpose and destiny in life, shall speak and write English correctly. Nowhere in the world is there such need for the teaching of the national language, because nowhere is the school population made up of such a variety of elements, and in the case of many their mother tongue is not English. With no pretension to a mastery of style and no great sympathy with the exaggerated purist, I am nevertheless frequently surprised by the laxness, the inaccuracy, the atrocious barbarisms of the language of daily conversation and even of the public press, the magazines and the books printed in this country. Long observation as examiner on Navy boards has brought me to a realization of the sad fact that the young men of America can go through the high school and even obtain a baccalaureate degree, and yet be incapable of writing plain and simple English correctly. In this respect I submit that we are behind our parents and grandparents. What would have been an occasion for mortification and reproof fifty years ago is today a jest, and our young people are permitted a slovenliness of expression which surely reflects a decay of standards in more ways than one, encourages mental laziness and must have a depreciating effect on cerebration itself.

It is to deem knowledge of little value and to take a narrow, selfish and limited view of intellectual pursuits of any kind to deliberately despise and neglect language, the instrument by which we contribute to others and make them sharers of our work and its results. The crying need of premedical scholastic training in America, and of all school and college training at the present time, is for reform in the teaching of English. By this is not meant that boys and girls must write in learned or stilted or flowery style. Nothing of the kind. But accuracy and clarity of expression are valuable for all and essential for the professional man.

With all due respect to our capable, earnest and largely underpaid teachers, I must confess to a feeling that our public school courses are suffering from too large a variety of subjects to permit thoroughness. This is serious, because it is not so much what is taught that counts, as the permanence of the knowledge and the effect on the acquisitive mechanism produced by the way study is conducted. A superficial acquaintance, a smattering, a glossing over of a thing is pernicious in the extreme. Better no schooling than such

a process. For some of this mistaken policy and for the idea that school must be a place of entertainment and amusement rather than of hard, grinding work, I hold the parents responsible. Too many of them, while contributing little enough toward education in the home, resent the pressure of the teacher and yet desire their children to leave the high school with a large variety of showy accomplishments.

What is put before the student of any age must demand effort; must consider what he may be able to attain by expansion and not what he starts with. For true progress education must be calculated not from the standard of averages either of ideals or capacity but with a conception of a maximum achievement and ability. It must give opportunity to all according to their talents but provide always for the development of future leaders and thus insure a gradual heightening of standards and conceptions.

As we contemplate the anomalous developments of the past year are we not bound to pause and consider whether we have not long been radically wrong in our whole system of education? The constant clamor of recent years to make education practical, to make the school courses adequate training for the real business of life may have arisen from a mistaken conception of what the real business of life is. Have we been a little hasty in assuming that poetry and philosophy, and much of what the thoughtlessness of American youth regards as old fashioned and useless, are not beneficial enough to justify the time they take from the supposed practical studies? Have we unconsciously been encouraging courses of study that breed only money-makers and worshipers of mammon? When our sons have been prepared for business and have made their money, and when our daughters have married men of wealth, the one thing needful, will it not be too late for them to acquire a taste for the highest and best things money can procure; can we expect that a love of beauty in nature and art will spring into being, that our children will have proper standards of beauty if the seeds for such tastes and such love were not sown in youth?

The true object of government, whether it be that of a state or of a university, is to broaden the vision of countless individuals as to the meaning of life, and to increase their capacity to add to the sum of human happiness, not only by some positive accomplishment, but by the development of those keen sympathies which recognize all that is good in others while supplementing their weaknesses and retrieving their failures.

Finally, we have to recognize that in every field of endeavor the best men are largely self-taught. In the progress toward the predestined goal disclosed by the lifting mirage of the future, each chooses his own path and has his own peculiar problems to solve. As he advances further and further into the kingdom of truth he discards authority and flings off the fetters of tradition. It is only the mediocre man satisfied with a stereotyped career that can be fully equipped by any system of schooling for all the eventualities of his small and narrow life. What the school and college can do for all is to develop the capacity for true feeling and sound thinking. The medical profession must agitate in season and out of season for a high standard of physical capacity as a basis for intellectual achievement and for normal conduct. It must show its full appreciation of proper values by using every means to divert from its ranks those who have failed to demonstrate the possession of principle as well as of mental proficiency.

SYPHILITIC SCARS OF THE SPIRIT

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As one's experience with syphilis of the nervous system becomes more extensive, one becomes more deeply impressed with the fact that the literature of the subject lacks adequate statement or description of manifestations of such infection or of the results of it. Indeed, the mental scars of syphilis have had very scant attention from physicians. The various ways in which general paresis displays itself, the dementia of syphilitic encephalitis and the mental accompaniments of syphilitic endarteritis have been discussed and described, but the minor mental and emotional changes attending cerebral syphilis, and particularly those that are permanent sequelae of such disease that has gone on to recovery, have not been properly recorded. The reason for it is that they are so variable, they are so slight, and, perhaps I may add, so nonpathognomonic. However, they often succeed in thwarting the victim's career, reducing him from a man of promise or a man of accomplishment to a man of no importance or a dependent.

The clinical display of syphilis of the nervous system is very different today from what it was twenty-five years ago. Indeed, syphilis of the nervous system is today different from what it was ten years ago. This may be because the syphilitic virus is less virulent than it was in former times, but probably it is because the disease is diagnosed more frequently and earlier than it was and because it is treated properly and adequately. "Properly" means with mercury and arsphenamin, and "adequately" not only until all clinical manifestations have disappeared but until the Wassermann reaction of the serum has remained negative for a long time. It also means that the medical profession by and large has come to a deeper realization that potassium iodid is not an antisymphilitic agency in the true sense of the term, but a medicament that is of inestimable service in dissipating the products of cell proliferation due to syphilis.

Now that ten years have elapsed since I began the use of arsphenamin and mercury in the treatment of syphilis of the nervous system, I have had abundant opportunity to witness cessation of the progress of syphilitic nervous disease. In some instances, fortunately, this cessation has been accompanied with functional restoration to a degree that approximates normal. I have also encountered many cases in which the syphilitic disease was conquered by the combined resources of nature and of art, but in which the functional restoration was not complete. When such disease is of the intracranial contents, the symptoms are more conspicuous than when they are of the intraspinal contents. For instance, a tabes may be brought to a standstill, and the only evidence of the syphilitic scar is sexual impotence or slight impairment of vesical tonus. On the other hand, syphilitic meningo-encephalitis or syphilitic encephalitis may after recovery leave a scar which displays itself in altered behavior of the patient which is apparent only to those who come in intimate contact with him, in slight impairment of his intellectual and emotional capacity, which, although slight, is enough to shape his career, turning it from success to failure.

REPORT OF CASE

I have in mind the case of a young man of 26 who had made commendable progress in the mercantile world solely from his own effort and ability, and who was looked on by his friends as a man of promise. He left his house one morning of September, 1915, in apparently normal health. A half hour later he was brought home by a policeman and a stranger, who said they had found him lying in the street. He was not unconscious. He said he had been seized with sudden dizziness and had fallen. When he attempted to get up he was so giddy that he could neither preserve his station nor walk. For the next three days he complained in addition of nausea, and he frequently vomited. Gradually the dizziness disappeared, and at the end of two weeks he was able to sit up, and in four weeks he returned to his work. It was then noted that he was neither so alert nor so responsible as he formerly was, and he so failed to satisfy his employers that he was asked to absent himself from business and stay at home until he got well. From that time conspicuous mental symptoms developed. His family related that in addition to being drowsy and stupid, unresponsive and ambitionless, his behavior began to be very queer. He would drink while he was lying down, stuff his mouth full of food until he could not get any more in, attempt to swallow it without chewing it, urinate in his clothes, and throw his clothing or anything that he happened to pick up out of the window. In brief, his behavior was that of a man who had lost his mind. Unless he was specifically interrogated he made no complaint; then he would say that he felt "run-down" but that there was nothing else the matter with him.

The physician whose counsel was sought learned that he had married clandestinely six months before and that soon after that event his wife complained of a sore throat. When she went to a physician he diagnosed her disease as syphilis. Examination of the husband's blood revealed a ++++ Wassermann reaction, and he was put on mercurial treatment. He had received forty intramuscular injections when the symptoms that I relate developed. That is, he was under treatment when the first symptom indicative of meningeal involvement occurred. That symptom was paralysis of the facial nerve. Two months previous to the development of the symptoms noted, the right side of the face became immobile. It developed abruptly and involved all the branches of the nerve. After two or three weeks it gradually improved, but the remains of it were quite conspicuous when I first saw him. Six weeks after the attack of vertigo he made no complaint save that he was run-down. He admitted that he felt dizzy at times, but he had no headache, never saw double, and did not complain of stiff neck. He was inert, listless, unresponsive, neglectful of his appearance, and changed in manner and habit; but his conduct was no longer conspicuously bizarre. The only somatic signs of organic disorder of the nervous system were the residue of the facial paralysis, exaggeration of the tendon jerks, and an extensive, fanlike projection of all the toes when the sole of the foot was irritated. The Babinski great toe phenomenon was elicited on both sides, on the right more conspicuously and characteristically than on the left, and there was a right patellar and ankle clonus. His speech was somewhat indistinct and inebrious, and his answers were laconic; but there was nothing about his speech that suggested general paresis. His general appearance was that of a very ill man. He was emaciated and pale, and during the examination the skin was bathed in clammy perspiration. He weighed 98 pounds, his ordinary weight being 130. The laboratory tests were all corroborative of the diagnosis of basilar meningo-encephalitis, the spinal fluid containing about 150 cells. The following morning he was stuporous, and arousable with difficulty. When aroused he remained so only a moment, and then lapsed back into a condition as if he were overwhelmed by sleep. Indeed, his appearance and reaction were very much like a person in the beginning stupor of uremia or acidosis. Although he answered questions correctly, not infrequently he would stop in the middle of an answer and relapse into a stuporous state. He was able to get out of

bed unaided, to stand and to walk, but the latter was accomplished very insecurely. There was no trace of hemiplegia. The stuporous condition lasted about two weeks. At the end of that time he was confused as to time and place, and had practically no recollection of what had transpired from the time he entered the hospital. He gave a fairly comprehensive, sequential account of his illness up to that time. In reply to questions concerning his illness, he made the stereotyped reply, "Search me." However, he discussed the improvement that he had experienced, but without emotional accompaniment and without projection of plan or ambition. He read the papers and gave a fairly intelligent account of what he read, but he confined his attention to the comic sections and the sporting pages.

Gradually he began to display what might be called a triviality of conduct, a lack of responsibility, with no indication of gratitude for his recovery, no plans for the future, and no expression of desire to get home or to take up the activities of life again. After he had been under treatment for three weeks, during which time he had had two intravenous and two intraspinal injections of arsphenamin and daily mercurial inunctions, the Wassermann reactions of both the serum and the cerebrospinal fluid became negative, and the cells of the latter dropped to 11 per cubic millimeter. The only abnormality that it disclosed was slight globulin excess.

Gradually the patient's mental condition improved. He was no longer incontinent of urine or feces. He became more cognizant and observing of his surroundings; he took a keener interest in reading and diversion; he manifested more solicitude for the visits of his family, and displayed greater pleasure at such contact. His orientation of time and place became quite normal, his memory gradually improved, and his capacity for attention showed a greater awareness and retentiveness. He was neither depressed nor exalted, but displayed a general feeling tone that was not quite normal, though not particularly abnormal.

When he was taken into problems like mental arithmetic, in which he was formerly very alert, he became readily confused. His chief behavioristic phenomenon was untidiness of his person and of his room, which was very foreign to him when he was well, and unconcern for his future. He was then given a series of intravenous injections of arsphenamin and was discharged from the hospital seven weeks after his entrance. During that time he had gained 20 pounds. He went to a sanatorium, where he continued to receive antisypilitic treatment, with both arsphenamin and mercury, for another six weeks.

Four months after he had come under observation he returned home, and he received no further treatment for three months. At the end of that time the serum Wassermann reaction was weakly positive, but the cerebrospinal fluid remained negative. His physician put him under treatment again and continued treatment for about a year. Altogether he received about thirty intravenous arsphenamin treatments, four intraspinal and scores of inunctions and injections of mercury.

LATER HISTORY

I recently saw him again. More than three years had elapsed since he left the hospital. He related that a few weeks after he returned home, that is, six months after the beginning of the illness that is chronicled above, he obtained employment with a firm that sold automobile accessories and stayed with it two or three months, but as he did not get on very well he left and went with an automobile firm. This firm did not value his services, and after a short time he was again looking for employment. He secured a position with another mercantile firm, and remained with it six or seven months, but not making any progress he changed again and went with the General Electric Company, where he remained two years, during which time he never received an advance of wages. At a time when \$50 a week was considered an acceptable wage for the average worker, he was earning only \$21. To make matters worse, they gave him less acceptable work. This he considered an affront, and he decided to leave them; then he secured a job with another

company, but to little financial advantage. He made no effort to return to the work in which he was trained, namely, the charge of a department in a large store. On being asked why he did not do so he replied that he was convinced he could not do the work satisfactorily, not because he was not well or because he had any difficulty in dealing with people, but, as he expressed it, "I can't think readily of the things to say that would facilitate the work that I would have to do." In other words, he realized that he had become a little indifferent, lacking in the mental elaboration that should be externalized in speech, inclined to be laconic in his answers, and silent. He thought that there were some people in the organization in which he had worked that might be interested in him and that they might give him an opportunity should he solicit it, but he had not been able to bring himself to do it.

He had no particular complaint, and he admitted that he felt well. Nevertheless, he had keen insight of his condition, as illustrated by his remarks about his previous position and by a realization that his wife had abandoned him because he was not able to provide for her. He also realized that his best efforts were not being translated into considerable money. His mother related that he was a little indifferent and that he had few social and no civic interests. His diversions were very simple and childish. Practically the only thing he cared about doing was to go to moving-pictures. He had not kept up with his friends, and he manifested very little inclination for social contact. It was not so much that he did not participate in ordinary pleasure and relaxation as that he had no initiative to plan them or to prompt them. He was not lacking in certain kinds of energy, for when he was out of a position, whether from his own volition or the desires of others, he set resolutely to work to find another; but the work he accepted was not consistent with his education or with his position in life, nor did he attempt to utilize former experience to help him to any position. On examination, the most striking defect was on the affective side of his consciousness. Memory and attention were but slightly impaired. He recalled the incidents of his illness, the room that he occupied in the hospital, where he went after leaving the hospital and how long he remained there, and a great many incidents of his illness; but when he attempted to particularize them, he displayed slight amnesia. On effort he had very commendable capacity for attention. For instance, when the paragraph of a newspaper was read to him, although he did not seem to be paying keen attention, nevertheless he repeated the substance of it without particular hiatus.

But his unfortunate experience had congealed him emotionally. Nothing appealed to him very much save the satisfaction of physical needs. His wife had forsaken him, the career in which he had made a success was closed to him, his mother manifested concern and despair, but they did not seem to touch him. He treated the situation and the prospective sterility of life for him as if they were matters of no importance. To all outward appearance and in casual contact he was quite normal. Spiritually, however, he was but an image formed in the likeness of his previous self.

Physical examination revealed no evidences of organic disorder of the central nervous system. The pupils, tendon jerks, the muscle tonus and the capacity for coordination were quite normal. There was no tremor, no disorder of speech, no disturbance of sense or sensibility. The only physical abnormality was a sluggish vascular system: bradycardia and poor peripheral circulation. Although he did not give the impression of vigor, he had regained his weight; and his appearance was that of a man in good health. His Wassermann reactions had been persistently negative for two years. His soul bore the syphilitic scar, and it will continue to bear it until he yields the spirit. It would be difficult to find a more instructive example of the curability of syphilis of the nervous system in the ordinary sense of the term. But what a miscarriage of therapeutic justice, what a mockery of our studied effort. Though cured, he is but the simulacrum of his former self.

COMMENT

The experience is instructive, in that the encroachment of the central nervous system by the spirochete occurred while the patient was under antisyphilitic treatment by mercury; and more instructive is the experience that the symptoms yielded so promptly to intensive arsphenamin and mercury treatment. Although it is impossible to say how long the infection had been in existence when the meningeal symptoms displayed themselves, it is probable that it was more than a year. Had it not been that his wife showed a florid syphilis, there would have been no information concerning his affection.

That the burden of the pathologic process was borne by the meninges of the base of the brain is evidenced by the facial paralysis and by the vertigo; but that there was also inflammation of the cortical meninges is indicated by the stupor, the apathy, the disturbed cerebration and the sequelae.

The information furnished by examination of the cerebrospinal fluid tended to corroborate the diagnosis of predominant meningeal involvement. It is worthy of note that at no time did the patient complain of headache; nor were symptoms that are given much weight as important diagnostic accompaniments of basilar meningitis, such as nuchal rigidity, basilar and cervical tenderness and diplopia, present.

No satisfactory explanation can be given of the Babinski great toe phenomenon elicited in both feet during the first few days of his profound cerebral illness. The only explanation that can be given is that there was a meningeal involvement over the cortical motor areas. One would expect that in such a condition there would be evidences of motor irritation or of motor inhibition; but as these were lacking, it must be assumed that an associate edematous condition of the superficial cortex prevented manifestations of the one or the other. Indeed, the clinical picture which the patient presented at the height of his disease was not at all unlike that of certain cases of wet brain of alcoholism or of influenzal encephalitis, and it may legitimately be assumed that the dislocation of the patient's mental components was caused by a pathologic condition made up of inflammation and edema not unlike that which occurs particularly in the latter disease.

The chief object in calling attention to this variety of cerebral syphilis is to emphasize the fact that although the infection is thwarted and the patient regains what seems to be his health, he is left with a scar of his mind and his emotions which permanently cripples him to a certain degree. It is easy to measure this degree by psychometric test; but the most telling way of expressing it is to say that it has thrown him from the social, civic, marital, financial level that he had attained, which was a commendable one, to a much lower one at which he can barely support himself and can make no contribution to the welfare, the interest or the support of others. Had he been reduced another peg he might have become a hobo, a wanderer or a charge on his family or the community.

Such experiences as these teach us that syphilis of the nervous system is a curable disease; but the lesson that we learn from it is that the earlier the treatment is instituted the greater is the victim's chance of complete functional recovery.

37 West Fifty-Fourth Street.

ARSPHENAMIN REACTIONS

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In large hospital clinics where syphilis is treated with various arsphenamin preparations, reactions occur more or less frequently, depending on the care taken in preparing solutions, the purity of contents, the elapsed time between the making of the solution and its administration to the patient, the amount of arsphenamin given, operative technic and skill, and factors within the patient. While a given brand of arsphenamin might, through some circumstance, very rarely prove toxic, the precautions taken to make such possibilities remote (chemical, animal and clinical controls) usually mean that arsphenamin has to be discharged for want of evidence. Arsphenamin might have been guilty of causing some of the reactions on which this paper is based, but this could not be proved.

When directions are carefully followed in preparing the arsphenamin solution, and in administering it to the patient, if a reaction follows, then the cause of the reaction is attributable either to the brand of arsphenamin used or to the patient. Printed directions accompany each ampule of arsphenamin, whether it be diarsenol, arsenobenzol, salvarsan or arsaminol, and are specific and easy to understand; and it is laxness in following these directions that accounts for the greater number of reactions to treatment. When a trained and careful person prepares the solutions of arsphenamin, reactions will seldom occur in hospital clinics or in private practice.

NECESSARY PRECAUTIONS

One should note any departure from the normal lemon-yellow color of the brand of arsphenamin being used, and then immerse the ampule in 95 per cent. alcohol for fifteen minutes to detect obscure cracks. Cracked ampules or ampules that contain discolored arsphenamin are to be rejected, the substance having become oxidized. It is a good plan to mark down the serial numbers of the ampules used in order to check up with the manufacturer in case the arsphenamin is suspected of being the cause of a reaction. One is further directed to prepare individual solutions, and when this is not practical, not to prepare more solution than can be disposed of within half an hour. Using the syringe-container method, and allowing six minutes for each 0.5 gm. of arsphenamin in solution, limits the number of ampules that may be used at one time to five. The sooner the solution is disposed of, the less danger of oxidation.

Using the directed technic for one brand of arsphenamin while preparing the solution of another will, in some cases, cause reactions. Salvarsan (Metz) calls for freshly distilled water of not more than room temperature; diarsenol requires warm, freshly distilled water; and arsenobenzol is to be dissolved in boiling hot, freshly distilled water. Salvarsan becomes oxidized when dissolved in hot water. The directions call for freshly distilled water or physiologic sodium chlorid solution, prepared from chemically pure sodium chlorid—not from table salt. It is directed that normal sodium hydroxid (4 per cent.) or 15 per cent. solution be used to neutralize and alkalize arsphenamin in solu-

tion. Faulty preparation with impure or altered sodium hydroxid, or contaminated distilled water, may cause reactions.

Neutralizing arsphenamin, which is a dihydrochlorid salt, requires a definite amount of sodium hydroxid to render it slightly alkaline and suitable for use. A large percentage of reactions resulting when technic is not strictly followed are due to hypo-alkalization, while hyperalkaline solutions, due to faulty measuring of sodium hydroxid solution, causes reactions at times. A graduated pipet or buret is recommended to be used, the certainty being a normal-sized drop and accurate measure. Arsphenamin is precipitated as a basic salt by sodium hydroxid; it requires a definite amount to redissolve the precipitate, changing the basic salt to a monosodium salt, the solution being just alkaline to litmus paper. On further addition of a definite amount of sodium hydroxid, a disodium salt is formed which is completely soluble in water. The basic precipitate and monosodium salt will cause reactions, the disodium salt in solution, properly diluted and filtered, being suitable for use.

All manufacturers agree that solutions should be of room temperature. Injecting too cold solutions into the circulation will induce chill reactions. Too rapid giving of the solution, particularly in high concentration, will cause reactions in some instances. One is advised not to give more than 0.1 gm. of drug (30 c.c. of solution) in two minutes; the gravity method is the one advised; the rate of flow is controlled by the size of the needle (No. 18 or 20 B. & S. gage) and the height of the column of fluid. The syringe-container method is favored by many operators, and while not as "fool proof" as the gravity method, an expert can handle difficult work with greater precision.

Giving too large a dose of arsphenamin at the beginning of a course of treatment accounts for some reactions. Lack of preliminary preparation for treatment—a laxative the night before, and a light breakfast four or five hours before operation—is sometimes a cause. Every patient should be given a careful physical examination to determine organic or functional impairments, as findings may limit or contraindicate arsphenamin treatment. When two or more reactions occur from a multiple ampule solution, in the majority of instances the fault will be found in the technic of preparing the solution, and the usual cause will probably be hypo-alkalinity.

FACTORS ATTRIBUTABLE TO THE PATIENT

Both arsphenamin and the technic in preparing its solution having been excluded, factors attributable to the patient are to be considered. Tissue susceptibility to arsphenamin medication include allergic idiosyncrasy, an inherited dominant susceptibility to arsphenamin medication; anaphylaxis, protoplasmic sensitization from repeated doses; blood synthesis reactions, in which arsphenamin becomes altered or precipitated from causes not understood, or ascribed to excess of carbon dioxid in the blood, or faultily prepared arsphenamin solutions; and the nitritoid reaction, ascribed to the action of arsphenamin in destroying spirochetes and liberating large quantities of bacterial protein to which the tissues have become sensitized. The Herxheimer reaction is attributed to the stimulating activity of nonsterilizing doses of arsphenamin.

Reaction symptoms occur singly or in syndromes, while the injection is being given, soon after the patient

leaves the table, or a few hours or days later. The most common type of table reaction is the vasomotor syndrome, usually manifesting dermal capillary flushing, dyspnea, coughing, nausea and subcutaneous edema, two or more symptoms being present. The vasomotor type of reaction has been ascribed by Pardo¹ and others to the vasodilating action of arsphenamin. Insufficient alkalization of arsphenamin solutions account for a large number of this type of reaction. Hirano² claims that arsphenamin anaphylactoid symptoms are due in many cases to a deficient epinephrin content in the blood resulting from sudden consumption after intravenous injection of arsphenamin, and from an inhibition of epinephrin secretion by the suprarenals. When repeated reactions of this type occur, preceded by a number of arsphenamin treatments without reaction, epinephrin deficiency as a possible factor causing the reaction is to be considered. Preinjection of epinephrin tends to prevent this reaction, as well as relieve the symptoms when it occurs.

Another type of reaction occurring infrequently, but liable to occur while the patient is on the table, is the "spine pain," characterized by the patient's complaining of stabbing pains in the lumbosacral region. The pain is usually intense; it is in most cases accompanied by vasomotor symptoms, and might be the result of vasomotor influence on various viscera, and registering on respective nerve centers in the spinal cord.

According to Kolmer and Yagle,³ arsphenamin causes hemolysis, particularly when injected in concentrated solution, but is not so likely to do so when in weaker solution or when isotonic salt solution is used instead of distilled water. Hemolytic action of arsphenamin solutions is said to be increased by hyperalkalization. Dilute solutions of neo-arsphenamin (0.9 gm. in 90 c.c. or more of water) are claimed to cause hemolysis, while concentrated solutions (0.9 gm. in 30 c.c. or less of water) are not hemolytic.

FUNCTIONAL AND ORGANIC IMPAIRMENTS

Reactions other than those due to anaphylaxis and blood synthesis arise from functional and organic impairments causing certain viscera to be more susceptible to arsphenamin medication. Neurologic reactions present the hysterical type, usually not attributable to arsphenamin but to psychophysical upsets, before or after treatment. Syncope, headache, vertigo, neuritis pseudo-epilepsy, and Herxheimer manifestations affecting special nerve centers occasionally arise, owing either to sensitization, vasomotor action, or activating syphilitic lesions. Reflex enuresis has been observed in two cases, immediately following arsphenamin treatment.

Aside from gastro-intestinal manifestations in anaphylactic reactions, there are symptoms that patients complain of at times, such as nausea, diarrhea, colic, anorexia and indigestion. They are not severe enough to be classed as true reactions, but may be termed incidents, being due, in most cases, to functional or organic impairments.

Dermal reactions sometimes occur, and appear to be due to too large doses of arsphenamin, dominant

1. Pardo Castello, V.: *Rev. de med. y cirug. de la Habana* 24:13 (July 10) 1919.

2. Hirano, N.: *Nature of Anaphylactoid Symptoms Caused by Intravenous Injection of Arsphenamin*, *Japan Med. World*, June 22, 1919.

3. Kolmer, J. A., and Yagle, Elizabeth M.: *Hemolytic Activity of Solutions of Arsphenamin and Neo-Arsphenamin*, *J. A. M. A.* 74:643 (March 6) 1920.

susceptibility, anaphylaxis, faulty elimination, blood synthesis, and the administering of toxic arsphenamin solutions. The eruptions appearing may be scarlatinal, maculopapular, or may simulate dermatoses, as pityriasis rosea.

"Arsphenamin jaundice" is a coined term applied to jaundice manifested by patients who have received arsphenamin medication. There are two forms, corresponding to the catarrhal or hepatogenous, and the toxic or hematogenous, the former being due to obstructive elimination arising from such causes as cholangitis or hepatitis, which may or may not be due to arsphenamin treatment. The hematogenous form is probably due to toxic products of arsphenamin blood synthesis, toxic arsphenamin solutions, sensitized hepatic tissue, or overworked hepatic function, resulting in low-grade or toxic degeneration. Chronic hepatitis may be a contributory cause.

Jaundice following arsphenamin treatment usually occurs after a number of doses of arsphenamin have been given, and it has been observed that patients that show an exhausted or diminished tolerance, manifested by various reactions, are prone to have jaundice at a later period if arsphenamin treatment is carried on without a rest from treatment of one or more weeks. The usual case of arsphenamin jaundice clears up in from two to four weeks; the severe, toxic type of jaundice, while rare, is likely to be fatal.

Reactions to arsphenamin treatment are a warning signal that there is a cause to be found, and that a review of the patient's history, physical condition, the brand of arsphenamin used, and the technic of preparing the solution and administering it to the patient should be undertaken. It sometimes happens that treatment has been too prolonged, in persistently positive cases, and the tolerance to arsphenamin, and also to mercury, has become exhausted. In such cases a rest from treatment of one or two months does much to rejuvenate the patient.

CLASSIFICATION OF UNTOWARD INCIDENTS AND REACTIONS

Sequelae arising from arsphenamin medication may be thus classified: the incidents, slight untoward symptoms occurring in patients with normal tolerance to arsphenamin, such as vertigo, palpitation, disturbances of taste and smell, or slight nausea; the reactions, usually occurring in syndromes, and causing discomfort and sometimes incapacity, which may be ascribed to allergic or acquired susceptibility to arsphenamin, functional or organic complications, or toxic arsphenamin solutions; the grave reactions (sometimes fatalities), such as dermatitis exfoliativa, toxic jaundice, hemorrhagic encephalitis, and gangrene; the accidents, such as thrombosis, phlebitis, and infiltrations about a vein.

With careful observance of all precautions in the administering of a properly prepared arsphenamin solution to a risk-free patient, if treatment is not too energetic, reactions may be reduced to a minimum, both in private practice and hospital clinics. Each patient, during a course of treatment, should be carefully observed as to individual susceptibility and tolerance for arsphenamin. Standard treatment may serve as a guide for the average case, but one must individualize to prevent reactions and best treat the patient.

1647 Beacon Street.

SUMMARY OF BUREAU OF CHEMISTRY INVESTIGATIONS OF POISONING DUE TO RIPE OLIVES*

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In the study of poisoning due to ripe olives, a large amount of material representing this industry and its commercial product has been handled by the Microbiological Laboratory of the Bureau of Chemistry. Every phase of olive handling has been considered. The details of this work will be published elsewhere. A summary of the general findings may be of wider interest than the purely bacteriologic report. In the course of this investigation, 2,161 commercial containers have been examined. Of these containers, 560 were glass and 1,601 were tin. Cultures were made from the first 500 containers opened by us, including both tin and glass. Satisfactory odor and appearance were so uniformly accompanied by sterility that culture was subsequently limited to material which did not pass physical examination. In all, 618 containers were examined bacteriologically, and from these samples many different organisms were isolated, among them *Bacillus botulinus* in the following cases:

ISOLATION OF BACILLUS BOTULINUS

1. *Bacillus botulinus* was isolated from seven glass jars of the same batch that caused the deaths of twelve persons in Ohio and Michigan. The actual olives involved in these two poisoning cases were not seen. Seven jars out of forty-six of the batch examined were shown to contain a highly virulent toxin. The organisms isolated from these jars when tested against antisera proved to be Type A of Burke¹ and Dickson² which type is more commonly found in the Pacific Coast states. Type B, which is more common in the Eastern states and apparently also in Europe, has not been reported thus far in olives, although reported by Dickson as occasionally found in California.

2. The organism was found in bits of dried pimiento stuffing adherent to the inside of an empty glass bottle received from Kalispell, Mont. Stuffed olives from this bottle appear to have caused the death of five persons. Here again Type A was found.

3. *Bacillus botulinus* (Type A) was isolated from the interior of one of the olives from the glass jar connected with the New York poisoning cases.

4. The organism was isolated from the interior of an olive from the original glass bottle concerned in the deaths of seven persons at Memphis, Tenn. It was similarly isolated from two more olives which had been thrown into the yard and later recovered. All of these organisms were Type A. These olives were

* From the Microbiological Laboratory, Bureau of Chemistry, United States Department of Agriculture.

* The authors are indebted to Dr. L. T. Giltner of the Pathological Division of the Bureau of Animal Industry, U. S. D. A., for constant cooperation from the pathologic side in determining the toxicity of cultures and in typing them.

1. Burke, G. S.: Notes on *Bacillus Botulinus*, J. Bacteriol. 4:555 (Sept.) 1919.

2. Dickson, E. C., and Howitt, Beatrice M.: Botulism: Preliminary Report of a Study of the Antitoxin of *Bacillus Botulinus*, J. A. M. A. 74:718 (March 13) 1920.

part of a batch closely related to that concerned in the Ohio and Michigan cases.

5. Olive relish which recently caused the death of one person in Richmond, Calif., was examined by Dr. Fellers of this bureau and found to contain toxin capable of producing the death of experimental animals. Preliminary cultural examination indicates the presence of *Bacillus botulinus*. This sample was in tin.

ODOR OF OLIVES

From the standpoint of the safety of the consumer, it is important to know that in all of the material infected with *Bacillus botulinus* examined by us the odor detected when the container was opened, or the odor of the olives when secured separately from the original container, was distinctly offensive. The offensiveness of the olives, if washed, iced or served in connection with highly flavored foods may be reduced to a minimum. It is recorded, however, that some of the consumers in the cases mentioned above detected the spoiled condition and refused to eat them. Others less acquainted with ripe olives or less keen in their sense of smell consumed the product. Some of them later recorded their objection to the fruit before they died. In only one case (New York) was there any expressed liking for the product.

The real difficulty seems to lie in a widespread lack of acquaintance with a normal odor of ripe olives. Many samples showing the whole range of quality from the highest grade to manifestly putrid material were examined and compared. Tabulation of the physical examination at the time of opening checked absolutely with bacteriologic results in the selection of unsound material. It is impossible to select toxin-containing samples from other spoiled samples without animal experiments. These results, therefore, emphasize the necessity of careful examination at the time of opening the container, and of the destruction of any suspected material.

STERILIZATION

Bacteriologic examination of the canned samples revealed the presence of many species of organisms other than *Bacillus botulinus*. Among these organisms were members of the colon group and many non-sporulating aerobes. Both our investigations of the time and temperature used in processing and the presence of these nonsporulating organisms in the containers indicate that the amount of heat applied was entirely inadequate for sterilization. Resistant spore-forming organisms when present, as they occasionally proved to be, withstand very much higher temperatures than were used in the majority of plants visited.

The practice of shipping olives and holding them at the factory either in water or weak brine in barrels or tanks appears to be fairly common in the industry. The salt content observed was never high enough to prevent the activity of micro-organisms. The fermentation of the tanks or barrels examined varied from the acid type without gas production to that of putrefactive decomposition with abundant gas. The odor given off from some of the barrels was very offensive. During this holding period, a barrel or tank of olives infected with any particular organism becomes contaminated throughout by its multiplication. The olives from such an original barrel or tank are graded first into several sizes, and then graded again according to color. One such originally infected container, therefore, may contribute infected olives to several of the final lots so packed. Sterilization of food carrying

such extensive contamination with all sorts of organisms is very difficult.

There is another aspect to this fermentation aside from its possibilities of producing a poisonous product. The odor of putrefaction already noted is generally recognized as evidence of a product at least partially decomposed. Decency demands that products so decomposed as to be offensive be eliminated from human food. Such products should be destroyed rather than cleaned up, canned and sterilized.

CONCLUSIONS

1. More efficient sterilization should be employed in order to prevent further outbreaks of botulism.
2. Shipping or holding in brine solutions, if tolerated at all, should be so modified as to exclude any undesirable fermentations.
3. Olives from the time of picking until processed in the final container should be handled with the same degree of care and cleanliness as any other perishable food product.

DENTAL SURGERY AND ORGANIC HEART DISEASE

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In discussing this subject I do not intend to detract in the least from the brilliant results attained by dental surgery in the treatment of disease caused by focal infection about the teeth; rather, I mean to call attention to the very real danger which at times and under special conditions exists when radical treatment by extraction is attempted. Special reference is made to organic disease of the heart.

In a given case in which focal infection does exist about the teeth, together with organic cardiac disease, it is fair to assume, other causes being excluded, that the condition is caused or aggravated by the infection, and treatment for its removal should be instituted; but before this is done, certain results are to be anticipated. Are we going to stir up a latent infection in the heart and create an acute condition which may endanger the patient's life? This is possible. It has come to be accepted as proof of the accuracy of the diagnosis and the necessity of the operation that if the condition for which relief is sought by extraction of teeth is temporarily aggravated after the operation, the cause of the trouble has been determined and the procedure was justified. The deduction is logical. It is common experience to note that an arthritis or neuritis becomes acutely painful after the infection which causes it is, so to speak, stirred up. It is called a reaction, and is seldom thought of in connection with cardiac disease; but when this reaction takes place and affects a vital organ, such as the heart, results may be serious. Here the diagnostician in internal medicine should take a stand and be the judge when it comes to determining methods of procedure; and dental surgery will have to develop a technic which will reduce this danger to a minimum, as it is positively to be reckoned with.

Drainage of the infected area, such as an apical abscess, is the result which is desired; but this result, at times, and under certain conditions, is precisely what is not obtained, unless proper technic and after-treatment are employed.

After extraction, if the tooth socket is examined at any time during the first three or four days, it is found

to be filled with a firm clot of blood, which precludes drainage and affords an ideal soil for the rapid growth of bacteria; and the traumatism to the structures around the tooth greatly increases the opportunity for absorption. It is under such conditions that there is a rapid rise of temperature, increased pulse rate, and an acute attack or exacerbation of a chronic trouble, as exemplified by the history of the subjoined cases.

REPORT OF CASES

CASE 1.—A thin, anemic woman, aged 42, came seeking relief for attacks of vertigo and general weakness, complaining also of having precordial pain and irregular heart action. Examination of the heart revealed a systolic mitral murmur, slight dilatation and an intermittent action, with nothing in the general history to account for the condition. The throat was negative. The teeth showed evidence of trouble. A hard swelling was found on the alveolar process of the jaw in the region of an impacted and partially unerupted third lower left-molar. Pus was oozing out of a small opening on the top. The patient said that this condition had been present for five or six years. Roentgenograms of all the teeth revealed abscesses of the third lower left molar and second bicuspid. Extraction was advised, and the teeth were removed at the hospital the following day by a very competent man. Twelve hours later the temperature had risen to 102.5, and the pulse was 110; thirty-six hours later the temperature was 104, and the pulse 130. The tooth sockets were cleaned out and irrigated with an antiseptic solution, and in three hours the temperature had dropped to 100 and the pulse to 110. Twenty-four hours later another rise of temperature and pulse rate took place. Irrigation of the tooth sockets was again resorted to, with the same results. Thereafter irrigation and cleansing by antiseptic solutions prevented a further rise in temperature and increase in pulse rate.

On the fifth day after extraction, the heart trouble had become worse, the pulse rate remained high, the intermittent heart action was more pronounced, the murmur was more audible and the patient was very weak, being obliged to remain in bed for two weeks under treatment directed to the condition of her heart.

CASE 2.—A woman, aged 64, had an exploratory laparotomy performed for suspected recurrent carcinoma in the pelvis, hysterectomy having been performed three years previously for cancer of the uterus. Examination before operation disclosed hypertrophy of the heart, the systolic blood pressure being 140, and the diastolic, 110. A slight systolic murmur was present at the apex. The patient remained in bed in the hospital for a week before the operation. Laparotomy was performed, but it amounted to nothing more than an exploration, and I do not think it could be held responsible for the results, as the patient recovered from the short ether anesthetic and operation in a few days. On the eighth day after the operation she requested to have two lower second bicuspid extracted, saying that they were sore and had been giving her trouble for a long time. Extraction was done under local anesthesia. Twenty-four hours after extraction of the teeth, the temperature rose to 101, and the pulse to 125. Local treatment, as in the previous case, improved the symptoms somewhat. During the next twenty-four hours the pulse became weaker and more irregular, but the temperature did not rise above 100. The mitral murmur became more audible, the systolic blood pressure began to fall, the pulse rate and general weakness increased, and the patient died of dilatation of the heart at the end of the third day.

COMMENT

Other and as typical cases can be reviewed from private practice and from the records of St. Agnes Hospital, where severe cardiac actions have occurred after the extraction of infected teeth.

It is not to be presumed that all patients with cardiac diseases are necessarily poor risks for extraction; but when the focus of infection to be eradicated is the probable cause of the heart trouble, the possibility of

making matters worse must be borne in mind. No doubt valvular disease in well compensated hearts, especially in young persons, cannot be considered dangerous; but in older persons in whom the myocardium is degenerated, accompanied by valvular disease, when the energy index is low and cardiac decompensation is imminent, such hearts show that they are beginning to break under their load, and in such cases it behooves us to make haste slowly.

ACUTE MIDDLE EAR INFECTIONS
IN CHILDREN

FROM THE STANDPOINT OF THE PEDIATRICIAN *

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NEW YORK

Among infants and children, acute ear infections take rank in number and importance only second to respiratory and gastro-intestinal disturbances. They are a common occurrence in affections of the upper respiratory tract, and frequently prove formidable complications in scarlet fever and measles. In private practice among children, hardly a day passes during the winter season without one's coming across an acute ear inflammation, and in hospital practice it is not an uncommon thing to have to incise two or three drums daily in the infants' wards during the season of respiratory infections. Being acquainted with this susceptibility to ear infections, the pediatrician is always on the lookout for ear inflammations, and consequently is likely to see their development from an earlier stage than does the otologist. Routine examination will frequently reveal the ear inflammation before the baby has shown any manifestations referable to the ear by the mother or the nurse.

As to symptoms, complaint of pain in the ear, if present, is of course important; but young infants do not well localize their pains, and frequently a baby will cry and put his hand on the abdomen, and complain of pain in the stomach, when examination will reveal a bulging drum as the cause of the pain. Rolling the head or putting the hand to the ear are suggestive, but often they have no significance. Absence of any complaint of pain or even of general restlessness is no proof that the ear is not inflamed. Temperature elevation is nearly always present, but this also, like pain, may be absent even when the drum is bulging. Tenderness in front of the ear is a very reliable sign, but this too is occasionally lacking even when there is high temperature and bulging of the drum. Moreover, many children deny tenderness, in spite of the involuntary wincing of the mouth. Stiffness of the neck is occasionally present even without enlarged lymph nodes under the mastoid muscle and without mastoiditis. To sum up the indications of middle ear disease, a bulging drum is the only diagnostic sign. On examination, retraction of the drum and in addition some redness is frequently the first sign of inflammation in the rhinopharynx and often confirms a suspicion of acute rhinitis as cause for fever up to 102 or 103 F. when there is as yet no running or stuffiness of the nose. The next sign of ear involvement is some red-

* Read before the Section of Otology, New York Academy of Medicine, Feb. 13, 1920.

ness along the malleus, and the next, some fulness and redness of Shrapnell's membrane. These signs are present so commonly with head colds in children, and subside so readily, that this small degree of otitis can be considered a very common accompaniment of acute rhinitis.

The next signs that appear mean an otitis media, namely, redness and bulging of the drum membrane, first behind and later in front. Occasionally the drum looks only gray, owing to thickened epithelium, which must be removed to get a view of the drum itself. The retraction meanwhile increases, and the appearance of the drum is that of a small red ring or doughnut. When accompanied by a high temperature, these signs are sufficient justification for incision of the drum; but by far the larger number of such cases will subside in a day or so if the nostrils are treated by a weak epinephrin solution, and hot irrigations of the ear are employed. I find that most otologists incise such drums, and the practice is undoubtedly a good one, for such an ear will frequently return to normal more quickly after being incised than if not opened. I have seen this in many cases when both ears became inflamed successively and in which the first one was incised. I appreciate fully the dangers of fulminating mastoid, and am aware that the knowledge and experience of such cases is the reason why the otologist practically always makes an incision when he sees a bulging drum. And yet the making of an open wound with the dangers of additional infection from the outside has seemed to me a procedure to be avoided, if possible without risk to the child. It is only when the temperature is high, the pain acute and the bulging marked that I have deemed it best to incise at once. The infrequency of mastoid complications and the very satisfactory results of conservative treatment are my justification for awaiting further indications than those of the day of onset. If the tenderness elicited by pressure on the tragus increases, if there is tenderness of the tip of the mastoid, and if the temperature remains high after twenty-four hours and the bulging persists, incision is necessary.

The paracentesis should be done under anesthesia, preferably chloroform, though an exception may be made to this rule if the patient is an infant and only one drum is to be incised. The incision should be a J or U shape, and should be carried well upward. Irrigation with hot boric acid solutions immediately after incision is of advantage, and it is always satisfactory to hear the child gulp or swallow during this irrigation, as this shows a free opening through the drum, with passage of the irrigation fluid into the throat. The temperature, the pain, the tenderness in front of the tragus, and the tenderness of the tip of the mastoid—if that has been present—should all subside after two or three days. It is quite common, however, for the temperature to remain elevated until the discharge becomes purulent. This may be two or three days after the incision.

Mastoid involvement has been, in my experience, a very infrequent complication of middle ear disease; among infants in hospital practice not more than 1 per cent. and in private practice not more than 2 per cent. There is, however, great variation in different years. For several years I saw not a single case in private practice, the next year six or eight, and then a number of years only one or two cases. The rarity of mastoid complications in infants' wards of hospitals is worthy

of comment, not more than three or four a year occurring among hundreds of cases of acute otitis.

During the month of January, 1920, there were in the children's wards of Bellevue Hospital 248 admissions; eleven patients had primary otitis media and thirty-one had otitis secondary to other conditions, mostly of the respiratory tract. There were among these respiratory conditions seven cases of bronchopneumonia, six of bronchitis, four of acute pharyngitis and two of lobar pneumonia. During the year 1919 there were only two cases of mastoiditis among 400 cases of otitis media. It is a common observation that in cases of bronchitis or bronchopneumonia the complicating otitis media occurs usually from four to seven days after the onset of the primary disease. Often in cases of bronchitis the ear will become involved after the temperature of the acute bronchitis has subsided to normal. In these cases it is probable that the continued coughing of the early convalescent stage causes an infection of the eustachian tubes.

The otitis that complicates measles is far more likely to result in mastoiditis than we have been taught to believe, and is almost as serious as the otitis complicating scarlet fever.

The chief reliable sign of mastoid inflammation is sagging of the posterior superior quadrant of the drum with the adjacent wall of the canal. Tenderness above the tip on a line directly behind the meatus at the site of the mastoid emissary vein, and tenderness of the upper part of the mastoid in the region of the zygoma are very important if they can be elicited. Other suggestive signs are a profuse discharge or the sudden cessation of a profuse discharge. In little babies, and occasionally in older children, an edema over the mastoid process is important. It should be emphasized that vacillations of temperature without the canal signs are not reliable, though if these temperature elevations are continued and unexplained by pneumonia, pyelitis or by gastro-intestinal disturbance, they must be regarded as pointing to mastoid involvement. If successive blood counts show an increase in the number of polymorphonuclear cells and in the total leukocyte counts, they are also valuable; but single blood counts are of little importance since the blood in children is susceptible to a polymorphonuclear and total leukocyte increase.

To my mind the indications for the mastoid operation are a persistence of the signs already mentioned, in spite of free drainage through the wide incision in the drum. It is manifest that if the inflammation is not subsiding there must be increasing destruction of the mastoid cells, and the only method of cure is by posterior drainage through the mastoid bone, together with clearing out of all the cells and bony tissues that are infected.

Sinus thrombosis is so exceedingly rare in my experience that I can say very little about those signs. In several instances, however, this diagnosis has been suspected chiefly because of a marked septic type of the temperature curve. It cannot be emphasized too often that marked vacillation in the temperature is a most unsafe guide to either mastoid disease or to sinus thrombosis. The temperature in children is so readily changed by slight causes that there must be localized evidence in order to make a diagnosis. Particularly, one should be on the lookout for pneumonia, pyelitis, tonsillitis, inflammation of the lymph nodes in the neck, and gastro-intestinal disturbances. During epidemics of grip it may be impossible to find any local condition

to explain the temperature variations; but without definite evidence of trouble in the mastoid or in the signs as determined by positive blood cultures, such diagnosis should not be made. In a baby, aged 19 months, sinus thrombosis was suspected but did not exist, and in another instance sinus thrombosis was suspected, probably because of tenderness along the mastoid muscle. This tenderness was an inflammatory reaction in the edge of the muscle extending down from the mastoid process, which had been opened.

Of actual labyrinthine disease complicating mastoiditis I have seen only one case; it is, of course, very rare.

I have said nothing with regard to operations of mastoid and sinus, because they belong distinctly to the realm of the otologist. My plea to the general practitioner and to the pediatrician with regard to ear infections in children is that careful routine examination of the ears be made in all cases in which fever is present. It cannot be emphasized too often that to the man who treats children, the otoscope is just as necessary as the stethoscope.

113 East Sixty-First Street.

USE OF MERCUROCHROME-220 AS A GERMICIDE IN OPHTHALMIA NEONATORUM

A PRELIMINARY REPORT

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BALTIMORE

Since the appearance of the article by Young, White and Swartz,¹ calling attention to the germicide dibrom-oxymercuryfluorescein (mercurochrome-220), showing its penetrating power as well as its germicidal action on the gonococcus, with its slight irritability, we have used it in four cases of gonococcal ophthalmia neonatorum with exceedingly satisfactory results:

CASE 1.—M. D., aged 3 weeks, whose eyes had discharged pus since birth, the only treatment having been boric acid irrigations, was brought to the dispensary of the Baltimore Eye, Ear and Throat Charity Hospital for treatment, Jan. 6, 1920. Examination revealed the typical acute gonorrheal conjunctivitis with swollen lids and purulent secretion, the cornea being clear. Smears showed many pus cells containing gram-negative diplococci. A 2 per cent. solution of mercurochrome was freely instilled in each eye at the hospital, and boric acid irrigations were continued at home as before.

January 7, the lids were not glued together, there were no crusts at the margins, the edema was subsiding, and there was only a small amount of pus in each conjunctival sac. Smears were taken and no gonococci were found. The eyes were again flushed with the 2 per cent. solution, and boric acid irrigations were continued.

January 9, edema of the lids had disappeared: no free pus and no gonococci were found in smears. The eyes were again flushed with the 2 per cent. solution.

January 10, there was no purulent secretion, and a smear was negative. The 2 per cent. solution was again instilled. Although instructions were given to return in two days, the patient was not observed again.

CASE 2.—A. T., aged 11 days, appeared for treatment at the Baltimore Eye, Ear and Throat Dispensary, Jan. 6, 1920, being brought by an aunt who said that the child was delivered by a midwife and no drops were used. Its eyes became sore three or four days after delivery. Examination revealed acute purulent ophthalmia neonatorum with edema of the lids and much free pus, the right lid being more swollen than the left. The corneas were clear. A smear showed numerous pus cells with gram-negative intracellular diplococci. A 2 per cent. solution of mercurochrome was used at the hospital after cleansing with boric acid, and a similar solution was given the aunt with instructions as to the method of use every two hours.

January 9, the left conjunctival sac was almost entirely free from pus, and edema of the lids was much less, the right lid being still swollen. A purulent secretion still showed gonococci, but there was much less secretion and the organisms were fewer. The treatment was ordered to be continued.

January 12, the patient was admitted to Sydenham Hospital with a diagnosis of acute indigestion, and died, but no connection was attributed to eye treatment by the physician in charge. The note in reference to the eyes was that "they were almost free from inflammation."

CASE 3.—B. R. was born in Maryland Lying-In Hospital, Jan. 10, 1920, and Credé's method was employed. Nine days later the lids became edematous, with purulent conjunctivitis which showed an abundance of gonococci. A drop of 1 per cent. silver nitrate solution was instilled into each eye with cleansing, and 10 per cent. argyrol was used every three hours.

January 21, all the symptoms were exaggerated, the discharge being very profuse and the lids edematous, although the cornea remained clear. At 5 p. m. on this date a 2 per cent. solution of mercurochrome-220 was used, and was continued every three hours in place of all other treatment.

January 22, the eye showed marked improvement, the edema of the lids and the secretion both being lessened.

January 23, there was no edema of the lids, but there was considerable serous discharge: no gonococci were found in smear.

January 24, there was a slight serous discharge.

January 26, the patient left the hospital. The secretion was very slight and no gonococci were found.

February 4, the mother reported that the child's eyes were normal.

CASE 4.—A. D. had a smear taken from the eyes two days after birth, as the mother had been under treatment, although the baby's eyes showed no inflammation. The smear showed the presence of gonococci. Two per cent. solution of mercurochrome was instilled every two hours. Three days later no gonococci could be found on staining a smear.

COMMENT

It is not necessary in a report of this character to go into the chemistry or the experimental data of this new germicide, as they were thoroughly treated in the article referred to; nor do we present this as a new sure cure. Rather do we wish to call our colleagues' attention to its application in eye infections, especially infections with the gonococcus. While we have used it in some other infections, it has not seemed as yet more efficacious than the older remedies.

To be sure, these infants frequently improve on cleansing treatment alone, but there seemed a very marked improvement on using the new remedy. The crucial test will come in the cases of gonorrheal conjunctivitis in the adult. While we did use it in the last stages of one case with seemingly marked improvement, we do not feel justified in including it in this report.

A 2 per cent. solution can be used with impunity and with only a slight burning effect for the first few seconds. Though it is rather disagreeable to use on account of the red stain, it is no more objectionable

1. Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract: "Mercurochrome-220," J. A. M. A. 73: 1483 (Nov. 15) 1919.

than argyrol, and will not produce a permanent stain, as occasionally happens with the silver preparations. In the cases reported there was a marked improvement after its use was begun, and apparently a much more rapid convalescence.

THE METABOLISM OF A DWARF

STUDIES IN METABOLISM: I

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BOSTON

The metabolism in this case is recorded because in the first place it is somewhat unusual, and in the second place no other studies on the metabolism of dwarfs of the same age have been made.

REPORT OF CASE

F. D., a boy, had been under the observation of the overseers of the poor, and had always been placed in excellent homes. The family history was unknown. He was very small and thin in spite of the fact that he had had plenty of good food and outdoor exercise. He had had none of the infectious diseases. At 3 years of age he was much undersized, and is said not to have gained much in weight or size since that time. When 7 years old he weighed, when dressed, 12.6 kg. (27 pounds, 5 ounces) and was 91.5 cm. (36 inches) tall, the normal weight for the age being 21.9 kg. (48 pounds, 1½ ounces) and the height 114.3 cm. (45 inches). His physical examination, aside from his small stature, was normal. A diagnosis of a dwarf boy with rickets was made. His basal metabolism is given in Table 1. The figures represent the basal metabolism without food. His temperature was 98.8, and he had had nothing to eat since midday.

Table 2 shows the results of his metabolism studied during two active periods while fasting and with a temperature of 99.7 F. He weighed at this time 12.93 kg.

The recent work of Benedict and Talbot,¹ about to appear in a forthcoming publication of the Carnegie Institution of Washington, gives, for the first time, the

TABLE 1.—BASAL METABOLISM, MAY 17, 1918

Carbon Dioxid Produced Calculated to Hour Basis, Gm.	Heat Produced per 24 Hours				Average Pulse Rate	Relative Activity
	Total Calo- ries	Per Kilo- gram, Calories	Per Square Meter			
			Body Lissauer, Calories	Surface Du Bois, Calories		
11.22	777	58	1,335	1,257	104	I asleep
11.32	784	58	1,347	1,269	105	I asleep

complete curve of the basal metabolism of children from birth to puberty, and makes possible comparisons which in the past were not feasible.

The basal figures found for F. D., as compared with the normal studied by us, showed that his total metabolism for twenty-four hours was 780 calories against an average of 900 calories for normal boys of the same age. Although his metabolism was slightly diminished, it was almost within the variation of the normal. When the total calories of F. D. were compared with the total calories of normal boys of the same weight, it was found that he was producing more calories than the average, the total calories for F. D. being 780 against 675 calories for normal boys. This is slightly above the possible variation from the normal.

His metabolism, studied from the point of view of unit of body weight, was found to deviate markedly from the normal. His calories, 58 per kilogram, against the average for normal boys of the same age, 40 calories per kilogram, show an increase of 45 per cent., and his metabolism per kilogram of body weight an increase of 13.7 per cent. above the normal. It is evident, then, that the intensity of his metabolism is greater for each unit of body weight than that of a normal boy. His variation from the normal is striking, and although possibly characteristic of certain types of dwarfs, it may be due to the fact that there is very little fat on his body. As might be expected, his metabolism per unit of body surface was 12 per cent. higher than that of normal boys of the same age, and 11 per cent. higher than that of normal boys of the same weight. This is probably because of the relatively large amount of active protoplasmic tissue and the absence of the inert blanket of body fat, as well as the relatively increased amount of body surface.

TABLE 2.—METABOLISM WHILE FASTING, MARCH 25, 1918

Carbon Dioxid Produced Calculated to Hour Basis, Gm.	Heat Produced per 24 Hours					Average Pulse Rate	Relative Activity
	Total Calo- ries	Per Kilo- gram, Calories	Per Square Meter				
			—Body Lissauer, Calories	Surface Du Bois, Calories			
16.15	1,051	98	2,245	2,118	122	IV	
19.56	1,273	98	2,245	2,118	130	III	

COMMENT

There is no evidence in the physical examination or clinical status of this boy to explain his failure to grow or to prove that he suffered from any disturbance of the glands of internal secretion. Intellectually he was said to be up to other boys of the same age. He had no disturbance of digestion, and his dwarfism may have been merely another evidence of infantilism. His metabolism showed that he did not belong to the class of individuals who have diminished glandular secretion, as in cretinism, myxedema, or hypopituitarism, in which there is a lowered metabolism.

The maximum number of calories used by him shows that when he was restless, even while lying flat in the respiratory chamber, his metabolism would increase nearly 50 per cent. It is evident, of course, that with more active exercise, his metabolism would have increased very much more. It is fair to assume, therefore, that his protoplasmic mass must work at a greater rate of speed than is the case in children who have deficient glandular secretion. It is possible that his increased metabolism might be due to excessive activity of some gland of internal secretion for which no clinical sign was found.

The result of the metabolism studies on this boy show that in order to make him gain in weight he must receive as many calories as a normal boy of the same age, and a great many more calories per kilogram than a normal boy of the same age or weight. Undoubtedly he will require at least twice as many calories as the basal metabolism gives, or approximately 120 calories per kilogram. This is similar to what was found to be true in atrophic infants who required from 160 to 180 calories per kilogram before they gained.

311 Beacon Street.

Differential Diagnosis.—In appendicitis beginning suddenly there is a rise in temperature; in acute perforation of the stomach or duodenum the temperature falls.

1. A preliminary communication on this work (Benedict, F. G.: Energy Requirements of Children from Birth to Puberty) appeared in the Boston Medical and Surgical Journal 181:107 (July 31) 1919.

THE SUBOXIDATION SYNDROME IN
CHILDHOOD

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AND

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NEW YORK

The condition which we have designated as the "suboxidation syndrome" is found with few exceptions among the offspring of the well-to-do. The forebears of the children presenting this syndrome are usually those who have lived indoor occupational lives for two or more generations—those who have been occupied with intellectual pursuits and not by manual labor.

A child with the suboxidation syndrome is one whose physical functions are habitually below the normal. He may be overweight, or of average weight, but he is usually underweight. There is a lowered capacity in endurance, and the emotional control is defective. As a rule, the child is precocious and mentally overactive, and possesses much nervous energy. One of the striking features is a dryness of the skin with a tendency to erythema and mild eczema. Patchy areas of inflammation are particularly prone to appear about the mouth. Perspiration is scanty, and the child rarely perspires except on very hot days, and then only under active exercise. The hands and feet readily become cold in cold weather, and this feature is complained of by the parents. They feel low temperature keenly. Extra heavy outdoor garments are required during the winter months. A moderate anemia is present in most cases. The appetite is often capricious, and constipation is the rule.

One of the frequently encountered features of this syndrome is a marked tendency to afebrile rhinitis and bronchitis. The child is scarcely free from one attack when another supervenes. There is a chain of these respiratory affections throughout the winter. The "colds" are sufficiently severe and frequent in occurrence to interfere seriously with the activity of the patient, and much time is lost in school and outdoors. It is rare to find a patient of this type who has not had both tonsils and adenoids removed, with little or no benefit.

As a class they are rather immune to infection of the respiratory tract, although pneumonia and infectious bronchitis may, of course, occur. While they show a certain resistance to bacillary affections of the respiratory mucous membrane, they quite frequently are subjects of protein sensitization; and bronchitis, when it occurs, is likely to be of the spasmodic type.

Another feature of the syndrome is the tendency to attacks of recurrent vomiting. The child vomits once or repeatedly for a few hours or a day or two. The vomiting seizures may have occurred at fairly definite intervals for several months or years.

In some of these patients, transient skin rashes or eczema may be the predominating manifestation that brings him to us; or it may be because of the anemia or that he is underweight or that he has not gained in height for a period of several months.

Others will give the history of an elevation of the temperature, lasting one or more days, occurring at fairly regular intervals, without other manifestations than those of heavy breath and a coated tongue.

Not all cases show an identical train of acute manifestations. In one respect, however, these children are

very similar: They have a defective metabolism for the soluble carbohydrates and for the hydrocarbons, particularly for cow's milk fat in the amount that we have accustomed ourselves during the last few decades to give to children.

ILLUSTRATIVE CASES

CASE 1.—A boy, aged 3 years, weighing 29 pounds and without physical abnormality, had been subject to recurrent attacks of elevation of the temperature since the age of 1 year. They occurred about every two months. There was loss of appetite, coated tongue and listlessness, with a temperature of from 101 to 103. There was rarely vomiting, the fever periods lasting from three to five days. The skin showed scattered areas of erythema. He was put on a diet free from cow's milk fat, and sugar. During the next eight months there were no further attacks of illness, and he had gained 3½ pounds in weight and 2½ inches in height.

CASE 2.—A girl, aged 6 years, who weighed 47½ pounds and who was without physical abnormality, had a habitually coated tongue and habitually poor appetite. Meal times were a trial to the other members of the family. In disposition she was irritable, her complexion was sallow, the skin was dry over the back of the neck, where there was persistent erythema. There were patchy areas of eczema about the mouth, causing considerable disfigurement. She was subject to frequent catarrhal colds. One followed the other so rapidly that it was difficult to say when one was finished and another began. Tonsils and adenoids had been removed without benefit. It was with concern that the parents looked forward to the approaching winter. She was given a diet from which sugar was largely excluded, enough being allowed to make the food palatable. Butter was forbidden. One pint of skimmed milk was allowed daily. Aside from these restrictions, the food given was that of any well child of her age. After two months under this management she weighed 53 pounds, a gain of 6¾ pounds. There had not been a day's illness. The tongue was clean, with no trace of eczema. She was happy and good natured. During the last six months there have been only two slight colds, and the skin remains clear.

CASE 3.—A girl, aged 8 years, weighing 51½ pounds, gave the history of early eczema and difficult feeding, and "had always been on a diet for her skin." The immediate occasion for the consultation was the occurrence of vomiting attacks at intervals of from four to five weeks. The attacks usually lasted from one to two days, during which time the vomiting occurred frequently. The tongue was much coated at this time, and there was a moderate elevation of the temperature—from 100 to 102. After a seizure she was left very weak, and required several days for recuperation. The heart and lungs were normal. The blood showed 50 per cent. hemoglobin, the red cells, 4,700,000. The urine was entirely negative. She had been taking 1 quart of milk daily in addition to that used on cereals and in puddings. Sugar had been allowed with the customary freedom. She was put on the usual mixed feeding suitable for a child of her age, with restriction to skimmed milk and no sugar. After ten weeks and four days she weighed 56 pounds, a gain of 4½ pounds. The mother reported that during the interval there had been no vomiting and no fever; the tongue remained clean and the bowels regular. This case has been followed for five months without a return of the vomiting seizures.

CASE 4.—A boy, aged 7 years, with a height of 47½ inches and a weight of 42 pounds, came to us, Jan. 2, 1920, because of "frequent colds, persistent wheezing in his chest and a cough which was relieved only by warm weather." The condition had existed for three years, with a particularly severe cough since the preceding November. The patient was thin, pale and weak. The appetite was poor. Food had to be forced. The blood showed 70 per cent. hemoglobin and 4,200,000 red cells. The urine was negative. The heart action was rapid and the heart sounds were normal. Examination of the lungs revealed mucons and sibilant râles fairly evenly distributed. There was slight bronchial spasm. The tonsils and adenoids had been removed. There was no eleva-

ion of the temperature. Acting under medical orders the child had been generally supplied with sugar, cream, milk and butter with the idea of improving his physical condition. Our treatment was to order a general mixed diet largely sugar-free, 1 pint of milk daily, and very little butter. The further instructions were that the boy should remain in bed until 10 a. m. each day, rest one and one-half hours after the midday meal, and retire at 7 p. m.

One pint of a vichy water was to be drunk daily. He was allowed to go outdoors, and no cough mixtures were given. There was a betterment of the cough in three days, with a gradual cessation and entire disappearance in eighteen days. Fourteen days after our first examination the bronchitis had entirely disappeared. After six weeks under treatment, the weight was 47 pounds, a gain of 5 pounds, with a marked improvement in the general appearance of the patient, and an entire absence of cough. The appetite was most satisfactory, and foods such as vegetables and cereals, which the patient previously had to be coaxed and forced to eat, were taken eagerly. The child had remained free from the cough for ten weeks.

COMMENT

A noteworthy feature in nearly every case treated has been the improvement in appetite and the marked gain in weight as soon as the fat and sugars which had been given above the capacity of the patient had been removed from the diet. Foods such as vegetables and cereals which had been taken with reluctance and then in small quantities are often taken eagerly.

The management of children presenting the sub-oxidation syndrome suggested in the foregoing brief case histories will appear in detail in a later publication.

An examination of the urine in a certain percentage of these cases shows a slight but constant acetonuria on an ordinary diet, even when the patients are apparently well. Those subject to attacks of vomiting show a marked acetonuria during the attack. A great majority exhibit a marked acetonuria with acute febrile illness.

A study of the blood by one of us (L. B.) of the patients we have come to classify as "suboxidation syndrome," when apparently well, has shown a variable hyperglycemia varying from 130 mg. of glucose per hundred c.c. of blood as the lowest, to 280 mg. per hundred c.c. as the highest, in a series of sixty-seven cases, the average being 163. Of these, twenty-seven presented themselves with recurrent vomiting, sometimes alternating with bronchitis or eczema as the predominating symptom, and showed an average blood sugar of 175 mg. per hundred c.c.; three who came for recurrent pruritus averaged 170 mg. per hundred c.c.; eleven who exhibited eczema as the predominating symptom averaged 148 mg. per hundred c.c.; two who came for recurrent attacks of fever, with coated tongue and acetone breath, averaged 162 mg. per hundred c.c.; twenty-three who had frequent colds and bronchitis as their chief complaint averaged 160 mg. per hundred c.c.

The blood sugar of ninety-two children not belonging to this group was also examined. These varied between 80 and 125, averaging 105. They included those who came for examination and feeding, for malnutrition, adenoids, intertrigo, enuresis, simple anemia, constipation, proteinogenous asthma, obesity, chronic nephritis, essential headache, chronic cervical adenitis, anorexia, acute bronchitis, tics, nonepileptic convulsions, recurrent vomiting with dilated stomach and redundant sigmoid, recurrent vomiting, frequent colds, asthma due to enlarged tonsils and adenoids relieved by operation, migraine, urticaria, mucous colitis, flat-

foot, chorea, seborrheic eczema of the scalp, cardiac disease, tetany, pylorospasm, gonococcus vaginitis, epilepsy, habit spasm, chronic otitis media and enlarged tonsils.

We have examined four cases belonging to the sub-oxidation syndrome group characterized by attacks of vomiting at the height of the attack. They showed a hypoglycemia, the figures being 80, 85, 85 and 70 mg. per hundred c.c. One case of bronchitis with bronchospasm examined in the attack had 75 mg. sugar per hundred c.c. of blood.

Ten cases classifiable clinically as belonging to the suboxidation syndrome group have not shown any definite hyperglycemia at the time of examination. Of these there were four cases of frequent colds, with an average blood sugar of 105 mg. per hundred c.c.; two cases of eczema averaged 97; three cases characterized by recurrent vomiting averaged 106, and one of recurrent diarrhea showed 105. We believe that a study of their sugar tolerance would show it impaired, and we hope to make a study of their blood sugar curve after the ingestion of sugar.

DETERMINATION OF BLOOD SUGAR

The method used to determine the blood sugar was an adaptation of Benedict's¹ modified picric and picrate method to finger blood along the lines followed by Epstein in applying the original picric acid method:

Of the blood, 0.2 c.c. was obtained from a finger and was immediately mixed with 0.8 c.c. of distilled water, the blood laking after a little shaking. To this, 1.5 c.c. of Benedict's picric acid picrate reagent was added drop by drop and thoroughly mixed. The precipitated proteins were then thrown down by centrifuging. Of the supernatant fluid, 1 c.c. was taken, 0.5 c.c. of 20 per cent. anhydrous sodium carbonate added, and the mixture, corked with absorbent cotton, was placed in a water bath for ten minutes. This was compared in the Kuttner colorimeter with a standard solution of potassium dichromate, made up by matching against a solution of glucose containing 0.2 mg. to the cubic centimeter, treated as the blood was treated, described above.

132 West Eighty-First Street—1421 Madison Avenue.

MERCURIC CHLORID POISONING FROM VAGINAL INJECTIONS—TWO FATAL

P. BROOKE BLAND, M.D.

PHILADELPHIA

In the local treatment of acute and chronic pelvic affections, vaginal irrigations are valuable and helpful measures. Usually they are harmless; when carelessly and indifferently employed, however, they may result in extensive local organic destruction and occasionally cause death, as emphasized in two of the clinical instances herewith presented.

CASE 1.—History.—Mrs. E. F., aged 29, seen in consultation June 4, 1918, with Dr. George Cunningham, Vineland, N. J., first menstruated at the age of 20, and menstruation had always been regular. It recurred every twenty-eight days, and was not accompanied by pain. The discharge continued from four to five days, and it had always been rather profuse. Frequently it contained clots. She was married at 21, and had had three pregnancies. All continued to full term and terminated normally. She was never sutured.

Present Illness.—Four weeks prior to admission to the Vineland Hospital, the patient took a copious douche of hot

1. Benedict, S. R.: A Modification of the Lewis-Benedict Method for the Determination of Sugar in Blood, *J. Biol. Chem.* 34: 201 (April) 1918.

water, to which were added two "bluc tablets," (mercuric chlorid). These were employed, she said, to prevent conception. Very soon after the irrigation, the paticnt was seized with violent burning pain in the vulva and vagina. The family physician prescribed various agents without relief. The following day, thc vulva became intensely swollen and red, and presented all the signs of violent inflammation.

TABLE 1.—BLOOD ANALYSES

	Mg. per 100 C.c. Whole Blood
Jan. 14, 1920:	
Nonprotein nitrogen.....	204
Urea nitrogen.....	97.3
Creatinin.....	10.6
January 19:	
Nonprotein nitrogen.....	330.4
Urea nitrogen.....	102.6
Creatinin.....	11.1
January 23:	
Nonprotein nitrogen.....	370.3
Urea nitrogen.....	152.5
Creatinin.....	11.6

Urination was difficult and extremely painful. This process continued for several days and latterly had been accompanied by a profuse seropurulent discharge. The material frequently contained long pieces of shreds and membrane.

Examination and Course.—Four weeks subsequent to taking the douche the vulva was still somewhat swollen and inflamed. The vagina showed most striking changes. The canal was almost completely closed, and its diameter would not permit the introduction of my index finger. The mucosa had entirely sloughed away and the tube was lined by red, resistant, tender, granular membrane. There were no marked constitutional symptoms at any time. Operative measures were recommended for the vaginal stenosis, but were refused, and the patient passed from the hands of her family physician. No further record could, therefore, be obtained of the case.

CASE 2.—History.—Mrs. E. J., aged 21, admitted to Jefferson Hospital, Oct. 11, 1919, first menstruated at the age of 17, one year subsequent to her marriage. It had always been regular, and of the twenty-eight day type. The flow had been scanty and extremely painful. The last menstrual period occurred Aug. 30, 1919, or approximately two months before her admission to the hospital.

Present Illness.—Two days before, in order to prevent conception, the patient took a douche of hot water to which she added a teaspoonful of "white powder" (mercuric chlorid). One quart of water was used. Immediately after the irrigation she was seized with violent burning pain. The family physician was called, who applied oils and gave the patient an alkaline douche. The treatment gave temporary relief. The following day the vulva became greatly swollen and discolored. The pain was intense. Shortly afterward a profuse seropurulent discharge appeared which later on contained particles of tissue.

TABLE 2.—DIFFERENCE BETWEEN PATIENT'S BLOOD AND THE NORMAL

	Normal, Mg.	Patient's Blood, Mg.	Difference, Mg.
Nonprotein nitrogen.....	From 25 to 35	370.3	335.3
Urea nitrogen.....	From 12 to 23	152.5	129.5
Creatinin.....	From 1 to 2	11.6	9.6

Examination and Course.—The woman was rather delicate. She was suffering great agony. The pupils were normal. The lips were parched, dry and cracked. The tongue and pharynx were extremely red and dry. The mucous membrane throughout the throat was intensely injected. The lungs were normal. The heart presented a moderately loud systolic murmur, and its rate was rapid. The abdomen was somewhat distended, and was rather resistant and tender, especially above the pubic arch. The vulva was found to be extremely swollen, red, tender and in a state of violent inflammation. The labia were pendulous and edematous.

The vaginal orifice was covered with a ycllowish green exudate, and a profuse seropurulent discharge, foul and offensive, was pouring from the vaginal opening. Digital examination was attempted, but was impossible on account of the intense pain. The temperature was normal. The pulse rate ranged from 100 to 130. Respirations were practically undisturbed. The urine contained a large quantity of albumin, a great variety of casts, and a large number of white and red blood cells. The general systemic symptoms became worse, and she died of complete suppression of urine, October 18, seven days after her admission to the hospital.

CASE 3.—History.—Mrs. T. S., aged 28, admitted to Jefferson Hospital, Jan. 9, 1920, had always been in good health and never suffered any serious disease. Menstruation began when she was 13. It was always regular and lasted from three to four days. The flow was accompanied by pain on the first day, but there were no clots. The last period occurred Oct. 13, 1919, approximately three months before her admission to the hospital. She married at the age of 22 and had had three pregnancies. The first pregnancy terminated in abortion at the end of five weeks. This was not induced. The second pregnancy continued to full term, and she was delivered normally. Her third conception occurred, Oct. 13, 1919, and terminated, by self induction, Jan. 8, 1920.

TABLE 3.—URINALYSIS

Date	Specific Gravity	Reaction	Albumin	Sugar
1/14/20	Q.N.S.*	Acid	Trace	Negative
1/16/20	Q.N.S.	Acid	Light cloud	Negative
1/17/20	1.015	Acid	Cloud	Negative
1/18/20	1.014	Acid	Cloud	Negative
1/19/20	1.010	Acid	Trace	Negative
1/20/20	1.015	Alkaline	Trace	Negative
1/21/20	1.012	Acid	Trace	Negative
1/22/20	1.015	Alkaline	Faint trace	Negative
1/23/20	1.010	Alkaline	Trace	Negative

Microscopic Examination				
White Blood Cells	Blood	Casts	Acetone	Urea, per Cent.
Many	Negative	Many	Negative	Negative
Many	Negative	Occasional granular	.....	1.1
Many	Pus	Occasional granular	.....	1.4
Many	Pus	Occasional granular	.....	1.2
Many	Pus	Many	.....	.....
5-6	Pus	Many	.....	2.2
8-10	Negative	Hyaline	.....	1.4
5-6	Negative	Many	.....	1.0
.....	Negative	Many	.....	.....
.....	Negative	.....	.....	.....

* Quantity not sufficient.

Present Illness.—This began, January 8, following a uterine irrigation of hot water to which she added two "tablets" (mercuric chlorid). The douche nozzle was carried deliberately into the cervical canal, and the irrigating material was allowed to flush the interior of the uterine cavity. Immediately thereafter the patient was seized with sharp abdominal pain. This was intermittent in character and occurred about every five minutes. Abortion occurred the following day. A fetus 3 inches in length was expelled, and the placenta and membranes came away one hour later. Subsequently the patient developed vomiting and diarrhea. She also felt creepy and suffered a rather violent chill. She had a profuse bloody discharge, which was exceedingly foul. She also developed general joint pains. Urinary excretion became extremely slight. The skin of the patient became extremely dry, and her mouth cracked and parched. The family physician treated her for suppression of urine and uremia by placing her in hot packs. He was not informed by the patient or husband of the true condition of affairs.

Examination and Course.—The patient was admitted to the hospital with complete urinary suppression. No urine had been passed during the preccding twenty-four hours, and none was passed for four days subsequently. Diarrhea and vomiting were more or less constant. These were uncontrollable. She complained of intense restlessness and violent headaches. She also suffered with a burning sensation in the region of the vagina and bladder. Her mouth was swollen.

The teeth were tender, and the breath was extremely offensive. The eyes were normal. The lips were dry and cracked. The tongue was dry, coated and furred. The throat was injected. The breath was extremely foul. The lungs were normal. The heart action was regular, and no adventitious sounds were heard. The abdomen was somewhat distended and rather rigid and tender over the kidneys and in the midline, low down. The mucous membrane of the vagina was normal. There was a seropurulent discharge from the uterus. The cervix was patulous and allowed the introduction of the finger. A large slough of endometrium was removed during the examination.

The last specimen of blood was drawn on the morning the patient died, and the comparison (Table 2) will show the difference compared with the normal.

A complete blood count, January 10, revealed: hemoglobin, 50 per cent.; red blood cells, 3,130,000; color index, 0.91; white blood cells, 15,800; the red cells appeared to be normal; polymorphonuclear neutrophils, 98 per cent.; polymorphonuclear eosinophils, 2 per cent.; polymorphonuclear basophils, 0; small mononuclears, 9 per cent.; transitionals, 0. January 18: polymorphonuclear neutrophils, 94 per cent.; polymorphonuclear eosinophils, 2 per cent.; polymorphonuclear basophils, 0; small mononuclears, 2 per cent.; large mononuclears, 1 per cent.; transitionals, 1 per cent.

The symptoms of the patient gradually became worse, and she died, January 23, two weeks after admission.

1621 Spruce Street.

Clinical Notes, Suggestions, and New Instruments

A CARDIAC DEVELOPMENT DEFECT, WITH RETURN TO NORMAL

STAFFORD McLEAN, M.D., NEW YORK

This case will be of interest to those who are consulted regarding prognosis in infants with congenital cardiac conditions.

REPORT OF CASE

History.—The child, a girl, was delivered at the Sloane Maternity Hospital through a vaginal cesarean operation by the late E. B. Cragin. The mother, aged 31, was an eclamptic primipara. She was six and a half months pregnant; her blood pressure was 200 and there was 80 per cent. albumin in the urine. The birth weight was 2 pounds, 1 ounce. On account of the infant's condition the customary measurements were omitted. On the hospital record there is noted a heart murmur present at birth, but there is no mention of cyanosis. A nevus about 1.5 cm. in diameter was present at the outer canthus of the right eye. During the first three months of life this was treated by three applications of liquid air with a good result.

The infant was placed in an incubator, where it was kept for six weeks. The weight on the fourteenth day was 1 pound, 14 ounces. It was discharged from the hospital at the age of 3 months with a weight of 5 pounds, 11 ounces. At 6 months the weight was 5 pounds, 12 ounces. Breast milk was given for the first two months, when modified whole cow's milk was substituted.

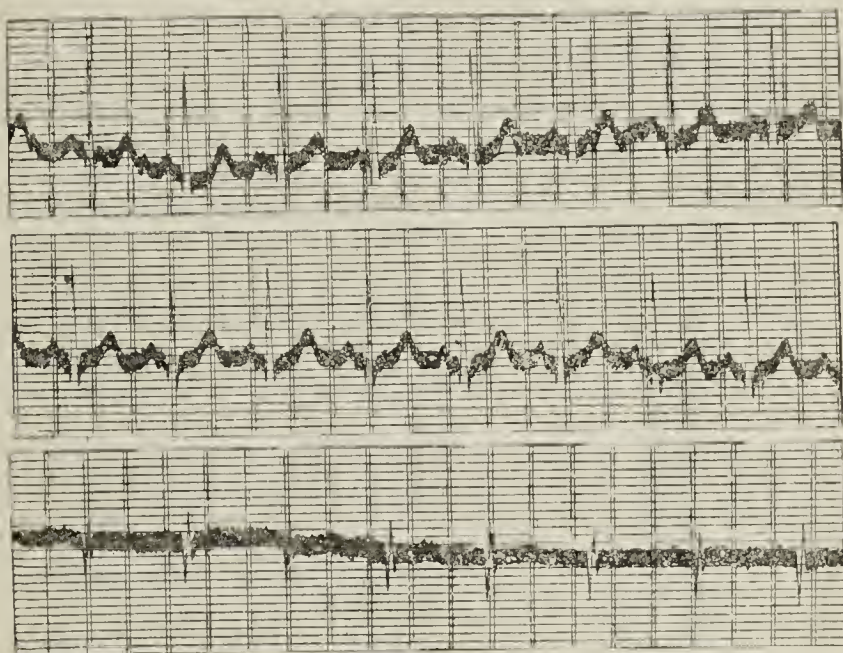
First Examination.—The infant was first seen by me when 9½ months old. Its weight at that time was 9 pounds, 13 ounces. It was badly nourished, and was intensely cyanotic over the entire body, the cyanosis being marked on the face, lips and hands. The fingers showed marked clubbing; no cardiac enlargement could be made out. A loud systolic murmur was heard over the entire chest, most intense over the area of cardiac dulness. No difference in intensity could be detected between base and apex. The murmur was not transmitted to the vessels of the neck. The heart rate was 260. The systolic blood pressure was 75. The red blood

cells were 7,000,000, and the hemoglobin was 105 per cent. Craniotabes was present.

Treatment and Course.—The amount of food was increased, cereals were given with a spoon, and before the twelfth month orange juice, beef juice and yolk of hard boiled egg were added. The increase of weight was slow but continuous, and at the twentieth month the weight was 21 pounds, 8 ounces. At this age she was on a varied diet of milk, potato, scraped beef, apple sauce, etc. The murmur did not change in character between the tenth and twentieth month, but the cyanosis became less intense.

The child began to walk at the twentieth month. Examination at the twenty-second month after an interval of two months failed to reveal a murmur, the cyanosis had disappeared, and the clubbing of the fingers was hardly noticeable. When seen again at thirty months there was no clubbing. At 22 months of age she had pertussis. At 25 months of age she had epistaxis several times; this occurred at infrequent intervals until the thirtieth month.

At 32 months of age the child presented a robust, healthy appearance. The physical examination disclosed nothing abnormal. Weight was 31¼ pounds, height 34¼ inches, abdomen 20¼ inches, chest 21 inches, and head 18¼ inches. No enlargement of the heart could be demonstrated by percussion; the apex was in the fifth space, 2½ inches to the



Electrocardiogram by Leads I, II and III; between the corresponding line of successive pairs of ordinates the time interval is one-fifth second. The space between abscissas represents 0.1 millivolt.

left of the midsternal line, the right border was apparently at the border of the sternum.

Roentgenologic Findings.—When the child was 33 months of age, roentgenograms were made by Dr. Archibald H. Busby. He reported: "Plates show no material enlargement of the heart. The right border is about 1 inch to the right of the midsternal line. The shadow at the base of the heart on the left side is rather broad, the cause of which does not appear to be auricular, but rather within the vessels about the heart."

Electrocardiographic Findings.—An electrocardiogram made about the thirty-second month by Dr. H. E. B. Pardee is reproduced here. His opinion was that the record showed an unusual ventricular complex for a child of that age in that it suggested an approach to left ventricular predominance, though this was not frankly developed. He inferred that the heart might have been subjected to some abnormal influence. In his experience the usual electrocardiogram of children of that age showed a normal relation of the R waves or a suggestion of right ventricular predominance. He knew of no congenital anomaly which would lead to a left-sided hypertrophy except aortic narrowing.

Present Condition.—The child is now 5 years, 11 months of age. She is a sturdy, well nourished child with no symptoms or physical signs of cardiac abnormality. The weight is 40 pounds, height 42 inches, chest 20¾ inches, and abdomen

20 inches in circumference. She has had none of the infectious diseases of childhood, with the exception of pertussis as noted above. Her heart apex impulse is in the fifth space, $2\frac{3}{8}$ inches from the midsternal line; the second aortic sound is loud but cannot be considered abnormal.

COMMENT

The case is unusual from several angles. It is unusual for pregnancy terminated at $6\frac{1}{2}$ months to result in a living child. It is uncommon for an infant to survive whose weight drops to a point as low as 1 pound, 14 ounces.

Speculation is futile regarding the defect or defects in many of the infants with cardiac symptoms. That the symptoms were due to a developmental defect rather than a fetal endocarditis is borne out by the history and the outcome. It would seem possible that the disappearance of the symptoms was due to the return of the heart to normal rather than to the development of an unusual degree of compensation. A defect in the ventricular septum existing without any associated lesion could explain the symptoms and their subsequent disappearance.

17 East Seventy-First Street.

A NEW INSTRUMENT FOR LIGATING BLEEDING BLOOD VESSELS AFTER THE REMOVAL OF TONSILS

JOHN A. CAVANAUGH, M.D., CHICAGO

The instrument here described has been a great comfort to the originator, as he can leave all patients after tonsillectomy with a feeling of safety, knowing he will not be called because of hemorrhage. The instrument can be used with ease when the bleeding vessel is deep in a cavity, as it requires but little space.

It is similar in shape to artery forceps. On the end of one arm there is a needle about half an inch long; at the end of the other arm is a rounded end, perforated, through which the needle will pass.

Parallel with the arm and extending beyond the perforating area in this arm is a forklike process with two prongs to form a groove between the rounded part and the fork part for the passage of a thread, which is grasped by the needle as it passes through. On the handle of the perforated blade is a spring for the purpose of placing the threads and of holding them taut, which is very essential.

The instrument is now ready for use. The size of the catgut should be noted, for if it is too large it will

Instrument for ligating bleeding blood vessels after removal of tonsils.

not engage in the needle; No. 0 or No. 1 may be used. The catgut should be moistened shortly before use; otherwise it will be stiff, will not remain taut, and will be harder to draw through the instrument and tissue. Every bleeding vessel that shows itself should be tied, as this is easily done and one need not be afraid of future hemorrhage. The bleeding area is grasped with artery forceps. One should take the instrument that is threaded, and introduce it as one would a second forceps, to grasp the tissue deeper, make slight traction on the hemostat and allow the needle to pass through the tissue, which, when withdrawn, leaves the thread buried under the bleeding vessel and engaged in the perforated end of the needle.

As soon as the needle is drawn through with thread attached, the thread in the spring is loosened and the thread will be more easily drawn through. The artery forceps may now be removed, or one may wait until the ligature has been tied.

7 West Madison Street.

A SIMPLE CLAMP FOR MAKING BALKAN FRAMES OF IRON PIPE

GEORGE T. JOHNSON, M.D., TERRE HAUTE, IND.

These clamps can be quickly made by any blacksmith, from materials in general use. Each clamp consists of an iron plate made of one-eighth inch sheet iron, and two U bolts. Four holes are drilled in the plate to admit the free ends of the U bolts. The dimensions given are suitable for use with one-half inch pipe.

A joint made with these clamps will not slip under a great load. They will likewise fasten the upright pipes firmly to the ordinary iron bed. If it is desired to make the frame independent of the bed, crutch rubbers serve admirably on the lower ends of the upright pipes and prevent any possible damage to the floor.

It is best to have sixteen clamps for each frame so that one can make any arrangement suitable for the individual case. The accompanying illustration shows how the clamp is applied.

Clamp for making Balkan frames of iron pipe.

RAPID ABSORPTION OF MERCURIC CHLORID IN A CASE OF POISONING

SEYMOUR DePORTE, M.D., ARDMORE, OKLA.

B., a white girl, aged 21, waitress, was suddenly seized with terrific abdominal pain, and symptoms of a severe gastroenteritis with vomiting and purging. The temperature was subnormal, ranging between 95.4 and 96 F.; the skin was cold and clammy; the pupils were markedly dilated, and the radial pulse was not perceptible.

On questioning the patient, it was ascertained that she had inserted two 7.3 grain mercuric chlorid tablets into the vagina to prevent conception.

She was brought to the hospital and was given electric sweat box treatment for rapid elimination, calcium sulphid was given grain for grain, diuretics were given freely, and strychnin hypodermically. Egg albumin by mouth gave no relief. She craved water continually, but would not take nourishment.

Hot water bottles were used with electric heat appliances. The temperature remained subnormal throughout. Urination was scanty, and finally entirely suppressed. There was diarrhea with tenesmus and sanguinolent discharges, and the skin was infiltrated with a dark pigment.

She was easily roused and her mind was clear. Questions were readily answered.

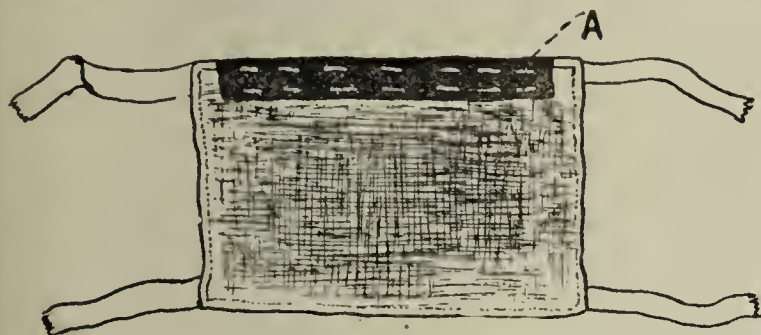
Vaginal examination revealed great tenderness with slight bloody discharge. Not a drop of urine could be obtained within eighteen hours.

The patient died in about twenty-four hours of the time she was brought to the hospital from acute traumatic nephritis.

SURGEON'S MASK FOR THOSE WHO WEAR GLASSES

C. E. LOCKE, JR., SAN FRANCISCO

On entering the operating room, one often sees a surgeon who is being annoyed because his mask does not fit. Especially is the surgeon who wears glasses bothered. If his mask is adjusted to cover the nose, then his glasses soon become so "smoked up" that vision is difficult. The remedy is simple: A narrow strip of adhesive tape is sewed adhesive side up to the upper edge of the mask on its internal side, as shown in the accompanying illustration. This sticks the mask to the bridge of the nose and under the eyes. Thus



Inside of mask: A, adhesive strip (adhesive surface up) sewed to it.

the mask is prevented from sliding, and also the warm breath is prevented from passing upward and condensing on the glasses, rendering them more translucent than transparent. Another more simple method of accomplishing the same result is by the use of a strip with a double face of adhesive tape, such as is made by Johnson and Johnson to secure wigs to the head.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

BARBITAL SODIUM-ABBOTT (See New and Non-official Remedies, 1920, p. 84).

The following dosage form has been accepted:

Elixir Barbitol Sodium-Abbott.—Each fluid ounce contains barbitol sodium-Abbott 20 grains.

CHLORAZENE (See New and Nonofficial Remedies, 1920, p. 137).

The following dosage form has been accepted:

Aromatic Chlorazene Powder.—A powder composed of chlorazene, 5 per cent.; sodium bicarbonate, 5 per cent.; eucalyptol, 2 per cent.; saccharin, 1 per cent.; sodium chloride, 87 per cent.

DESICCATED CORPUS LUTEUM-HOLLISTER-WILSON (See New and Nonofficial Remedies, 1920, p. 204).

The following dosage forms have been accepted:

Capsules Corpora Lutea Desiccated-Hollister-Wilson 2 grains.—Each capsule contains desiccated corpus luteum-Hollister-Wilson 2 grains.

Capsules Corpora Lutea Desiccated-Hollister-Wilson 5 grains.—Each capsule contains desiccated corpus luteum-Hollister-Wilson 5 grains.

Tablets Corpus Luteum Desiccated-Hollister-Wilson 2 grains.—Each tablet contains desiccated corpus luteum-Hollister-Wilson 2 grains.

Tablets Corpus Luteum Desiccated-Hollister-Wilson 5 grains.—Each tablet contains desiccated corpus luteum-Hollister-Wilson 5 grains.

DIPHTHERIA IMMUNITY TEST (SCHICK TEST) (See New and Nonofficial Remedies, 1920, p. 304).

The Gilliland Laboratories, Ambler, Pa.

Schick Test.—Marketed in packages containing a capillary tube of diphtheria toxin (standardized) and a 5 Cc. vial of physiological solution of sodium chloride for dilution, the amount being sufficient for 20 tests; also marketed in packages containing four capillary tubes of diphtheria toxin and four vials of physiological solution of sodium chloride. Two-tenths (0.2) Cc. of the dilution is injected intradermally which represents 1/50 minimum lethal dose for a guinea pig of 250 gram weight.

CORPORA LUTEA SOLUBLE EXTRACT—HOLLISTER-WILSON.—A sterile solution of those constituents of corpus luteum which are soluble in physiological solution of sodium chloride containing in each Cc. 0.02 Gm. of soluble matter in addition to sodium chloride, and chlorbutanol as a preservative.

Actions and Uses.—See general article on Ovary, New and Nonofficial Remedies, 1920, p. 201.

Dosage.—1 Cc. daily in extreme cases. Less according to individual cases.

Manufactured by the Hollister-Wilson Laboratories, Chicago.

Ampoules Corpora Lutea Soluble Extract-Hollister-Wilson.—Each ampule contains 1 Cc. corpora lutea soluble extract-Hollister-Wilson.

Corpora Lutea Soluble Extract-Hollister-Wilson is made by extracting desiccated corpus luteum with physiological solution of sodium chloride, and is adjusted to contain 0.02 Gm. of soluble extract in each Cc. The equivalent weight of dried corpus luteum represented by this amount of soluble extract is variable ranging from about 0.06 Gm. to 0.18 Gm.

Corpora Lutea Soluble Extract-Hollister-Wilson is a straw colored liquid with the peculiar odor of corpora lutea.

EUCATROPINE. — Euphthalmine. — Phenyl-Glycolyl-Methyl-Vinyl-Diacetonalkamine Hydrochloride. — $C_6H_5N(CH_3)(C_6H_5CHOH.CO)HCl$ = The 1,2,6,6-tetramethyl-4-mandeloxy-piperidine hydrochloride. Eucatropine was first introduced as euphthalmine.

Actions and Uses.—Eucatropine produces prompt mydriasis free from anesthetic action, pain, corneal irritation, or increase in intra-ocular tension. It has little or no effect on accommodation, and such effect as it has disappears more rapidly than with atropine, cocaine, homatropine, etc. In its effects on the general system, eucatropine very closely resembles atropine. It is useful as an aid in ophthalmoscopic examinations in place of atropine, homatropine, etc.

Dosage.—From 2 to 3 drops of a 5 to 10 per cent. solution, according to the age of the patient and the nature of the case, are instilled into the eye.

Eucatropine is prepared by methylating vinyl-diacetonalkamine (M. P. 161 C.) esterifying the methyl vinyl-diacetonalkamine with mandelic acid, treating the free ester in ether solution with gaseous hydrogen chloride, and recrystallizing the precipitated hydrochloride.

Eucatropine is a white, granular, odorless powder; permanent in the air.

Eucatropine is very soluble in water; freely soluble in alcohol and chloroform; insoluble in ether.

Eucatropine melts not below 183 C.

The aqueous solution of eucatropine (1:50) is clear and colorless and is neutral to litmus.

Aqueous solutions of eucatropine (1:50) are precipitated by sodium carbonate test solution, potassium mercuric iodide test solution, iodine test solution, picric acid test solution and many other reagents for the alkaloids.

Add a few drops of nitric acid to about 0.005 Gm. of eucatropine, evaporate the mixture to dryness on a water bath, cool and add a few drops of alcoholic potassium hydroxide test solution together with a fragment of potassium hydroxide. No violet color results (distinction from atropine, scopolamine or hyoscyamine).

Incinerate about 0.5 Gm. of eucatropine, accurately weighed. The ash amounts to not more than 0.1 per cent.

Dissolve about 1 Gm. of eucatropine, accurately weighed, in 10 Cc. of water, make alkaline with ammonia water, shake with successive portions of ether until extraction is complete, washing the ether layer each time with water and adding the washings to the original solution before the next extraction, allow the solvent to evaporate spontaneously, dry the residue to constant weight at 80 C. and weigh. The residue of eucatropine base is not less than 86 per cent.

Recrystallize the free base obtained as above from petroleum ether. The crystals melt at not below 111 C.

Eucatropine-Werner.—A brand of eucatropine complying with the N. N. R. standards.

Manufactured by the Werner Drug and Chemical Co., Cincinnati, Ohio. No U. S. patent or trademark.

Early Diagnosis of Cancer.—Unfortunately the very smallest cancers give no symptoms unless they are on the skin or lip or tongue or elsewhere on the surface of the body, in which situations the earliest diagnoses can be made. Cancers the size of a pea or but a little larger are often diagnosed and removed by a surgeon with an assured favorable result, if the operation has been properly done. In the stomach and internal organs, however, the cancer does not give rise to symptoms until it is quite large, and it is important, therefore, for any one who has any disturbance of the stomach or intestines, loss of weight or anemia, to go at once to a surgeon, because by modern chemical methods and by the use of the roentgen ray, a diagnosis can often be made long before the cancer can be felt or seen. One of the last symptoms of cancer is pain, which is caused by the growth pressing on the nerves as it spreads out through the tissues. —*Health News*, Albany, N. Y., February, 1920.

PROCEEDINGS OF THE NEW ORLEANS SESSION

MINUTES OF THE SEVENTY-FIRST ANNUAL SESSION OF THE AMERICAN
MEDICAL ASSOCIATION, HELD AT NEW ORLEANS, APRIL 26-30, 1920

HOUSE OF DELEGATES

First Meeting—Monday Morning, April 26

The House of Delegates met in the Orleans Parish Medical Society Building, New Orleans, and was called to order at 10 a. m. by the Speaker, Dr. Hubert Work, Pueblo, Colo.

Preliminary Report of the Committee on Credentials

The Chairman of the Committee on Credentials made a preliminary report for this committee, stating that the committee desired at this time to report progress, and that more than a quorum of delegates had qualified.

As there was no objection, the report was accepted.

Next in order was the roll call by the Secretary.

The Secretary stated that the registration of the delegates in attendance recorded the presence of more than a quorum.

A quorum being present, the Speaker announced that the House was constituted and ready for the transaction of business.

The next order of business was the presentation, correction, and adoption of the minutes of the Seventieth Annual Session.

The Secretary stated that the minutes had been printed and circulated among the members of the House of Delegates, with the request for criticisms or corrections, but none had been received.

It was moved that the reading of the minutes of the Seventieth Annual Session be dispensed with and approved as printed.

Seconded and carried.

Addresses of Executive Officers

Drs. Hubert Work, Speaker; Alexander Lambert, President, and William C. Braisted, President-Elect, addressed the house. See addendum.

Reports of Officers

Report of the Secretary

To the Members of the House of Delegates of the American Medical Association:

The following report for the year 1919-1920 is respectfully submitted:

MEMBERSHIP

The membership of the various constituent state associations which is the membership of this Association, according to records in the Secretary's office, April 1, 1920, was 83,338, as shown in the accompanying table.

FELLOWSHIP*

The Fellowship of the Scientific Assembly of the American Medical Association on May 1, 1919, was 45,412. During the year 477 Fellows have died, 123 have resigned, 171 have been dropped as not eligible, 303 have been dropped for nonpayment of dues, and the names of ten have been removed from the rolls on account of being reported "not found," making a total of 1,084 names to be deducted from the Fellowship roll. There have been added to the Fellowship roll 3,307 names of which 2,136 were transferred from the subscription list of THE JOURNAL. The Fellowship of the Association on

April 1, 1920, was 47,045, a net increase for the eleven months covered by this report of 1,633.

This gain in the number of Fellows, as in previous years, is due largely to circularizing subscribers to THE JOURNAL who are eligible to Fellowship, urging them to become Fellows.

DEATHS OF OFFICERS

During the year, two of the officers of the Association have died:

Dr. Emery Marvel, Atlantic City, N. J., Second Vice President, died in Philadelphia following a surgical operation, Jan. 8, 1920. Dr. Marvel was the chairman of the Local Committee on Arrangements for last year's annual session.

Dr. Elmer Ernest Southard, Cambridge, Mass., chairman of the Section on Nervous and Mental Diseases, died in New York City on Feb. 8, 1920, after a brief illness.

INTERIM APPOINTMENT

Early last fall, Dr. J. B. Blake, Boston, resigned as a member of the Council on Scientific Assembly, and the President appointed Dr. Frank P. Gengenbach, Denver, to serve on this council until this annual session.

ORGANIZATION

In my report submitted at the last annual session, a comment was made relative to the activity of the Association in assisting those physicians who had been in military service to resume civil practice, and it was stated that the almost universal opinion was that these physicians were finding a hearty reception in the localities where they formerly practiced, and that where they had elected to locate in new communities, they were in practically all instances welcomed by the medical profession. Attention was called to the task which confronted the Association along with its constituent state associations and their component societies to assist in bringing about a better state of affairs in the medical profession. It is gratifying to report that since the 1919 annual session, the organized medical profession has met the obligation which was then anticipated, and that in large part the members of the Medical Reserve Corps have again taken up civil practice.

There are, however, new obligations somewhat similar in character which must be undertaken. As noted last year, it cannot be expected that an exact prewar status will ever be restored. There are new economic and civil relationships affecting every calling which have and will develop during the reconstruction period. All of these are of peculiar interest to the individual practitioner both in his personal and family relationships and in his ability to serve the public. In all these questions, the American Medical Association, as the inclusive nonsectarian organization of practitioners of medicine of the United States, must have an active interest, and must give its best endeavor to the solution of the problems involved. Many of these will command the attention of the House of Delegates, and where it is advisable investigations should be directed to be conducted by the several Councils of the Association so that when the House of Delegates next meets, it shall have at hand data which will warrant the determining of the policy of the Association in these various matters.

In order that the Association shall be able to cope with these problems, it is advisable to strengthen our organization wherever this is possible. Not only should the various branches of the organization—the county, state and the national—put forth earnest efforts to increase membership, but a concerted effort should be made to attain a closer and more intimate cooperation between these branches. There is a possible danger which should be guarded against

* These figures do not include those who are still Fellows of the Scientific Assembly by virtue of their being commissioned and on active duty as Medical Reserve Corps Officers, but who, previous to their military service, were not Fellows.

namely, a multiplicity of organizations in the same territory having practically the same objective. Whenever an unnecessary new organization in an already occupied territory is effected, there is always the danger that rivalry will result between the two organizations which consciously or unconsciously will interfere with the effectiveness of the organization of the medical profession in that locality. In a few instances, new organizations of this character have

ORGANIZATION OF CONSTITUENT ASSOCIATIONS

Constituent Association of	No. Counties in State	No. Component Societies in State Assn.	Number Counties in State Not Organized		No. Physicians in State (6th Ed. Directory)	Number Members of State Association		No. A. M. A. Fellows in State	No. Subscribers to Journal in State*
			1919	1920		1919	1920		
Alabama.....	67	67	.....	.....	2,530	1,751	1,728	411	368
Arizona.....	14	11	3	3	333	188	213	160	106
Arkansas.....	75	63	12	12	2,587	1,001	1,042	380	286
California.....	57	43	17	14	5,929	3,273	3,311	2,099	1,462
Colorado.....	63	29	34	34	1,713	881	950	582	384
Connecticut.....	8	8	.....	.....	1,701	1,048	1,054	653	400
Delaware.....	3	3	.....	.....	264	102	123	73	57
Dist. Columbia.....	.....	.....	.....	.....	1,237	573	567	366	274
Florida.....	54	32	22	22	1,296	566	572	285	282
Georgia.....	154	92	63	62	3,436	1,426	1,188	539	565
Iaho.....	44	19	16	25	449	123	184	94	140
Illinois.....	102	101	1	1	10,909	6,894	7,049	4,584	2,373
Indiana.....	92	91	1	1	4,765	2,093	2,331	1,333	591
Iowa.....	99	99	.....	.....	4,004	2,259	2,342	1,332	710
Kansas.....	105	67	42	38	2,683	1,637	1,760	837	420
Kentucky.....	119	117	3	2	3,503	2,130	2,353	731	398
Louisiana.....	64	40	24	24	2,023	1,029	1,203	470	415
Maine.....	16	15	1	1	1,179	720	712	326	162
Maryland ¹	23	21	2	2	2,268	1,047	1,143	708	579
Massachusetts ²	14	14	.....	.....	5,870	3,709	3,840	2,243	1,284
Michigan.....	83	81	2	2	4,598	2,978	2,620	1,685	763
Minnesota.....	86	83	3	3	2,548	2,037	1,335	1,115	658
Mississippi.....	51	78	3	3	1,975	361	499	281	263
Missouri ¹	114	103	14	11	6,063	3,345	3,402	1,529	847
Montana.....	50	17	27	33	661	375	375	190	144
Nebraska.....	92	64	29	28	2,237	882	1,116	652	469
Nevada.....	16	3	13	13	152	79	73	43	39
New Hampshire.....	10	10	.....	.....	657	528	526	279	79
New Jersey.....	21	21	.....	.....	3,046	1,814	1,748	1,187	727
New Mexico.....	28	12	16	16	456	207	199	108	100
New York.....	61	61	1	.....	15,877	8,540	9,110	5,302	3,158
North Carolina.....	100	86	14	14	2,237	1,231	1,377	433	464
North Dakota.....	52	51	2	1	604	429	431	269	125
Ohio.....	88	87	1	1	7,802	3,832	4,670	2,432	1,323
Oklahoma.....	77	67	12	10	2,672	1,583	1,638	610	284
Oregon.....	36	33	3	3	1,128	712	707	263	261
Pennsylvania ³	67	63	4	4	11,539	6,626	6,687	4,407	2,372
Rhode Island ²	5	5	.....	.....	759	409	400	296	132
South Carolina.....	46	41	4	5	1,237	719	640	305	280
South Dakota.....	67	10	8	8	646	368	385	236	163
Tennessee.....	96	67	29	29	3,481	1,599	1,612	643	429
Texas.....	248	178	71	70	6,236	3,059	3,102	1,395	768
Tah.....	29	4	25	25	477	229	266	173	123
Vermont.....	14	12	2	2	639	423	406	163	87
Virginia ⁴	100	59	41	41	2,509	1,773	1,735	591	463
Washington.....	39	19	20	20	1,673	1,100	1,096	535	352
West Virginia.....	55	43	12	12	1,759	1,081	1,078	481	298
Wisconsin.....	71	71	.....	.....	2,783	3,041	1,904	1,110	625
Wyoming.....	22	5	17	17	254	93	92	73	76
Disc., Foreign, Govt. sub. for Army, Navy & U. S. P. H. S. ....	.....	.....	.....	.....	.....	.....	.....	137	2,799
Canal Zone.....	.....	.....	.....	.....	.....	109	102	20	26
Hawaii.....	5	.....	.....	.....	.....	72	72	40	40
Porto Rico.....	7	.....	.....	.....	.....	93	126	34	44
Philippine Isl.....	.....	.....	.....	.....	.....	110	144	43	82
Totals.....	3,039	2,366	614	612	145,384	82,288	83,338	45,266	30,119
Commissioned Officers ⁵ and Honorary Fellows.....	.....	.....	.....	.....	.....	.....	.....	1,779	.....
.....	.....	.....	.....	.....	.....	.....	.....	47,045	.....

* Not including Fellows of American Medical Association.
 Note.—The number of members of the different associations stated in this table is in accord with the membership of the several associations as they were reported to the Secretary on April 1, 1920.
 The lack of an effective uniform system for reporting the membership of the state associations accounts for whatever discrepancies this table shows and detracts from the value of the statement.
 Component societies are those societies which compose the state association. A component society may include one county or more.
 1. The state of Maryland has 23 counties and the city of Baltimore; Missouri has 114 counties and the city of St. Louis.
 2. These state associations are divided into district societies, and these are listed in the table as component societies. Some of these districts are smaller and some larger than the county, the county lines being ignored.
 3. Provision is made for the physicians in each of these counties to join the component society in an adjoining county.
 4. Virginia has recently adopted the plan of organization and is now establishing component county medical societies.
 5. This figure includes the Medical Corps of the Army, the Navy and the Public Health Service.

diverted from the county and the state branches of the Association the activities of certain members who previously had taken a leading part in county and state work, and it has been proposed even that financial support should be given to certain of these new bodies in a manner which might deprive the branches of the American Medical Association of the benefits of funds which, if available, could be used best through the regular channels of the state and county organizations. It is, of course, recognized that the American Medical Association and its several branches, as well as these newer organizations, are purely voluntary organizations. No one can be compelled to hold a membership which he does not desire, nor should he be forced to withdraw from or refuse to join any other organization in order that he may maintain his membership in a component branch of the American Medical Association. Nevertheless, it seems advisable to submit this matter to the House of Delegates in the hope that the members will give careful consideration to the advisability of strengthening the organization wherever this is possible, and that the question in turn may be brought to the attention of the state associations and the county societies, and that in all branches of the organization, members of the medical profession shall be urged to devote themselves to the advancement as well as the extension of the county, state and national bodies.

Other matters in which the office of the Secretary has been active, are reported to the House of Delegates from other sources.

Respectfully submitted,

ALEXANDER R. CRAIG, Secretary.

Report of the Board of Trustees

Dr. Philip Marvel, Chairman, presented the following report, which was referred to the Reference Committee on Reports of Officers.

To the Members of the House of Delegates of the American Medical Association:

In these times of unusual political and social unrest, with the general dissatisfaction accompanying high cost of living, it is a pleasure to be able to report that the various activities of the Association are progressing satisfactorily and that so far as THE JOURNAL is concerned the year has been one of the most satisfactory in its existence.

The detailed statement which appears in tabular form in the addenda will show that there were 3,760,351 copies of THE JOURNAL printed in 1919—265,504 more than during the previous year—and that the average weekly circulation was 72,314. On January 1 the actual circulation was 74,919; this number does not include extra, sample or special copies that were sent out week by week. THE JOURNAL mailing list on Jan. 1, 1920, as compared with January 1 of the preceding year shows an increase of 7,375; that is to say, there was an increase of over 7,300 in the circulation of THE JOURNAL during the year 1919—a remarkable showing considering all the conditions.

ADVERTISING DEPARTMENT

The advertising department makes an unusually good showing: this is due partly to the amount of advertising space sold, but more particularly to increased advertising rates. Naturally, the larger the circulation of a periodical the more valuable it becomes as an advertising medium and the higher is the rate for advertising space it commands. However, the past year has been one of great prosperity, and business firms have been very liberal in advertising. This must be kept in mind in planning for the future. It is needless to add that we are keeping our advertising up to the standard which has prevailed for many years; that if we cared to lower this standard there might be still a larger increase in the advertising income.

SPANISH EDITION

The first year of the Spanish Edition of THE JOURNAL has been reasonably satisfactory. Its publication was undertaken with some hesitancy because it meant a venture in an entirely

new field. Other periodicals had been published in this country in the Spanish language for circulation in South and Central America, but their publication was undertaken for commercial reasons. Our Spanish Edition entered the field solely as a scientific periodical for educative and scientific purposes, and it has been received with approbation. The field was a difficult one to work in the first place because there was not available any physician's directory, or any even fairly reliable list of physicians of standing. However, a list of such physicians has been gradually assembled so that now there is a fairly reliable one at the Association headquarters. Included in this list are the physicians of Central and South America and the Philippine Islands.

Another difficulty has been the mailing facilities; these have been anything but satisfactory. Under normal conditions it takes a long time for a communication to reach the South American countries, with the exception of those bordering on the Gulf of Mexico.

At the end of the year the subscription list comprised 2,908 names. To those who appreciate the difficulties and know the conditions that prevailed at the beginning, this must be regarded as quite satisfactory. Roughly, this circulation is as follows: The largest number of subscribers naturally are in Mexico—539; Cuba next, 530; Argentina, 270; Brazil, 194 (in Brazil Portuguese is the language in general use, therefore it is rather remarkable that this number of subscribers has been secured there); Chile, 179; Spain, 142; Peru, 101. The rest of the circulation is in Bolivia, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Nicaragua, Paraguay, Salvador, Santo Domingo, Uruguay, Venezuela, Panama and Porto Rico.

It is not to be expected that this journal could be published without a loss for the first few years. As will be remembered, the venture was undertaken at the request of the International Health Board of the Rockefeller Foundation, which agreed to pay half the loss. It should be explained in this connection that the number of copies of each issue printed was 4,500 to 5,500, and that the excess above those subscribed for was sent out as sample copies. Hereafter, of course, there will be fewer sample copies distributed; consequently a less expense with an increased income. During the months of January, February and March the circulation has been steadily increasing. The actual loss to the Association to date has been less than \$10,000, which amount promises to be returned with more than gratifying results within the first five year period of its publication.

ARCHIVES OF INTERNAL MEDICINE

The ARCHIVES OF INTERNAL MEDICINE has made a good showing for the past year. On December 31 there were 2,593 subscribers—seven less than the previous year. This decrease was due to the fact that the government, which during the war had taken a large number of copies, had since cut down its order considerably. There was actually an increase of 227 in our domestic list, and of forty-five in the foreign list.

A reference to the auditor's report will show that this journal made a net gain last year of \$1,692.82, as compared with a loss the previous year of \$1,320.58. This better showing is explained in part by the fact that the two volumes for 1919 were smaller than in previous years, and in part also by the increased subscription price. Previous to last year the regular price was \$4 per annum, but if taken in combination with one or more of the other Association periodicals only \$3. The price at the present time has been made \$5, and the combination price \$4. Last year there were only 217 subscribers who paid the full \$5 rate.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

The AMERICAN JOURNAL OF DISEASES OF CHILDREN likewise made a very satisfactory showing: On Jan. 1, 1920, there were 2,531 names on the mailing list—an increase of 417 over January 1 of the previous year—and the auditor's report shows a gain of \$784.37, as compared with a gain of \$404.62 in 1918. In this journal, the number of pages for 1919 was much increased over that of the previous year.

The subscription price was also increased from \$3 to \$4, but here again practically all the subscribers get it at the club rate of \$1 less than the regular price.

ARCHIVES OF NEUROLOGY AND PSYCHIATRY

None of the other special journals published by the Association seems to have given more satisfaction or to have been more appreciated by the specialists for whom it is published than the ARCHIVES OF NEUROLOGY AND PSYCHIATRY. The circulation on Jan. 1, 1920, was 1,158. Considering the special character and the limited number of men to whom such a journal will appeal, this circulation in a year is phenomenal; it is larger than that of any other journal devoted to these subjects in any language.

Naturally a loss might have been expected, but the loss as shown in the auditor's report—\$2,695.40—is greater than it should be, and indicates that, considering the size of the publication, the number of pages (the two volumes for 1919 contained 1,546 pages), the number and character of the illustrations—many being in colors—the original price of \$5 was too low, especially as the subscribers, with very few exceptions, pay \$1 less than the regular price in combination with other journals. The price of this periodical will, therefore, be raised from July 1 to \$6, which means \$5 in combination with any other of the Association's publications.

ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY

In January we commenced the publication of the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, which has started out very well.

ARCHIVES OF SURGERY

It is proposed to commence the publication of the ARCHIVES OF SURGERY in July. It is now planned to publish this at first as a bimonthly; later, as the amount of material increases, it will become one of the monthly publications.

PUBLICATION OF SPECIAL JOURNALS

The Constitution states that the object of the American Medical Association is to promote the science and art of medicine. The Trustees are of the opinion that there is no better way of doing this than by aiding the various scientific workers in the publication of their contributions. The Association is unusually well equipped mechanically to do the printing; and its facilities for direct contact with the profession make possible the promotion of these publications in an economic manner. This undoubtedly is being thoroughly appreciated, for other special groups are beginning to look to the Association to help them out in the publication of their special periodicals. For instance, an appeal from a large number of physicians was received by the Trustees urging the Association to publish a journal to take the place of the *American Journal of Obstetrics and Diseases of Women and Children*. The present condition of our printing plant is such, however, that it does not seem advisable to attempt the publication of any more journals for a while.

While the Trustees favor the publication of these journals by the Association they feel that they should not be published at a loss, but rather at cost or at slightly above cost.

QUARTERLY CUMULATIVE MEDICAL INDEX

This is another of the scientific publications of the Association, of which the Association should be proud. The circulation at the end of the year was 738—an increase of only 88 during the year. However, no effort has heretofore been made to push the circulation of the INDEX. From now on and until the scientific men of our profession know that there is such a help for research workers at a nominal price, more effort will be made to increase the circulation.

The INDEX last year sustained a loss of \$1,787.12. Here again realize that the price is lower than it should be, and as of July 1 there will be an increase of \$1, making it \$5 per annum. Those who know the book appreciate the fact that this is an extremely low price for one of its kind. It could not be published without a greater loss if it were not for our splendid facilities.

COOPERATIVE MEDICAL ADVERTISING BUREAU

This Bureau is no longer an experiment, it is a great success; it is so regarded, we believe, by all the state journals it represents, which means by all the state journals except that of Illinois. It has now become self-supporting, and at the end of 1919 it was possible to rebate a considerable sum to the journals represented, as was done at the end of 1918.

As we have stated in our former reports, the Bureau has demonstrated that it is possible to secure for these journals a fair amount of advertising of which neither the journals themselves nor the medical profession need be ashamed. The Bureau has removed the temptation to accept that class of advertising which for so many years had been not altogether creditable.

COUNCIL ON PHARMACY AND CHEMISTRY

In reply to the suggestion made last year by President Bevan that there should be closer cooperation between the large pharmaceutical houses and the Council on Pharmacy and Chemistry, the Council has submitted to the Board of Trustees the following statement:

"COOPERATION OF THE PHARMACEUTICAL HOUSES: At the opening meeting of the House of Delegates last year, President Arthur Dean Bevan suggested the desirability of greater cooperation between the large pharmaceutical houses and the Council on Pharmacy and Chemistry. The need of such cooperation has been recognized by the Council from the first. In no one direction has the Council made greater effort than in its endeavor to secure the fullest cooperation of the various pharmaceutical houses. The difficulty has been, and always must be, the fundamental antagonism between objectives that are largely commercial on the one hand and purely scientific on the other. Nevertheless, the Council has always believed—and has acted on the belief—that there is a possible middle ground wherein the interests of therapeutics would not be injured but would go hand in hand with a commercial development based on enlightened self interest.

"The profits to be made by a pharmaceutical house from the sale of a staple drug—a pharmacopeal, National Formulary, or nonproprietary preparation—which enters into free competition with other drugs of the same kind, are moderate; the profits to be made from the sale of a proprietary medicine on which the manufacturer holds a monopoly are usually large—sometimes enormous. There are, broadly, two kinds of proprietary preparations advertised to physicians: One represents laborious research ending in the production of a new medicinal chemical; this product can be patented and the manufacturer can obtain a seventeen-year monopoly on its manufacture and sale. The other represents no research but comprises simple mixtures—frequently of the "shotgun" variety—of well known pharmaceuticals, or biologic products sold under trade names. As these do not represent anything new or original the manufacturer is unable to obtain a patent, but by means of the trade name he can and does obtain a perpetual monopoly. This, from a business standpoint, is more valuable than the limited monopoly granted by a patent. It is not surprising that proprietary remedies of the latter type flourish so long as physicians unthinkingly accept and prescribe them solely on the manufacturer's valuation.

"The Council has practically the undivided support of manufacturers of medicinal chemicals; that is, of proprietaries of the first mentioned type. But pharmaceutical firms which have found it profitable to promote proprietaries of the second type—"specialties," unscientific or ordinary mixtures of pharmaceuticals or biologic products, sold under trade names—have not supported the Council.

"When the Council was organized, it was hoped and believed that all the large pharmaceutical houses would find it possible and desirable, if not actually more profitable, to shape their business methods so as to make their proprietary and other articles conform to those conservative standards on which the Council bases its rules, and thus render such articles acceptable for New and Nonofficial Remedies. It soon developed, however, that the methods of the pseudochemical companies, whose sales propaganda in the interest of unscientific nostrums with its attending damage to scientific medicine had led to the establishment of the Council, had found their lodgment in most of the pharmaceutical houses. It was a genuine disappointment to the Council to find that some of the large and old-established firms were not only unwilling to cooperate with the Council, but in many instances exhibited a definite antagonism to the Council's work.

"The object—and duty—of the officers of pharmaceutical houses is primarily to pay dividends to their stockholders. Through skilful advertising or the persuasiveness of "detail men," they are able to induce physicians to prescribe their controlled products, on which there are large profits, even though such products have not only not been accepted by the Council, but, in many instances, have been disapproved. Is it any wonder that concerns which put out such products are indifferent or openly antagonistic to the work of the Council? The matter is largely one of business policy. When the medical profession as a unit will support the Council in its work, then such firms will find it good business policy to accede to Dr. Bevan's suggestion—but not before."

Evidently the problem resolves itself into this: The Council, constituted of scientific men, working without remuneration in the interest of scientific medicine and the medical profession, expects—and rightfully—the cooperation and support of the members of that profession. What is needed,

therefore, is the active, sympathetic cooperation of physicians; the cooperation of pharmaceutical houses will follow as a matter of course.

THE PROPAGANDA DEPARTMENT

The interest of the profession and the public in the work of the Propaganda department is increasing. During the past year the department has received more inquiries from newspapers regarding medical "copy" than ever before, and has also had an unusually large number of inquiries relative to itinerant quacks. Data were furnished which, in many instances, sufficed to bring action that materially protected the public; in some instances the information was used as the basis of legal action against the quacks. The department also has answered a remarkably large number of inquiries from schools and colleges, due to the attention that teachers are giving to the nostrum evil, and to the knowledge they have of the availability of the Propaganda department's educational material. More than the usual number of inquiries has been received regarding those "patent medicines" whose most potent ingredient is alcohol. The pamphlets, educational posters and stereopticon slides that are prepared and issued by the Propaganda department continue in active demand. One of these pamphlets was considered of sufficient importance to be introduced into the records of a government committee that was considering a bill designed to restrict advertisements relating to the treatment of venereal diseases and of certain sexual disorders. A new edition of "Nostrums and Quackery" is in the hands of the printers and will be issued shortly. This department of THE JOURNAL continues to justify its existence. As a clearing house for information on the subjects with which it deals it proves a boon alike to the profession and the public.

INCREASED EXPENSES

The steadily increasing cost of production is likely to cause serious concern if it continues much longer. As an illustration we might refer to the price of paper used in THE JOURNAL. A reference to the auditor's report for 1918 will show that paper for THE JOURNAL that year cost approximately \$162,000. Last year—1919—it was over \$217,000—an increase over the preceding year of approximately \$55,760. There was an increase in circulation, but this was small as compared with the increase in cost of paper. We entered this year with a still further increase; at the lowest estimate, our paper for the current year will cost in the neighborhood of \$35,000 more than last year, even though there should be no further increase. Wages in the printing trade are still advancing; an increase that went into effect last February, 1920, adds at least \$22,000 to the pay in the printing department. The increase in these two items alone—paper and labor in the mechanical department—will add at least \$57,000 to the expense this year. In addition there is a steady increase in the wages for all the other help—stenographers, typists, clerks, etc.

While there is no immediate cause for anxiety it is well for us to realize that we must be prepared for whatever the future may have in store. It may be necessary either to increase the subscription price of THE JOURNAL—say \$1.00 a year—or to reduce its size. However, this is for the future. Your attention is called to these matters that you may know the conditions that have developed and which are developing.

HOSPITAL STANDARDIZATION

At the meeting of the Association in Atlantic City in 1919 the House of Delegates adopted the following resolution, which was presented by the Reference Committee on Reports of Officers:

"That the Trustees be instructed to establish a Council on Hospitals as an independent body, or a Bureau on Hospitals as a body subsidiary to one of the already existing councils, the details of the organization to be left to the Trustees with power to act."

In reference to this action of the House of Delegates the Board desires to place before you the following facts: For

many years the work of the Council on Medical Education has necessarily embraced the accumulation of data relating to hospitals. This phase of the Council's work gradually increased in importance to a degree that two years ago it was found necessary to create in the office a special section on hospitals—which, in reality, is a bureau of the Council on Medical Education—having hospital work particularly in charge. The efficient secretary of the Council on Medical Education has directed this work both before and since the bureau was established. During the last seventeen years a vast amount of valuable information concerning the hospitals of the country has been obtained by means of personal inspection, correspondence, answers to questionnaires sent to members of attending staffs, officers and ex-interns of hospitals, and in this work the secretary has sought and obtained the splendid cooperation of the component county and state medical societies. The data so obtained have been recorded, indexed and filed in the office of the Association, and have been the basis of the lists of hospitals published in the directory, and lists of hospitals approved for intern training which, since 1914, have been widely distributed. The character and the great utility of the data on file are further shown in the reports of the Council on Medical Education to the House of Delegates for the last several years, and particularly in the reports for 1919 and for this year.

Your attention is directed also to the fact that the standardization of hospitals is intimately related to medical education. The extensive means within the jurisdiction of the Association, which may be utilized to advance and maintain the standards of medical education, may be, and in fact are being used coincidentally to standardize hospitals. These means include those resources of the Association embraced in its organized personnel and well-equipped office, its many and varied files and indexes of information relating to the medical profession, and its command of the cooperative influence of its membership as represented in the constituent state and county societies—resources which make unnecessary the expenditure of extremely large sums of money.

In this connection your attention is directed to the fact that, comparatively speaking, the Association has never spent a large sum of money annually for the standardization of medical education. The great things accomplished have come about through the sentiment created in the public mind through annual conferences and by the publication of statistics relating to medical education and business and the resultant support of the members of the Association of the policies, educational standards and classifications put forward by the Council on Medical Education.

Experience has shown that work worth while, such as has been accomplished by each of the various Councils of the Association, has depended largely on one man. With no desire to belittle the splendid advice and assistance of the members of a Council who are responsible to the Association for the adopted policies, minimum standards of work and methods of procedure, after all the real responsibility for efficiently carrying out the program and for the collection and compilation of the accumulated data rests chiefly on its secretary acting with the related personnel of the Association headquarters under the direction of the General Manager.

Therefore we are of the opinion that the work which the Association may most efficiently and fruitfully carry on in the standardization of hospitals is provided for in the bureau already created in the office and under the jurisdiction of the Council on Medical Education. This opinion is justified also by the fact that the present industrial unrest with the increasing cost of labor, in all departments, the high price of the necessities of life and of the materials needed in productive commercial pursuits, demand the utmost economy, consistent with efficient production in the management of the affairs of the Association.

In conformity with the statements made above, the Board of Trustees recommends to the House of Delegates the change in name of the "Council on Medical Education" to the "Council on Medical Education and Hospitals." In view

of the fact that no existing organization has the legal power to standardize hospitals, the Board recommends that the House of Delegates direct the Council on Medical Education to substitute the term of "approved hospitals" for that of "standardized hospitals" in its official reports and publications.

In the addenda are statistics in tabular form covering the circulation of THE JOURNAL, etc.; the treasurer's statement, and the complete auditor's report. No reference is here made to the work of the various councils—the Council on Health and Public Instruction, the Council on Scientific Assembly, the Judicial Council and the Council on Medical Education—as these Councils will make complete reports direct to the House of Delegates.

Respectfully submitted,

FRANK BILLINGS.	A. R. MITCHELL.
THOMAS McDAVITT.	H. BERT ELLIS.
D. CHESTER BROWN.	OSCAR DOWLING.
WENDELL C. PHILLIPS.	W. T. SARLES.
PHILIP MARVEL.	

Addenda to Trustees' Report

SUBSCRIPTION DEPARTMENT

The regular weekly issue of THE JOURNAL of the American Medical Association from Jan. 1, 1919, to Dec. 31, 1919, inclusive (52 issues), was as follows:

January 4.....	68,466	July 5.....	72,163
January 11.....	67,738	July 12.....	72,292
January 18.....	67,053	July 19.....	73,113
January 25.....	67,828	July 26.....	72,169
	271,085		289,737
February 1.....	67,979	August 2.....	72,182
February 8.....	68,617	August 9.....	72,769
February 15.....	68,500	August 16.....	72,615
February 22.....	68,872	August 23.....	72,692
	273,968	August 30.....	72,333
March 1.....	68,806		362,591
March 8.....	69,120	September 6.....	72,259
March 15.....	69,062	September 13.....	72,436
March 22.....	69,672	September 20.....	72,473
March 29.....	72,627	September 27.....	73,737
	349,287		290,905
April 5.....	73,300	October 4.....	73,233
April 12.....	70,425	October 11.....	73,797
April 19.....	71,488	October 18.....	74,026
April 26.....	72,530	October 25.....	73,906
	287,743		294,962
May 3.....	72,649	November 1.....	74,753
May 10.....	76,312	November 8.....	74,227
May 17.....	72,610	November 15.....	75,043
May 24.....	71,715	November 22.....	76,092
May 31.....	73,183	November 29.....	76,539
	366,469		376,654
June 7.....	72,260	December 6.....	77,022
June 14.....	72,112	December 13.....	77,016
June 21.....	72,449	December 20.....	76,935
June 28.....	72,157	December 27.....	76,999
	288,978		307,972
Total	3,760,351		
Weekly average.....	72,314		

PERCENTAGE OF PHYSICIANS RECEIVING THE JOURNAL

The following table gives the number of physicians in the United States (based on the sixth edition of the American Medical Directory), the number receiving THE JOURNAL, and the approximate percentage in each state. It does not include copies sent to physicians in the United States Army, the United States Navy or the Public Health Service:

State	Number Receiving JOURNAL	Physicians in State 6th A. M. Dir.	Approx. Percentage 6th A. M. Dir.
Alabama	758	2,530	29
Arizona	262	333	78
Arkansas	638	2,587	25
California	3,491	5,929	61
Colorado	979	1,713	57
Connecticut	1,071	1,701	63
Delaware	129	264	49
District of Columbia...	639	1,237	51
Florida	510	1,296	39
Georgia	1,084	3,442	31
Idaho	239	458	52
Illinois	6,961	11,095	62
Indiana	1,894	4,765	39

State	Number Receiving JOURNAL	Physicians in State 6th A. M. Dir.	Approx. Percentage 6th A. M. Dir.
Iowa	2,037	4,004	50
Kansas	1,230	2,668	46
Kentucky	1,102	3,483	31
Louisiana	786	2,060	38
Maine	481	1,179	40
Maryland	1,217	2,268	53
Massachusetts	3,469	5,926	58
Michigan	2,402	4,598	52
Minnesota	1,706	2,566	66
Mississippi	507	1,975	26
Missouri	2,355	6,063	38
Montana	336	661	51
Nebraska	1,103	1,960	56
Nevada	81	159	51
New Hampshire	365	666	55
New Jersey	1,777	3,153	56
New Mexico	202	456	45
New York	8,452	15,877	52
North Carolina	878	2,257	34
North Dakota	400	604	66
Ohio	3,751	8,039	46
Oklahoma	872	2,672	33
Oregon	545	1,157	47
Pennsylvania	6,608	11,495	57
Rhode Island	435	752	58
South Carolina	565	1,433	40
South Dakota	406	695	60
Tennessee	1,065	3,481	30
Texas	1,965	6,246	31
Utah	303	488	62
Vermont	258	653	38
Virginia	1,068	2,552	42
Washington	881	1,698	52
West Virginia	764	1,759	43
Wisconsin	1,703	2,817	60
Wyoming	151	254	60

The number of Fellows and subscribers on THE JOURNAL mailing list each year since, and including, 1900, is indicated below. Libraries, colleges, advertisers, exchanges, etc., are not included:

Year	Fellows	Subscribers
January 1st, 1900	8,445	4,633
January 1st, 1901	9,841	8,339
January 1st, 1902	11,107	10,795
January 1st, 1903	12,553	12,378
January 1st, 1904	13,899	14,674
January 1st, 1905	17,570	15,698
January 1st, 1906	20,826	17,669
January 1st, 1907	26,255	20,166
January 1st, 1908	29,382	20,880
January 1st, 1909	31,999	18,983
January 1st, 1910	33,032	19,832
January 1st, 1911	33,540	20,504
January 1st, 1912	33,250	21,620
January 1st, 1913	36,082	19,863
January 1st, 1914	39,518	19,751
January 1st, 1915	41,254	20,430
January 1st, 1916	41,938	22,921
January 1st, 1917	42,744	22,156
January 1st, 1918	43,420	23,117
January 1st, 1919	42,366	24,687
January 1st, 1920	44,340	30,032

During 1919 there were transferred to Fellowship 2,118 from the subscription department, and 20 from THE ARCHIVES OF INTERNAL MEDICINE, THE ARCHIVES OF NEUROLOGY AND PSYCHIATRY and the AMERICAN JOURNAL OF DISEASES OF CHILDREN—a total of 2,138. Four hundred and twenty-one were discontinued as Fellows, but continued as subscribers.

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the year ended December 31, 1919.

ASSOCIATION RESERVE FUND

Reserve Fund as at December 31, 1918	\$208,727.38
Investments	63,242.75
Interest—Bonds	\$10,959.96
Interest—Uninvested	256.33
	11,216.29
Reserve Fund as at December 31, 1919	\$283,186.42
Balance as at December 31, 1919	\$ 265.34

TREASURER'S GENERAL ACCOUNT
DAVIS MEMORIAL FUND

Balance as at December 31, 1918	\$ 3,651.80
Interest received for the year	110.36
Balance as at December 31, 1919	\$ 3,762.16

AUDITORS' REPORT

CHICAGO, January 19, 1920.

To the Board of Trustees,
American Medical Association, Chicago, Illinois.
Dear Sirs:

In accordance with your instructions, we have audited the accounts of the American Medical Association for the year ended December 31, 1919, and now submit our report thereon.

SURPLUS ACCOUNT

The surplus at the beginning of the year amounted to \$471,661.50, and the surplus at the end of the year amounted to \$456,839.39, a decrease of \$14,822.11, which may be accounted for as follows:

Transfer to Reserve Fund	\$ 63,621.71
Less Net Gain on Operations	48,799.60
Net Decrease in Surplus	\$ 14,822.11

The net decrease in surplus is spread over the assets and liabilities as follows:

Decrease in Assets:	
Current Working Assets (Increase)	\$ 11,683.64
Prepaid Expenses (Decrease)	1,713.69
	\$ 9,969.95
Less Decrease in Property and Equipment	20,908.89
	\$ 10,938.94
Add Increase in Liabilities:	
Advance Payments on Publications	\$ 3,524.63
Increase in Accounts Payable	358.54
	3,883.17
Net Decrease in Surplus as above	\$ 14,822.11

FINANCIAL POSITION

The financial position of the Association as at December 31, 1919, is shown in the following statement:

ASSETS:	BALANCE SHEET AS AT DEC. 31, 1919.
Property and Equipment at Cost, less Depreciation:	
Real Estate and Buildings	\$209,109.68
Machinery	48,850.62
Type and Metals	7,577.81
Furniture and Equipment	13,843.63
Chemical Laboratory	1,650.26
Library	817.95
	\$281,849.95
Reserve Fund Investment	283,186.42
Current and Working Assets:	
Inventory of Materials, Supplies and Work in Process	\$52,621.41
Accounts Receivable:	
Advertising	\$39,544.94
Cooperative Medical Advertising Bureau	5,633.36
Reprints	2,738.24
Miscellaneous	63,407.96
	111,324.50
Directory	510.54
Cash in Bank and on Hand	24,788.77
	\$189,245.22
Prepaid Expenses:	
Insurance	\$ 611.31
Session — 1920	293.19
	904.50
Total	\$755,186.09
LIABILITIES:	
Accounts Payable:	
Cooperative Medical Bureau	\$ 6,736.23
Sundry	112.87
	6,849.10
Advance Payments on Publications	8,311.18
Association Reserve Fund	283,186.42
Surplus	456,839.39
Total	\$755,186.09

The balance sheet submitted, in our opinion, correctly reflects the financial position of the Association as at December 31, 1919, subject to provision for accrued interest, taxes and "Journal" subscriptions paid in advance, less subscriptions and memberships due and unpaid. We examined the securities representing the investment of the Association Reserve Fund, and found them in order. We verified the cash on hand by actual count and the cash in bank by certificates obtained from the Association's bankers. The following is a statement of the cash balances:

Continental and Commercial National Bank	\$ 21,331.06
First Trust and Savings Bank (Treasurer's Account)	265.34
Cash on Hand	3,042.37
Cashier's Fund	150.00
Total	\$ 24,788.77

OPERATIONS

The operations of the Association for the year ended December 31, 1919, are shown in the following statements:

INCOME AND PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED
DECEMBER 31, 1919

JOURNAL:

INCOME:

Fellowship Dues and Subscriptions.....	\$357,684.78
Advertising	395,598.38
Jobbing	13,291.14
Books	12,835.69
Reprints	4,589.67
Insignia	2,251.40
Miscellaneous Sales	8,627.33
Interest	2,783.98
Net Recoveries on Bad Debts.....	125.79

\$797,788.16

Expenses, Schedule "1"\$618,311.83

Net Income from Journal.....\$179,476.33

MISCELLANEOUS INCOME:

Cooperative Advertising Bureau.....	\$ 195.56
American Journal of Diseases of Children.....	784.37
Archives of Internal Medicine.....	1,692.82
Rent, Building "B".....	300.00

2,972.75

\$182,449.08

Association Expenses—Schedule "2".....\$71,503.83

Less Rentals 3,720.00

\$67,783.83

Miscellaneous Expenses—Schedule "3"..... 65,865.65

133,649.48

Net Gain on Operations.....\$ 48,799.60

JOURNAL EXPENSES—SCHEDULE "1"

Wages and Salaries.....	\$231,529.14
Editorials, News and Reporting.....	9,370.11
Paper—Journal Stock	217,625.86
Paper—Miscellaneous	7,767.81
Electrotypes	11,173.05
Binding	423.72
Ink	6,438.17
Postage—First Class	19,699.26
Postage—Second Class	32,738.27
Journal Commissions	8,232.05
Collection Commissions	1,155.73
Discounts	14,279.05
Express and Cartage.....	3,295.22
Exchange	3,179.25
Office Supplies	1,704.33
Telephone and Telegraph.....	1,005.96
Office Jobbing	5,311.67
Miscellaneous	11,951.10
Power and Light	3,992.66
Fuel	3,511.15
Factory Supplies	6,447.32
Repairs and Renewals—Machinery.....	4,486.33

\$605,317.21

Depreciation:

Property and Equipment	Rate	Amount
Machinery	15%	\$8,620.69
Furniture and Equipment.....	15%	1,836.59
Factory Equipment	15%	559.33
Type	15%	616.44
Metal	20%	1,361.57

12,994.62

\$618,311.83

ASSOCIATION EXPENSES—SCHEDULE "2"

Association	\$ 19,682.81
Health and Public Instruction.....	10,288.24
Pharmacy and Chemistry and Chemical Laboratory.....	18,760.70
Medical Education	13,081.87
Organization	2,627.02
Therapeutic Research	1,045.91
Laboratory Depreciation—10%	183.36
Building "A" Expense	131.27
Session 1919	5,702.65

Total\$ 71,503.83

MISCELLANEOUS EXPENSES—SCHEDULE "3"

Building "B" (New) Depreciation 5%.....	\$ 7,973.98
Building ("A" old to be razed).....	14,379.93
Biographical Expense	17,983.32
Insurance and Taxes.....	6,214.26
Legal and Investigation Expense.....	3,500.00
Building "B" Maintenance.....	1,334.56
Cumulative Index	1,787.12
Depreciation Library—20%	204.49
Archives of Neurology and Psychiatry.....	2,695.40
Spanish Edition, Journal A. M. A.....	9,792.59

Total\$ 65,865.65

The audit embraced an exhaustive test of the various sources of income and the verification of the cash disbursements with proper vouchers on file.

We are pleased to report that we found the accounting records to have been kept in the usual good order and that every facility was afforded us for the proper conduct of the audit.

Yours truly, MARWICK, MITCHELL, PEAT & Co.

Report of the Judicial Council

Dr. M. L. Harris, Illinois, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Report of Officers:

To the Members of the House of Delegates of the American Medical Association:

There have been no questions referred to the Council for adjudication during the past year. The two matters remaining in the hands of the Council from the last House of Delegates are the revision of the Constitution and By-Laws, and the further consideration of the feasibility of establishing some system of old age or invalidity insurance for members of the profession.

The Constitution and By-Laws as revised are herewith submitted.¹ At first glance it may seem that many radical changes have been made, but on closer investigation it will be found that such is really not the case. During the past few years of the evolutionary development of the Association, quite a number of changes have taken place in the character of the work done as well as in the manner of doing it, and some of these changes, although fully recognized, have not been clearly set forth in the By-Laws.

The Constitution, likewise, has failed to state correctly the character and form of the organization. The opportunity has been taken, therefore, to define the organization as it really is and has been since the reorganization in 1901. It will be noted that the verbiage has been changed in many places for the purpose of clarification and to eliminate ambiguity and duplications, but on comparison it will be found that there have been no changes made in principles or fundamentals.

Taken up more in detail, the first change noted in the Constitution is in the definition of the organization. The word "federacy," as defined in the American Dictionary and Cyclopædia, expresses correctly the character of the organization; hence this word has been used in defining it. Since the reorganization the Association has been a federacy, yet the fact has never been clearly set forth in the Constitution.

The objects of the Association have been expressed in the broadest and simplest manner possible. By omitting to mention a few of the things contained in the old Constitution under the title "Objects," we do not by implication eliminate a great many more things which the Association may do but which are not mentioned. In defining the objects of an association such as this, it is desirable to state them as briefly and as broadly as possible. The constituent associations and component societies are defined and the difference between members of the American Medical Association and Fellows of the Scientific Assembly made clear. The composition of the House of Delegates, together with its powers, are set forth, and the general officers of the Association defined.

There have been no material changes in the Scientific Assembly or the sections. No changes have been made in the section on "Funds," except to shorten it up slightly; likewise no changes in the method of amending the Constitution.

Concerning the By-Laws, it will be found that many paragraphs which were but duplications have been eliminated; likewise some sections which were already set forth in the Constitution and hence were but repetitions. Most of these are apparent at a glance, and as they add nothing to nor take anything from the present By-Laws, need not be further elaborated. There have been some changes made in the verbiage without changing the sense where it seemed that by so doing the meaning could be clarified.

As there are many points which are common to all of the standing committees or councils, these have all been grouped

1. These appear in the official handbook of the House of Delegates.

together to save repeating them under each council, thus materially shortening the sections on councils.

Much thought has been given to rewording the Constitution and By-Laws and it is felt that the changes made correctly express the conditions as they exist and that these instruments are now brought up to date.

OLD AGE AND INVALIDITY INSURANCE

During the past year the Council has been collecting data on the subject of old age and invalidity insurance for members of the association. A brief questionnaire was sent to the secretary of every county medical society in the organization. The questionnaire asked for information as to the number of physicians in the county dependent on financial aid and as to how many of that number were members of the county medical society: the number over 65 years of age dependent because of age, with the age of each, if known; and the number under 65 dependent because of physical disability, with the cause of physical disability, if known. Reports were received from every state in the Union, and the reports covered 53.48 per cent. of the total number of physicians in the entire country, or 77,083 of the 144,116, the estimated total number of physicians in the country. One hundred and fifty-six were reported to be dependent on financial aid; 120 on account of old age, and thirty-six on account of physical disability. Only 42,824 of the 77,083 physicians reported on are members of the American Medical Association, and of this number seventy-seven or less than 0.2 per cent. were dependent. This gives an estimated number of 145 dependents out of a total membership of 81,239. There were no dependents reported in twenty-eight states, including the District of Columbia. Georgia heads the list with the largest number, namely sixteen out of 896 reported on, or 1.78 per cent. Rhode Island's report covered 100 per cent. of the members, while that of New York covered only 23 per cent., statistics from the city not being obtainable.

In studying these statistics, as incomplete as they may be, one is impressed with the remarkably small number of dependent physicians. It is quite likely that the number of physicians over 65 and unable to practice by reason of age and who have not been able to save a competence for their old age is much greater than that stated, but they are living with members of the family and hence not dependent on charity. The number under 65 who are dependent by reason of physical disability likewise seems rather low, and no doubt a more searching inquiry would increase the number of dependents due to old age as well as to physical disability. As so many of the states failed to report any dependents, even where a majority of the members were covered by the report, it would seem to the Council that the question of rendering financial aid should rest with the state organization and be treated as a local matter.

Respectfully submitted,

M. L. HARRIS, Chairman,	RANDOLPH WINSLOW,
I. C. CHASE,	WILLIAM S. THAYER,
H. A. BLACK,	A. R. CRAIG, Secretary.

Report of the Council on Health and Public Instruction

Dr. Victor C. Vaughan, Michigan, Chairman, presented the report of the Council on Health and Public Instruction, which was referred to the Reference Committee on Reports of Officers.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

ACTIVITIES DURING THE YEAR

Owing to the early date of the meeting this year, the time covered by the Council report is from May 1, 1919, to March 1, 1920, a period of ten months.

REORGANIZATION OF FEDERAL PUBLIC HEALTH ACTIVITIES

In its report for 1919, the Council stated that one of the more urgent needs in the present public health situation was

increased knowledge regarding organized and official public health activities as a basis for constructive legislation. This is a work for which the Council is especially well fitted. In its report for 1914, the Council said, regarding the need of a careful study of the public health work of the federal government with a view to determining exactly what the federal government is doing and can do for public health: "The need for such an investigation hardly needs more than to be stated. The American Medical Association stands unreservedly pledged to the securing at the earliest possible moment of an adequate national health organization. In the discussion of this subject . . . a lack of accurate and complete information regarding present health activities on the part of the federal government has been apparent. Extreme claims have been made on both sides, one set of advocates asserting that the United States government was doing more for public health than any other national government in the world, the other asserting that practically nothing was being done by our government which could compare with the health activities of European nations. Such a condition is not credible to a scientific organization."

"This statement is true today. In addition, no careful study has ever been made, from a legal standpoint, of the exact limitations of the federal government along public health lines. What can the national government do under the constitution for public health? No one is today in a position to answer this question authoritatively. As a result, bills are drafted and measures proposed that would probably, if adopted, be unconstitutional, while such measures as the Harrison Narcotic Law, a law intended solely for the improvement of public health conditions in a broader sense, are passed ostensibly as revenue measures and are later by amendment converted into revenue producing measures with serious injustice and inconvenience to law-abiding physicians. If Congress has the power to regulate the sale of habit-forming drugs for the public good, then it is not necessary for Congress to pass such measures under the guise of revenue laws which after their passage are distorted and misconstrued by federal officials into unfair and inequitable revenue producing measures. This country will never have a federal department of public health such as has been advocated rather vaguely for fifty years past until the public health functions and powers of the federal government under the constitution have been definitely determined. Two questions must be answered: First, what can the federal government do for public health; and second, what is the federal government now doing for public health. These questions are not at present being considered by any other organization, yet their solution is fundamental to the development of public health in this country. They are problems to which the American Medical Association can fittingly and properly direct its attention. Having secured some authoritative information on these two questions, we will then be able to put the influence of the American Medical Association behind an intelligent movement for a national health organization."

Immediately preceding the Atlantic City session, the Secretary was asked to meet with the Executive Committee of the Association of State Health Officers for the purpose of discussing the reorganization of federal public health work. Later at a joint meeting of the Council and the Executive Committee of the State Health Officers an agreement was made to cooperate in endeavoring to secure a reorganization of federal public health agencies. A joint committee, consisting of the Chairman, the Secretary and Dr. W. S. Rankin from the Council, and Dr. S. J. Crumrine, Secretary of the State Board of Health of Kansas, Dr. C. St. Clair Drake, Director of Public Health in Illinois, and Dr. Allen W. Freeman, Commissioner of Health in Ohio, representing the Association of State Health Officers, was appointed to coordinate the work of the two bodies. After considerable correspondence, a conference was held at the Association headquarters in Chicago, July 28-30, 1919, at which were present the members of the Joint Committee, other members of the Executive Committee of the Association of State Health Officers and advisers on legal and technical questions.

After three days spent in discussing the details of the proposed reorganization and the essential provisions of a bill for this purpose, it was recognized that it was not possible to draft a satisfactory bill for the reorganization of the federal public health work until more information was available regarding the present public health activities of the federal government, what work was being done in the different departments, what appropriations were being made, how much was being spent, what was being accomplished, etc. It was realized that it would be impossible to draft a workable bill without authoritative and official information on these points. The possibility of the Council undertaking a survey of federal public health work was then discussed. Following the adjournment of the conference, this discussion was carried on by correspondence. Continued discussion of it led to the realization of the fact that any such survey carried on by private or unofficial agencies would neither be constructive nor authoritative and that such a study could be made only by a commission created by Act of Congress, authorized and empowered to summon before it the heads of the various bureaus and departments of the federal government, to call for official reports, estimates, records of expenditures, etc., and to carry on a systematic, official survey of the entire health work being done by the federal government, what reorganization and rearrangement was possible and advisable and how this could best be brought about. The Secretary and Dr. C. St. Clair Drake were appointed a Subcommittee to prepare a measure for accomplishing this purpose. Careful study of the situation in Washington, together with an inquiry into the legal and parliamentary questions involved, showed that the best form of securing the end sought was by means of a joint concurrent resolution. Such a resolution was accordingly drafted and introduced into the Senate by Hon. Joseph E. France of Maryland, as Senate Joint Concurrent Resolution 14, and into the House by Hon. E. E. Denison of Illinois as House Joint Concurrent Resolution 33. The resolution provides for a joint committee to consist of three members of the Senate and three members of the House "to make a survey of and report on those activities of the several departments, divisions, bureaus, offices and agencies of the Government of the United States which relate to the protection and promotion of the public health, sanitation, care of the sick and injured and the collection and dissemination of information relating thereto." The Committee is directed to report to Congress

1. The statutory powers and duties conferred by the Congress on any department, division, bureau, office or agency of the United States Government to carry on any work pertaining to the conservation and improvement of the public health, together with any rules and regulations authorized or promulgated thereunder;

2. The organization now existing in the Federal Government for the purpose of carrying out these powers and duties, together with the personnel of, appropriations for, and expenditures by each department, division, bureau, office, and agency during the fiscal year ended June 30, 1919;

3. The coordination now existing between said departments, divisions, bureaus, offices, and agencies, together with any conflict, overlapping, or duplication of powers, duties, functions, organization, and activities;

4. The cooperation and coordination now existing between the Government of the United States and the government of the several States or extragovernmental agencies for the conservation or improvement of the public health;

5. Such further information as such committee may deem proper;

6. Such recommendations as such committee may deem advisable to offer for the improvement of the public health work of the United States Government.

This resolution, which is short and easily understood, provides for the first time for a systematic study of the public health activities of the federal government as a basis for reorganization. The resolution passed the Senate December 20. It was, at the time this report was written, still in the

Committee on Rules in the House, although there is a good prospect of its being adopted by the House at an early date.

At the New Orleans session of the American Public Health Association in October, 1919, one afternoon session was devoted to the discussion of this question, following which the American Public Health Association adopted a resolution unanimously endorsing the action of the joint committee, urging the passage of the resolution by Congress and authorizing the appointment of a committee to represent the American Public Health Association and to cooperate with the joint committee in securing the passage of this resolution. The committee appointed by the President of the American Public Health Association consisted of Dr. Haven Emerson, New York City, Dr. Charles V. Chapin, Providence, Rhode Island, and Mr. Lee K. Frankel of New York.

The formulation of this resolution providing for a congressional survey of federal public health work and the submission of recommendations for the reorganization, coordination and improvement of federal public health activities, constitutes for the first time in the history of this movement a definite, sound and practical program. In the furtherance of this program, the Council has enlisted the cooperation of the American Public Health Association and the Association of State Health Officers. The joint committee which has been created forms an effective means whereby the combined influence of the three organizations represented can be utilized for constructive public health work. The Council feels that for the first time in the history of the Association we are on the right track. It is hoped that the concurrent resolution may pass the House during the present session and the committee may be appointed to carry on its survey during the summer recess of Congress so as to report early in December. If this is not possible, then there are gratifying prospects of the passage of this resolution as soon as the new Congress convenes under a new administration.

MEDICO-LEGAL WORK

In its report for 1919, the Council made the following statement regarding its previous work and plans on medicolegal lines:

"Another task taken up by the Council was a study of the legal relations and responsibilities of physicians and the legal aspects of public health. This field, for obvious reasons, has never been carefully studied either by physicians or lawyers. It offers no prospect of financial reward to lawyers and it is only of interest to physicians so far as their personal interests are involved in some specific case. The Secretary has for many years collected a large amount of material on this subject. One volume of a proposed four-volume set was issued in 1915, namely, "Digest of Supreme Court Decisions on Medical Practice Acts," in which were indexed 752 court decisions on this subject, 396 of which were abstracted. Work was begun and nearly completed on the second volume, "A Digest on the Medicolegal Relations of Physicians," for which approximately 1,800 supreme court decisions were collected and abstracted. This work can probably be completed and prepared for publication in a few months. In the field of malpractice, there are probably 1,500 cases on record which have gone to courts of last resort for opinions, while on the fourth subject, "The Powers and Duties of State Boards of Health," there are approximately 800 decisions on record. This work should be completed and published, as it comprises material that is not available in any other form nor through any other agency."

During the past year the second volume of the medicolegal series on "Medicolegal Relations of Physicians" has been completed and is now being prepared for publication. This digest contains 3,000 Supreme Court decisions on all the personal, legal relations of physicians except malpractice and will be of great value to the profession in affording authoritative information on many legal questions of vital importance to physicians. Plans are now being made for the compilation of the third volume on "Powers and Duties of Health Officers" which the growing work of municipal, county and state health departments has rendered imperative.

VITAL STATISTICS LEGISLATION

In its report for 1919, the Council summarized the history of vital statistic legislation in this country showing that, in 1906, at the time that the Committee on Medical Legislation, the forerunner of the Council on Health and Public Instruction, took up this work in cooperation with the Division of Vital Statistics of the Bureau of the Census, there were only ten states in the Union that had any effective laws for the registration of deaths and only eight in which there was any birth registration, and that through the formulation of the model bill on vital statistics and the cooperation of the various organizations interested, the model bill had been adopted in the past fourteen years in all of the states except even, viz., Alabama, Arizona, Delaware, Iowa, Nevada, South Dakota and West Virginia. During the past year, Alabama and Delaware have adopted the model law, leaving now only five states which are as yet without satisfactory legislation on this subject. These are Arizona and Nevada, in which no satisfactory system of registration has ever existed; Iowa and West Virginia, in which the old obsolete system of registration through county clerks still persists; and South Dakota, in which the Secretary of the State Historical Society is the Registrar of Vital Statistics which are collected and recorded as historical rather than public health data. In Arizona and Nevada, the model law should be adopted at the next session of the legislature. In the other three states such amendments to the existing law should be adopted as will render these states eligible to admission to the Registration Area of the United States Census. This work, which is absolutely essential for any modern public health work, should be completed at the earliest possible moment so that the Registration Area for Births and Deaths in this country will include the entire country.

The House of Delegates has repeatedly endorsed the model law and has repeatedly urged its adoption on the various state associations. This support has been of the greatest assistance in securing the passage of these laws in the different states. In order that this work may be completed, the Council requests the House of Delegates to reaffirm its endorsement of the model law and to urge the state medical associations in Arizona, Iowa, Nevada, South Dakota and West Virginia to take the lead in educating public opinion in these states and to endeavor to secure at the next session of their legislature the adoption of such measures as will bring their states into the Registration Area in harmony with the rest of the country.

COMMITTEE ON PROTECTION OF SCIENTIFIC RESEARCH

The Committee on Protection of Scientific Research which has done such excellent work in the past in educating the public and in preventing the passage of legislation restricting scientific investigation has during the past year done one of the best pieces of work in its record. Senate Bill 1258, introduced by Senator Myer of Montana, while apparently only intended to forbid the use of dogs for experimental purposes in the District of Columbia, was in reality an opening wedge for general restrictive legislation. The bill was referred to the Judiciary Committee of the Senate and by this Committee was referred to a subcommittee consisting of Senator Norris of Nebraska, Chairman, Senator Colt of Rhode Island and Senator Ashurst of Arizona. Hearings covering several days were held in Washington the first week of November, 1919. The usual lobby of antivivisectionists, officers of antivivisection societies and others was present to urge the passage of the bill. The scientific side of the case was presented by an imposing array of distinguished scientific men under the leadership of Dr. Walter B. Cannon of Harvard Medical School. It is doubtful if any discussion of this question has ever been more brilliantly or convincingly conducted. The full report of the hearing published by the committee forms an interesting collection of scientific data as well as an exposition of the misstatements and fallacious arguments of the antivivisectionists. The bill has never been reported out of committee.

Soon after the organization of the original Committee on Defense of Scientific Research, a set of rules for the care of

animals in scientific laboratories was formulated, printed and copies distributed to each medical college and scientific laboratory in the country with the request that they be posted and enforced. This voluntary action on the part of the medical profession for the regulation of any possible abuses in animal experimentation has proved one of the strongest arguments against the adoption of special legislation for this purpose. Although these rules are still being enforced, the length of time that has elapsed since their distribution made it advisable in the opinion of the Committee to print a new edition of the rules and send them out to all scientific laboratories. Copies of these rules with a circular letter have been sent to each of the eighty-five medical colleges and eleven additional laboratories. Requests for additional copies have been received from many of the laboratories and the rules have been posted and are being enforced now in practically all of the scientific laboratories throughout the country.

In addition to the series of twenty-eight pamphlets on Protection of Scientific Research prepared by the Committee and issued by the Council which has now become a standard series on this subject, two other pamphlets are now in course of preparation, one on the value of animal experimentation in the study of nutrition by Professor McCollum of Johns Hopkins University, and the other by Doctor Cannon, the Chairman of the Committee, summarizing the entire series and presenting in a single, concise pamphlet the entire case for scientific research, with special reference to the question as to why the dog is essential to scientific investigation.

COMMITTEE ON CONSERVATION OF VISION

At the annual meeting of the Council held on October 4, 1919, the following Committee on Conservation of Vision was appointed: Dr. Cassius D. Wescott, Chairman, Chicago; Dr. George S. Derby, Boston; Dr. George Edmund de Schweinitz, Philadelphia; and Dr. John E. Weeks, New York City. In addition to the twenty pamphlets now on hand forming the popular series on Conservation of Vision, two others are now under consideration, one on crossed eyes and one on cataract. The Chairman of the Committee and the Secretary of the Council have held several conferences with a committee from the American Optical Association with a view to the inauguration of a campaign for the education of the public on conservation of vision and the detection and correction of errors of vision, especially among schoolchildren and industrial employees. This plan which is developing rapidly will, if consummated, be financed by the American Optical Association and directed by a committee on which the Council and its Subcommittee will be represented.

COMMITTEE ON COOPERATION WITH THE NATIONAL EDUCATION ASSOCIATION

This Committee which is at work on health problems in education was reorganized at the October meeting of the Council by the appointment of the following Committee: Dr. John M. Dodson, Chairman, Chicago; Dr. R. W. Corwin, Pueblo; Dr. George W. Goler, Rochester, N. Y.; Dr. Edward Jackson, Denver; and Dr. Henry L. K. Shaw, Albany, New York. Dr. Dodson, Dr. Corwin and Dr. Goler attended the annual meeting of the National Education Association in Cleveland on February 24. A fourth pamphlet in the series prepared by this Committee on the results of health conservation work in the rural schools is now in preparation.

COMMITTEE ON SOCIAL INSURANCE

This Committee, appointed by the Council in 1915 to carry on a study of social insurance in its relation to the medical profession, presented reports to the House of Delegates at the annual sessions of 1916, 1917 and 1919. No report was presented in 1918 owing to the fact that Doctor Lambert, the Chairman of the Committee, was in service in France. The House of Delegates each year has approved of the report of the Committee, and has directed it to continue its work. The House of Delegates has not as yet seen fit to commit the Association to any positive position on this question, evi-

dently feeling that the time had not yet come for the Association going on record either for or against social insurance. Members of the House of Delegates, of course, understand that the House of Delegates is the only body under the Constitution and By-Laws of the Association that has any power or authority to adopt any policy or commit the Association to any opinion on this or on any other question. Its determination lies entirely outside the jurisdiction of the Council. Evidently this fact is not clearly understood by many of our members, inasmuch as in the last few months statements have appeared in several of our state journals either in the editorial or correspondence columns criticizing the Council for failure to take a positive position against social insurance. Such criticism, of course, is entirely unwarranted as it is not the function of the Council to formulate the policies of the Association.

The failure of the Davenport bill to pass the New York legislature leaves no state in which this question is at present up for discussion in any concrete form, while the growing opposition of physicians and the increasing attention given to it in professional circles will probably prevent the passage of social insurance bills in any state without the medical profession being thoroughly informed and prepared to participate in the discussion of them. The objects which the Council had in view in creating this Committee, viz., to arouse the medical profession to a discussion of this subject and to prevent the premature adoption of any such measures in this country as in England without the full knowledge of the medical profession, have evidently been accomplished.

MIDWINTER CONFERENCE

The regular Midwinter Conference on Public Health and Legislation was held at the Auditorium Hotel in Chicago on Thursday, March 4. Owing to the war, this was the first conference which the Council has held since 1917. In spite of this lapse of three years and of the fact that many state and municipal health officers were unable to attend on account of serious epidemics, the attendance was one of the largest and most gratifying that has been present at any of the conferences of the Council. Following the policy of making this Midwinter Conference a rallying point for other organizations, committees, councils, conferences, etc., an effort was made to concentrate as many meetings as possible in the week of the session. The Executive Committee of the State Health Officers, the Joint Committee of the Council, the State Health Officers Association and the American Public Health Association, the Executive Committees of the American Public Health Association and the National Tuberculosis Association and the National Association of Colleges and University Health Officers were all held in connection with the Conference. Plans are now under consideration for a more extensive Conference next year and for the centering of the greater number of our public health meetings and conferences at this time.

SPECIAL COMMITTEES

The Council desires to bring to the attention of the House of Delegates a growing tendency to relapse into the conditions which existed before the creation of the Council in regard to the appointment of special and independent committees. Previous to the organization of the Council, there had developed during a number of years many independent and overlapping committees, each of which was endeavoring to functionate separately and independently and each of which was asking for appropriations to carry on its work. In order to concentrate all of the public health and public relation functions of the Association under a permanent and responsible Council, the House of Delegates in 1910 created the Council on Health and Public Instruction which took over all of these conflicting and independent committees. In the last few years there have been created several independent and uncoordinated committees for special purposes, usually in response to a motion of resolution introduced by some member of the House often without careful consideration of its relation to the existing executive machinery of the Association. Special committees appointed in the

midst of the annual session are often hastily selected and without due consideration to the various factors deserving of recognition. Much better results are secured by the creation of such special committees as may be needed as subcommittees of one of the existing permanent boards or councils, selecting men carefully after due consideration to the needs of the situation. The Council, therefore, recommends that the House of Delegates, in taking action on subjects lying within the field of the Council, instead of creating special and independent committees, instruct the Council to appoint such committees and to inaugurate and carry on their work as a part of the Council activities.

INCREASED TAXATION UNDER THE HARRISON LAW

In its report for 1919, the Council called attention to the increased registration tax for physicians under the Harrison law which had been increased from one to three dollars. The Council pointed out that this law was enacted by Congress to carry out our international obligations in compliance with the recommendations of the Shanghai Commission on the Control of Opium Traffic; that it was extremely doubtful whether Congress had any authority under the Constitution to regulate the importation and sale of a drug so long as the object of the regulation was the improvement of the public health or moral status of the people; and that in order to give Congress jurisdiction on this subject, the Harrison law, like the Esch phosphorus bill, had been put in the form of a revenue measure. The American Medical Association and its Journal cooperated heartily and cheerfully in the enactment of this measure, in the hope that it would be of material value in restricting the use of narcotic drugs to legitimate purposes. The medical profession of the country also accepted the imposition of a tax and the inconvenience of registration as its contribution to the operation of the law and as necessary accompaniments of any practical plan for the control of illicit traffic in habit forming drugs. The object of the law is not and never has been the production of revenue. The revenue feature is incidental and secondary. Yet in the revenue bill for 1918 the license tax for physicians under the Harrison law was increased from one to three dollars. Estimating the number of physicians in the United States at 150,000, this increase of two dollars a year forms an unwarranted and inequitable tax on physicians of \$300,000 a year. A license law is no more effective with a three dollar license fee than with a one dollar fee. The only possible justification for the Harrison law is the public good. The expense of the operation of the law, therefore, should be borne by the public and not by a special tax levied on one particular class. While the increase in the tax on physicians might have been justified in 1918 as a war measure, now that the war is over there is no possible justification for its continuance. The Council, therefore, recommends that the House of Delegates record its emphatic disapproval of this exploitation of physicians and that it demand the reduction of the registration fee for physicians to a nominal amount for so long as the law remains in force.

REGULATION OF HABIT FORMING DRUGS

The Harrison law has now been in operation a sufficient length of time to afford a fair opportunity for determining its effectiveness. It must be admitted that it has failed of the purpose for which it was enacted, viz., the restriction of the use of habit forming drugs to legitimate purposes. While definite figures are lacking, it is estimated that there is at present imported each year into this country between four and five times as much opium as is needed for medical purposes. Reports indicate that efforts to enforce the law in the face of this oversupply of drugs have resulted in a marked increase in the illicit distribution of opium, morphin, heroin, cocain and other inhibited drugs, while the extortion of unfortunate victims of drug habits has been made possible by the illegal methods under which the traffic is necessarily carried on. The enormous profits of illegal traffic in drugs has led to systematic efforts to increase the number of prospective customers while the opportunities for profits due to the dishonest enforcement of the law in differ-

ent localities has led to blackmail and official corruption. The present situation is exactly the same that would have resulted if a federal law had been passed forbidding the use of alcoholic liquors but leaving their manufacture and distribution unrestricted. The attempt to regulate the use of habit forming drugs and to restrict their use to legitimate purposes by a license law has evidently failed. Nothing but continued failure and scandal can result so long as it is possible to produce and bring into this country each year many times the amount of these drugs needed for legitimate purposes. The only effective method of control is by the government, through the U. S. Public Health Service, being given complete control of the importation and distribution of habit forming drugs, the forbidding of their manufacture or importation by any private individual or firm, the ascertaining of the approximate amount needed each year for legitimate purposes, the importation of this amount under government control and its distribution to properly qualified and registered persons through the Public Health Service with the requirement of strict accountability for all drugs issued. The Council recommends that it be instructed to inaugurate an investigation into (1) the amount of narcotic drugs required for each year for legitimate purposes; (2) the amount of narcotic drugs now actually imported into the country; (3) the devising of effective methods by which these drugs under proper government supervision may be restricted to legitimate uses.

The tabulation of the educational material printed and distributed by the Council, together with the work done by the headquarters office, is submitted herewith:

PAMPHLETS PRINTED FOR DISTRIBUTION FROM APRIL 23, 1919, TO MARCH 16, 1920

Baby Welfare	1,000
Conservation of Vision Series	1,000
Minimum Health Requirements for Rural Schools.....	10 000
Protection of Research Series.....	2,000
Save the Babies	65,000
Sex Hygiene Series	24,000
Social Insurance Pamphlet XI	5,000
Summer Care of the Baby.....	16,000
What We Know About Cancer.....	18 200
What You Should Know About Tuberculosis.....	8,500
Why Should Births and Deaths Be Registered.....	10 000
Total	160,700
Anthropometric Tables	2,000
Record Sheets	2,000
Score Cards	10,000
Total	14,000

OFFICE WORK

Letters Received from April 23, 1919, to March 15, 1920.....	3,892
Letters Written from April 23, 1919, to March 15, 1920.....	4,442

SOURCES OF REQUESTS FOR INFORMATION

Source	Number
Attorneys	6
Boards of Education	5
Boards of Health	43
Clubs	5
Federal Departments	22
Hospitals, Sanitariums, etc.	23
Libraries	72
Ministers	27
Nurses	72
Other associations, organizations, etc.	58
Physicians	374
Publications	7
Universities, colleges, schools, etc.....	97
Young Mens and Young Womens Christian Associations	12
Miscellaneous	818
Total	1,641

Respectfully submitted,

VICTOR C. VAUGHAN, Chairman,
WALTER B. CANNON,
WATSON S. RANKIN,
MILTON BOARD,
HAVEN EMERSON,
FREDERICK R. GREEN, Secretary.

Report of Council on Medical Education

Dr. A. D. Bevan, Illinois, Chairman, presented the report of the Council on Medical Education, which was referred to the Reference Committee on Reports of Officers.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

The functions of the Council on Medical Education are: 1. To make an annual report to the House of Delegates on the existing conditions of medical education in the United States. 2. To make suggestions as to the means and methods by which the American Medical Association may best influence favorably medical education. 3. To act as the agent of

TABLE 1.—ENROLMENTS OF MEDICAL STUDENTS FOR SIX YEARS, SHOWING VARIATION IN NUMBERS BY CLASSES

College Session	Freshmen	Sophomores	Juniors	Seniors	Totals
1914-1915	3,373	3,919	3,675	3,864	14,891
1915-1916	3,582	3 094	3,559	3,727	14,022
1916-1917	4,107	3,117	2,866	3,674	13,764
1917-1918	4,283	3,521	2,893	2,933	13,630
1918-1919	3,104	3,587	3,272	3,089	13,052
1919-1920*	4,069	2,760	3,306	3,267	13,554

* Estimate.

The single line drawn through the table undercores the figures which show the lowest ebb in the enrolment in the respective classes following the adoption of higher entrance requirements. The smaller number of freshmen in 1918-19 was due to enlistments in the World War. While the figures for 1919-20 are estimated they are fairly accurate since reports from all but a few colleges were obtained.

TABLE 2.—CAPACITY OF MEDICAL SCHOOLS UNDER LIMITED ENROLMENTS

Medical Colleges	No. Colleges	Total Enrolment				Average Total Enrolment per 4 Yrs. College
		1st Yr.	2d Yr.	3d Yr.	4th Yr.	
Enrolments limited.....	16	1,136	1,121	1,151	1,151	4,559 285
Report highest capacity with efficiency:						
4-year colleges.....	31	2,222	2,109	2,063	2,056	8,450 273
2-year colleges.....	8	307	304	.....	.....	611 76
Estimated highest capacity with efficiency:						
4-year colleges.....	10	430	430	410	410	1,680 168
2-year colleges.....	3	65	65	.....	.....	130 43
Totals, Class A colleges...	68	4,160	4,029	3,624	3,617	15,430 227
Class B colleges:						
Capacity reported.....	5	240	240	240	240	960 192
Capacity estimated.....	5	135	135	140	140	550 110
Totals, Class B colleges...	10	375	375	380	380	1,510 151
Totals, A and B colleges...	78	4,535	4,404	4,004	3,997	16,940

the American Medical Association in its efforts to elevate the standard of medical education. Having these functions in mind, the Council desires to submit the following report:

I. PRESENT STATUS OF MEDICAL EDUCATION

In 1906, the United States had 162 medical schools, or over half the world's supply. The number has been reduced, largely by the merging of from 2 to 5 medical schools in each of various cities, until now there are 86. Although the number is reduced, the character has been greatly improved. Of the 86 now existing, 77 are regular or non-sectarian; 5 are homeopathic; 1 is eclectic and 3 are nondescript affairs, 2 of which are semi-osteopathic and the third is not recognized in its own state (Missouri).

Since 1906 the proportion of medical schools requiring college work for admission increased from only 4, or 3 per cent. of the 160 medical colleges, to 79 or 92 per cent. of the 86 colleges now existing. The changes in this respect are shown in Chart 1.

Through the reduction in the number of medical schools and the adoption of higher entrance requirements, a material

reduction in the number of medical students was expected. The total has been reduced from 28,142 in 1904 to 13,052 in 1919 but the quality of the students has been very largely improved.

During the present college session the enrolment is approximately 13,554 students, or about 500 more than were enrolled a year ago. As shown by Table 1, the lowest ebb in enrolments following the adoption of higher requirements has been passed and a rapid return to larger enrolments is to be expected.

EFFECT OF PRELIMINARY REQUIREMENTS ON STUDENT ENROLMENT

Early in the campaign for higher requirements of preliminary education some feared that medical schools would be unable to secure students. A reduced enrolment in the first session naturally followed the adoption of the higher requirements but in subsequent sessions, in all the better medical schools, enrolments have returned to normal proportions. The present enrolments in freshman classes in most schools greatly exceed those of the previous years. Furthermore, the enrolments in pre-medical classes show that still larger numbers will begin the study of medicine in the next two years. It is important, therefore, that only those be admitted who are well qualified to study medicine. Scholarships are being rapidly established so that few students need be barred because they are lacking in money.

The present enrolment in all medical schools based on returns from the majority of institutions is estimated at 13,554, an increase of 502 over the total enrolment in 1919. It is evident, therefore, that following the enforcement of higher standards for admission, the low mark in the number of matriculations has been passed, and that higher enrolments in subsequent years may be expected.

LIMITATION OF ENROLMENTS

The limitation of enrolments by some medical schools and the excessive numbers of premedical students have caused some alarm lest medical schools may not have room for all the well qualified students who apply. An investigation (see Table 2) shows that the 16 Class A medical schools which have limited their enrolments can care for 4,559 students. Thirty-nine medical schools report that their maximum capacity with efficiency of teaching would enable them to care for a total of 9,061 students. An estimate based on the inspection of 13 Class A medical schools from which no reports were received shows they can enroll and properly train altogether about 1,810 students. The 68 medical schools in Class A, therefore, could enroll without overcrowding 15,430 medical students or about 1,500 more than are at present enrolled (13,554 est.) in the 85 medical schools of the United States. By securing more teachers; by the enlargement of laboratories, and by the completion of college buildings already planned or in course of construction, the numbers of medical students who can be satisfactorily taught could be further increased to 17,000 or 18,000 students.

The existing medical schools, therefore, are more than adequate to meet present needs, and in future as the numbers of students may increase, ample provision can be made for them.

It is the duty of the better medical schools to enlarge their facilities so as to care for as many students as possible, since otherwise many well qualified students will be forced into poorer schools.

THE AMERICAN STANDARD OF MEDICAL EDUCATION

The standard of medical education as it has developed in this country, and which may be called the American standard consists of:

- (a) Two years of premedical college work.
- (b) Four years in an acceptable medical school, and
- (c) A year's internship in an approved hospital.

Of the 86 colleges, as shown in Chart 1, 78 now require for admission 2 years of college work in addition to a four-year high school education. The admission requirements to

medical schools in the United States are now on a par with those in other leading countries.

The Council's "Ideal Standard," adopted in 1905, urged medical schools to require for admission a year of college work, including courses in physics, chemistry and biology, this work to be obtained either in a college of arts and sciences or in the medical school. A special committee of the Council in 1907, however, found that most colleges of arts and sciences did not favor disarranging their schedules so to give in a single year three sciences which included laboratory work. Medical schools which were departments of universities proceeded rapidly to require two years of college work for admission. A few medical schools established premedical courses, but in no instance was the work given in a satisfactory

manner. It was soon evident that the Council's one-year requirement should be merely a stepping stone to the two-year standard. Since Jan. 1, 1918, therefore, in accordance with instructions from the House of Delegates in June, 1916, the requirement of two years of college work for admission has been an essential for the Class A rating. Only one medical school is now offering a premedical science course. All others are requiring that the work be taken in colleges of arts and sciences.

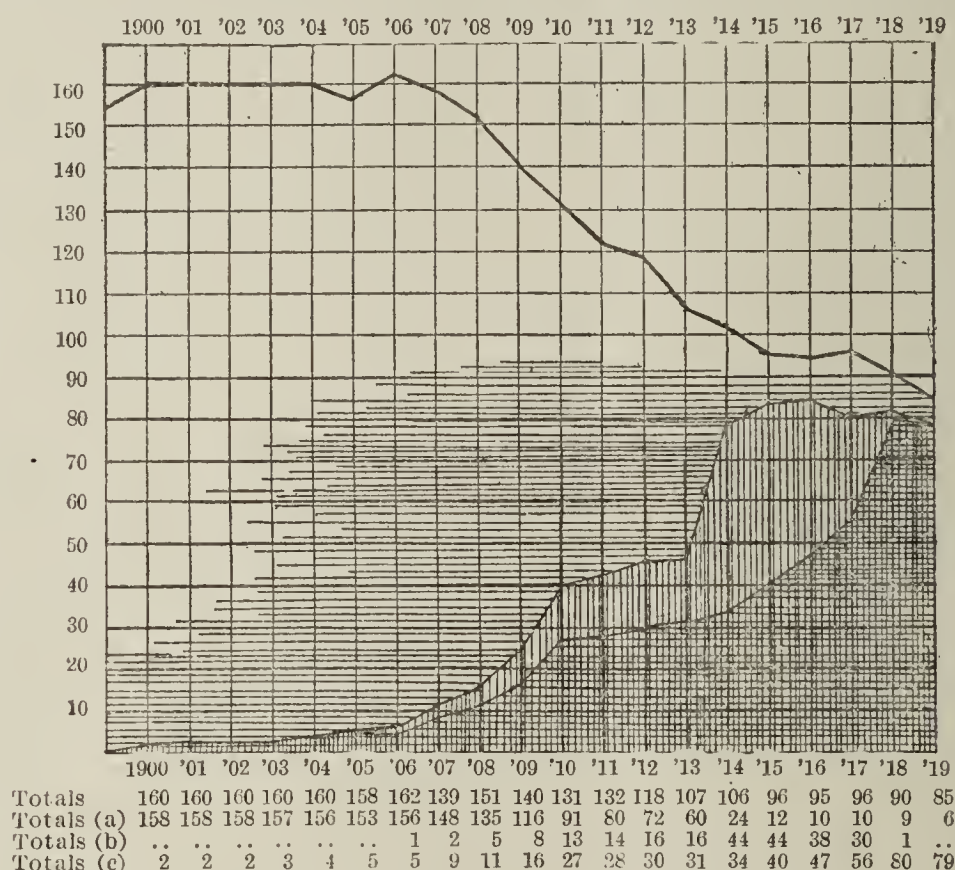
The advantages in requiring that the premedical work be taken in approved colleges of arts and sciences are:

(1) The physics, chemistry and biology are taught without reference to their special bearing on medicine. It is not known today what particular facts obtained in the study of these sciences will be most useful in the medical research of tomorrow.

(2) The quality of the premedical work is assured since it is obtained in reputable colleges of arts and sciences in the course leading to the degree of Bachelor of Science. This provides also a satisfactory standard for measuring the value of irregular or so-called "equivalent" courses.

CHART 1.—MEDICAL SCHOOLS AND ENTRANCE REQUIREMENTS

The heavy line at the top shows the total numbers of medical schools existing in the various years. The horizontal shading (indefinite) shows those requiring for admission a four-year high school education; the vertical shading those requiring one year of college work and the heavy shading those requiring two years of college work.



Figures show (a) those requiring for admission a high school education or less; (b) those requiring one year of college work; (c) those requiring two or more years of college work.

(3) The student is left free to make a final choice of his life work until he is best qualified to do so. He may have medicine in mind when he enters the university but he enters the classes working for the Science degree. He has a chance to compare notes with those studying for other callings and may find that he is better fitted for some other occupation or profession than medicine. If so, he can make the change without any loss of time (see Chart 2) since his premedical courses are equally acceptable toward other callings. Had he enrolled immediately in a premedical course of a medical school and then desired to change to some other profession it might be at the loss of one or more years spent in premedical work. This freedom of choice is of great importance since reports show that from 10 to 30 per cent. of "premedical" students change to some other calling before their two-year course is completed.

(4) Students now enter medical schools with the benefit of two years under the college influence and atmosphere, the contact with students in other departments, the social life, and the athletics, which are bound to affect their entire lives.

(5) The arrangement is a safeguard against medical cults. A student who, in a reputable college, has studied genuine science in his courses in physics, chemistry, and biology will seldom be misled by the fallacious claims advanced by unscientific cults.

The one disadvantage of the arrangement is the lack of uniformity in the courses in physics, chemistry and biology given in different colleges or universities. Efforts are now being made to correct this defect.

THE HOSPITAL INTERN YEAR

This part of the Council's educational standard, adopted in 1905, is largely taking care of itself. For many years a large majority of medical graduates have voluntarily secured internships in medical hospitals and the proportion has rapidly increased since

ten state licensing boards have required internship as an essential qualification for the license. These states are Pennsylvania, New Jersey, Alaska, Rhode Island, North Dakota, Washington, Illinois, Michigan, Iowa and Texas.

Eleven medical colleges have adopted the requirement of a fifth year to be spent by the intern in an approved hospital before the M.D. degree will be granted. Many more hos-

pitals are now seeking interns than can ever be supplied by medical schools. This gives the college the opportunity to select for its students those hospitals which are considered in best position to furnish adequate intern training. Under the method devised by Rush Medical College of Chicago, the faculty arranges with some member of the attending staff of each approved hospital to report at regular intervals regarding the work done by the intern. Through reports

from the interns also information in regard to the character of the hospital is obtained. A somewhat similar scheme is reported as working out fairly well at the University of Minnesota Medical School also. The colleges which have adopted the intern year as a requirement for the M.D. degree and the years when the requirement became, or becomes, effective are given in the accompanying table.

SUPPLY OF HOSPITAL INTERNS

There is a real demand for medical graduates to serve as interns in hospitals, but this demand could not be met even if the number of medical colleges and the number of graduates annually should be doubled or trebled. The number of hospitals seeking interns has been tremendously increased and new hospitals are rapidly being erected. Last year 1,126 hospitals, with a total of 270,000 beds, were using or seeking interns. Counting that one intern is needed for every thirty beds, these hospitals would require 9,000 interns each year—more than three times the number of medical graduates in 1919! No such number of graduates is necessary to meet the normal demand for physicians. The intern problem requires some other remedy:

(a) The internship might be extended to two years by which the annual output of graduates would supply twice as many hospitals.

(b) The hospitals might pay salaries to recent graduates inducing them to remain for several years as resident physicians or surgeons.

(c) Hospital assistants or nurses might be trained to do much of the work now devolving on the intern—as suggested by Dr. Goldwater.

(d) The situation is relieved in some hospitals by the employment of stenographers who, at the time the patients are examined, take down histories from dictation by the members of the attending staff.

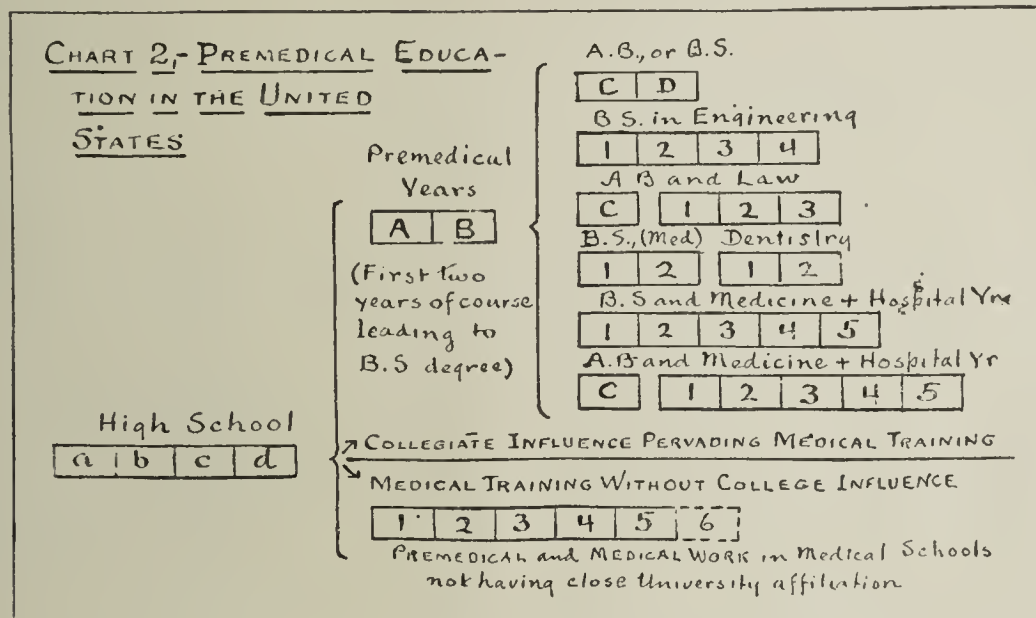
Meanwhile, the number of hospitals is now so large that only those will be able to secure interns which are willing to furnish a valuable clinical training.

NO SCARCITY OF PHYSICIANS; NEED BETTER DISTRIBUTION

A tabulation prepared in August, 1919, shows that the United States has one physician to every 720 people as compared to one to 1,500 in Great Britain. Investigation shows that, with a few exceptions, the demands made for physicians come from the sparsely settled districts in which it would be difficult for a physician to make a living.

The main difficulty is the imperfect distribution rather than a shortage of physicians. Meanwhile, the medical care for rural districts is being gradually improved through better roads, the use of automobiles, interurban railways, telephones and other like improvements. These are enabling the patients in rural districts to obtain more readily the services of physicians in nearby cities.

The Council on Medical Education is now making another survey of all medical schools, the purpose being to ascertain the present problems in medical education. This survey is revealing many changes since 1904; new buildings, more and better equipped laboratories, many more full-time teachers, greatly increased financial resources, closer relations with hospitals and dispensaries, more abundant clinical facilities and greatly improved methods of clinical teaching are everywhere in evidence. The very radical improvements in certain



This chart shows (a) that the student is under the influence of college life and atmosphere during his two premedical college years; (b) that he is not required to make a final decision in regard to his life work until he has finished all premedical work, and (c) that at any time he can change to some other calling without difficulty.

	Affects Matriculants	Affects Graduates
University of Minnesota Medical School.....	1910-11	1915
Leland Stanford Junior Univ. School of Med.	1914-15	1919
Rush Medical College (University of Chicago).....	1914-15	1919
University of California Medical School.....	1914-15	1919
Northwestern University Medical School.....	1915-16	1920
University of Vermont College of Medicine.....	1915-16	1920
University of Illinois College of Medicine.....	1917-18	1922
Loyola University School of Medicine.....	1917-18	1922
College of Phys. and Surgs., Los Angeles.....	1918-19	1923
Columbia Univ. Coll. of Phys. & Surgs., New York	1918-19	1923
Detroit College of Medicine and Surgery.....	1919-20	1924

particulars cause the present conditions to stand out in strong contrast to those found in the Council's survey in 1906.

EXIT THE UNEQUIPPED MEDICAL COLLEGE

About 40 of the 162 medical schools existing in 1906 were without laboratories and without clinical material, yet in 1907 each of these institutions turned out from 12 to 105 graduates. Now most of the medical schools have from five to fifteen well equipped laboratories, and there is not one which does not have at least three laboratories. As to clinical material most medical colleges now actually own or control a teaching hospital, while there is not one which does not have relationship with a hospital in which at least amphitheater clinics can be held.

INDEPENDENT MEDICAL SCHOOLS DISAPPEARING

Again private medical schools—those not having university connection—have largely disappeared. Now of the 85 medical schools, 66 are actually medical departments of universities and in 52 of these the universities have assumed full control not only of the entrance qualifications of the students admitted but also of the finances and the methods of teaching, so that the academic spirit of the university now pervades the medical school also. Of the 68 Class A medical schools, 60 are departments of universities. The influence of university life has been largely increased since now the students have obtained two years of premedical preparation in the liberal arts college.

Of the 86 medical colleges now existing 70 are in Class A, 8 are in Class B and 8 in Class C. Of the 70 in Class A, 59 give the complete four-year course, while 11 offer only the first two years.

When the present survey of medical schools is completed, the Council is planning a revision of its classification. There is, at present, a wide variation between the highest and the lowest of the medical schools now rated in Class A. It is contemplated, therefore, that a subdivision of the Class A group be made, placing the 25 or 30 medical schools which come up to a definite standard in a Class A+, and leaving in A those which are doing sufficiently good work that they can be recommended to all state licensing boards. Certain medical schools which are found seriously deficient will have their rating changed to Class B. It is expected that this subdivision of the present Class A group will lead those rated in A to bring about further improvements.

II. MEASURES OF IMPORTANCE IN MEDICAL EDUCATION

The second function of the Council was to suggest the means and methods by which the American Medical Association can best influence favorably medical education. In this connection we submit the following:

IMPROVING HOSPITAL SERVICE

The Council has given a great deal of careful study to the conditions underlying hospital service which is clearly one of the most important problems now confronting the medical profession, and is convinced that the American Medical Association with its constituent state societies is particularly well equipped to carry on this work. In this connection, the following statement will show the progress of the work in connection with hospitals conducted by the American Medical Association and its Council on Medical Education.

HOSPITAL WORK OF THE AMERICAN MEDICAL ASSOCIATION

Since 1903, the American Medical Association has conducted a clearing house of information relating to all matters in which physicians are interested. This has included information relating to hospitals. From a small beginning the information has rapidly increased in quantity as have also the sources and methods of obtaining information. At first, the information consisted of data obtained through correspondence with physicians, references to articles relating to hospitals and hospital problems published in *THE JOURNAL*, references to books dealing with these problems, etc. As hospitals increased in numbers and as the demand for information increased, the means for obtaining data were also expanded so that, at the present time, the Association has under the Council on Medical Education, a definite Bureau

on Hospitals, which in 1918 had a man who devoted part of his time to the work and for the last year another man has been engaged on full time. This work is intimately tied up with that relative to the many other lines of work carried on at the headquarters of the American Medical Association and especially with medical education, medical licensure, the biographical index and the medical directory. The bureau is aided by committees in the various states, representing the state medical societies, which, in turn, work in harmony with the county societies of their states.

This work of collecting information relating to hospitals and the furnishing of such information to those having need of it, therefore, has been a continuous but a constantly increasing work since 1903. There have been intervals, however, when special and more extensive efforts have been made to secure information in connection with hospitals.

In 1905, a closer relationship between the American Medical Association and hospitals was established when the Council on Medical Education urged that an internship be required as a part of the regular medical course. In 1905, also, the work with hospitals received an additional stimulus through the more detailed information which was obtained from all hospitals as a basis for the lists published in the American Medical Directory.

In 1912 a careful reinvestigation of all hospitals was made for the purpose of ascertaining which were in a position to furnish acceptable internships.¹ Such information as had been collected by the Council through reports from the hospitals, special questionnaires, etc., was submitted to the various state committees for verification. These committees did excellent work, and in several states inspections were made of most or all of the hospitals.

The following schedule was adopted in order that a uniform standard of measurement might be provided for the use of all committees. The outline follows:

1. Buildings and grounds; light; heat; ventilation; repairs; cleanliness, etc.
2. General supervision; superintendence, etc.
3. Trustees; ownership and general conduct; whether conducted in the interests of the community and scientific medicine, or solely for the profit of the attending staff.
4. Medical staff; its organization, character, etc.
5. Intern service: existence of; proportion of, to patients.
6. Nursing; training school for nurses; orderlies, etc.
7. Laboratory; roentgen ray, clinical, laboratory facilities, etc.
8. Records; histories; library, etc.
9. Out-patient department; emergency service; necropsies, etc.
10. Educational functions; teaching; research; influence on local profession, etc.

This general survey of 1912-1914, covered 2,224 hospitals having twenty-five or more beds and reports were received from 2,085, or 98.2 per cent. The reports provided more reliable and up-to-date information regarding all hospitals and enabled the Council in 1914 to publish in tabular form information relating to 852 hospitals which provided internships for 3,006 interns annually. A small, first edition of this tabulation was printed in February, 1914; it was submitted to the various state committees for revision and, after numerous corrections, was published in October, 1914. About 5,000 copies of this pamphlet were printed and circulated. The medical schools were provided with a sufficient number of copies so that each senior student could obtain one.

In a later general survey, that of 1915-1916, the committees of twelve states inspected all or most of the hospitals in those states. In Pennsylvania all hospitals were inspected by a committee of the Bureau of Medical Education and Licensure the chairman of which was a member of the State Advisory Committee on Hospitals. In New Jersey, also, all hospitals were inspected by a joint committee of the State Board of Medical Examiners and the state medical society. This committee also was the one appointed to cooperate with the Council on Medical Education. Based on the data thus obtained, a second revision of the list of hospitals providing internships was published in August, 1916. The list contained the names of 687 hospitals which provided 3,340 internships each year—more than could be filled by the number

1. The results of this investigation were presented at the annual conference of the Council on Medical Education in February, 1915, and the report including the personnel of the various state committees was published in the American Medical Association Bulletin, March 15, 1915, page 316.

of students being graduated annually. The demand for this pamphlet has been constantly increasing.

The records showed that the number of hospitals had been largely increased since the previous inspection and information brought to light a larger number of small, private hospitals, so that, all together, there were approximately 5,000 hospitals having twenty-five or more beds. It was seen that an era of hospital construction had already well begun which likewise called for larger facilities for the collecting and preparation of information relating to hospitals and hospital problems.

Early in 1918 the third general survey of all hospitals was begun. As in previous surveys, an abundance of information collected by the Council was sent to the state advisory committees for their guidance in the work. This information included: (a) Digests of information collected by the Council regarding all hospitals in the state. (b) Lists of all hospitals in the state as published in the latest directory. (c) A collection of selected literature bearing on hospitals and hospital efficiency. (d) A letter of instructions by which state committees would carry on the work in a uniform manner. (e) A tentative schedule of the essentials in a hospital for the satisfactory training of interns. (f) Forms on which additional data might be obtained by the committees as well as blanks on which reports of each committee's work could be prepared and returned to the Council.

Each committee was asked to consider the material sent and to inspect all hospitals as far as possible, or otherwise verify the information relating to each institution and to furnish the Council with an A-B-C rating for all institutions. In this survey, as reported a year ago, it was found there were approximately 6,000 hospitals having twenty-five or more beds, a total capacity of 250,000 beds.

The committees are still at work but reports have already been sent in for 1,298 hospitals of which 1,240 have been graded. Of these, 323 (26 per cent.) are in Class A; 448 (36 per cent.) are in Class B; 321 (26 per cent.) are in Class C, and 148 (12 per cent.) are below Class C. These ratings are being systematically recorded and the supporting data filed. Reports regarding certain disreputable hospitals have been obtained and these are barred from the lists published in the American Medical Directory.

The Association is informing itself thoroughly as to how well each hospital is meeting the needs of its community. At the same time it is giving the hospital the best possible assistance and information.

ATTITUDE OF HOSPITALS

Hospitals, generally, are taking the common sense view, that the survey is a part of a large movement for hospital betterment. They see that hospital standardization is an inevitable process, and that they will soon be expected to measure up to certain standards of equipment, organization and practice. Many of them strive promptly to effect the improvements in organization and in service necessary to secure and retain a Class A rating.

GROWTH OF HOSPITAL SERVICE

The character of our correspondence shows that the hospital information collected is rapidly turning to service. Requests are constantly coming from hospital staff members, superintendents, physicians, interns, nurses, and others for advice and information about hospital architecture, construction, management, staff organization, money raising campaigns, intern problems, nursing and the training of nurses, special hospitals, laboratory work, records, standards, social service, special courses, industrial medicine, etc. The indexing of information under appropriate titles has enabled us to promptly furnish the information requested.

A series of articles presenting hospital plans of special merit have been prepared in collaboration with several architects and are being printed in *THE JOURNAL*.

The "Schedule of Essentials in a Hospital for the Satisfactory Training of Interns" reported last year has been welcomed and several thousand copies have been distributed. In response to an insistent demand from persons responsible for the operation of hospitals, we are preparing a schedule

of essentials for all hospitals which are to be given an acceptable rating whether they desire interns or not.

Another revision of the list of hospitals that furnish acceptable internships, will soon be ready for publication. Like the previous issues, it will be in tabulated form and will include a great deal of detailed and useful data relating to the hospitals, showing those that admit women interns and those that have training schools for nurses.

The rapid growth of hospital service indicates that the work should be continued along the following lines: (a) Push the collection of data regarding hospitals from all possible sources so that the clearing house for such information may become still more serviceable. (b) A further development of the Hospital Service Department in *THE JOURNAL* and the accumulation of a line of hospital literature. (c) Perpetuation of indexes and classifications already completed or begun. (d) Provision for inspection of hospitals where it is considered necessary, and where inspection by other agencies does not furnish satisfactory information. (e) Creation of a permanent hospital committee in each state and the retaining on it of competent and experienced men. (f) Continuation of the relationship with the individual hospital by which we may not only obtain information direct from the hospital but also that the hospital may receive the greatest benefit from such cooperation. (g) A friendly cooperation with other agencies working for the betterment of hospital service.

AGENCIES INTERESTED IN HOSPITAL DEVELOPMENT

The American Medical Association, as the organization representing the medical profession of America, must necessarily continue its splendid clearing house of information on hospital matters the same as it supplies information on other topics in which physicians are interested. With its component state and county medical societies; with its complete biographical index of physicians and with its close relations with medical colleges and state licensing boards, the Association is admirably equipped to carry on efficient investigations with much less expense than is possible by other organizations. At the same time the Association welcomes the work done by other organizations and will lend its hearty cooperation toward the common end.

The American College of Surgeons during the last few years has conducted an investigation of hospitals. Their appeals to the attending staffs, boards of trustees and the public have stimulated an increased interest in hospital standardization. The Catholic Hospital Association also began an energetic campaign for the improvement of the hospitals in that denomination. The rapid growth in both the number and the size of hospitals shows that the field for investigation is not only extremely important from the public point of view but is also large and difficult. There is, therefore, room for all the work that can possibly be done to bring about a continuous and systematic supervision of these institutions which are of such vast importance to the public.

THE AMERICAN CONFERENCE ON HOSPITAL SERVICE

At the annual conference of the Council on Medical Education in March, 1919, following an address by the president of the American Hospital Association, a resolution was adopted which led to the creation of the American Conference on Hospital Service. The first meeting was called by the President of the American Medical Association and held in the Association Building Monday, April 21, 1919. Delegates were present from the American Medical Association, the American Hospital Association, the American College of Surgeons, the Association of American Medical Colleges, the Catholic Hospital Association, the American Nurses' Association, the American Association of Hospital Social Workers, the Federation of State Medical Boards of the United States. A partial organization was effected under the name of the American Hospital Conference and, after the appointment of an executive council, another meeting was called to be held at Cincinnati in September in connection with the annual meeting of the American Hospital Association. At the September meeting the organization was completed, the name being changed to the American Conference on Hospital Service. A third meeting was called, to follow the

annual conference on medical education in Chicago, in March, 1920. Beside the associations represented at the first meeting in Chicago, the new association included in its membership the medical departments of the United States Army, Navy and Public Health Service. Permanent officers and a board of trustees were elected and it was decided to create several committees. The meeting in Chicago resulted in a further perfecting of the organization and the naming of the personnel of committees on hospital service and record, hospital internship, nursing and social service as related to industrial medicine. It is hoped that this organization will result in securing the cooperation of all who are interested in hospital development.

GRADUATE MEDICAL EDUCATION

During the last year, the Chairman of the Council, assisted by Dr. Louis B. Wilson, of the Mayo Foundation, Chairman of the Council's special committee on graduate medical education, inspected all but a few of the graduate medical schools of the country and their report is briefly summarized as follows:

1. Opportunities for American medical graduates to study in Europe are at present largely limited to short "courses" of lectures and clinical and laboratory demonstrations. Positions permitting individual study of, and responsibility for, the diagnosis and treatment of patients are properly filled by each country's own medical graduates.

2. In the United States opportunity for graduate study is sought (a) by those desiring to study for a few weeks or months, and (b) those desiring to study for several years.

3. The short-term graduate students,—about 6,000 this year in the United States—are (a) general practitioners seeking courses in continuation of their undergraduate studies, and (b) partially prepared specialists seeking to perfect their technic, usually in some minor surgical field.

These two classes of graduates possess the following general characteristics:

Nearly all have practices, either general or more or less special, which they cannot leave for any considerable length of time; many are inadequately trained in the fundamental medical sciences; in the brief periods they can leave their practices, they are averse to spending much time on fundamentals, and, in most instances the time at their disposal is entirely inadequate to obtain even a proper start in the fundamental subjects. Most of them desire work in operative technic in surgery. A small proportion seek to study cases for clinical diagnosis. Most wish to be "crammed" and can afford to pay a reasonable fee for instruction.

The existing postgraduate schools take almost all applicants for short terms of study, though many do not enter because they cannot get the courses desired. University medical schools should provide opportunities for the better prepared men of these classes to combine diagnosis with treatment.

4. The long term graduate students,—about 4,000 in the United States this year,—are (a) those who wish to devote two or more years to study for practice in some special field, and (b) a small number who wish to prepare themselves for public health work or for teaching or research in the fundamental branches.

Opportunities for graduate students to prepare themselves by long periods of work in the clinical specialties are woefully lacking. Opportunities for long term courses in public health or in the fundamental branches exceed the demand, but fellowship stipends and ultimate financial rewards are too small to permit many without private resources to select such fields for their life work. The remedy is an adequate endowment for student fellowships and teaching positions.

On the basis of the inspection, the committee arrived at the following conclusions: (a) That the present facilities for graduate medical work in this country are entirely inadequate. (b) That the legitimate demand for work of this kind should be met. (c) That this demand, which has heretofore been made by proprietary schools should be met by the universities. (d) That it would be desirable for 15 or 20 strong university medical departments to consider the development

of graduate medical departments. A suggested plan for such a school is as follows:

The graduate medical department should probably be independent of the under-graduate department, and with a separate faculty; an adequate teaching hospital and out-patient department; clinical laboratories for both out-patient department and hospital, and research laboratories. In addition to a general teaching hospital, it should have the control of special hospitals, such as eye, ear, nose and throat, orthopedic, infectious diseases, etc.

Provision should be made in the curriculum for at least five classes of students.

Group 1. For young men who have completed their medical course and their hospital internship, a course of probably three years, such as is given at the University of Minnesota. As far as possible these positions should be fellowships carrying with them a living salary. These students, at the satisfactory completion of their work, should be given a degree of Master of Science or Doctor of Philosophy in Surgery, Ophthalmology, or whatever specialty they have been studying.

Group 2. For men who have completed their medical course and internship and have been in practice for three to five years, a course of at least a year of special training which in addition to their practice would be the equivalent of the three year course of Group 1. These men, if they demonstrate their fitness, should be given the same degree as the men in Group 1.

Group 3. For men who have been in general or special practice a course of six months or more of training in some chosen special line. At the satisfactory completion of this work the student should be given a certificate.

Group 4. For a large group of practitioners short courses of from four or six weeks should be given in any field of work they desire. These courses should be known as practitioners' courses; they would furnish an opportunity for the practitioner to become more competent, but should not be regarded as preparing the practitioner for a specialty. No certificate of any kind should be given for this work.

Group 5. Certain courses should be planned also for practitioners who live near the medical school and could devote a few hours once or twice each week to some special subject without discontinuing their practice. This would enable practitioners to keep in touch with the newer developments in clinical and laboratory work.

As to compensation men who devote their entire time to teaching in the graduate school should be paid adequate salaries. The compensation of the clinical teachers could be met from tuition fees. In the Graduate Medical School of Harvard we were told that about 75 per cent. of the fee went to the teachers and 25 per cent. toward general expenses.

III. ELEVATING THE STANDARDS OF MEDICAL EDUCATION

The third function of the Council was to act as the agent of the American Medical Association in its efforts to elevate the standards of medical education.

Towards this end, the Council, in 1905, established an annual conference on medical education. During the last few years the conference has been held concurrently with the annual meetings of the Association of American Medical Colleges and the Federation of State Medical Boards, and has grown into an annual congress on medical education and licensure. This congress has been entirely informal and is without legal powers. Nevertheless, as an open forum in which problems of medical education and licensure have been presented and discussed, it has been of great service in elevating educational standards. We hope that the newly organized American Conference on Hospital Service will also become closely identified with this annual congress.

The congress held March 1-3, this year, in Chicago, was a most successful and instructive meeting. Over 200 delegates were present, representing not only medical educators and representatives of state licensing boards, but also presidents of prominent universities, and representatives of educational boards and foundations. Beside the usual reports of progress in medical education and licensure, the papers dealt with

special functions of state universities, full-time teachers and research in medical schools; graduate medical education in the United States and abroad; problems and inter-state relations in licensure and a series of reports on medical teaching in the preclinical branches. Among the speakers were President George E. Vincent, of the Rockefeller Foundation; Abraham Flexner, of the General Education Board; President Thwing, of Western Reserve University; President Gilbur, of Leland Stanford University, and President Jessup, of the University of Iowa.

URGENT NEEDS IN MEDICAL EDUCATION

There are three special needs which require the attention of those interested in the best medical education:

1. The age of students on graduation.
2. The financial side of medical education.
3. The development and reorganization of medical schools on sound educational lines.

THE AGE OF STUDENTS ON GRADUATION

At the annual conference held by the Council in 1917, it was shown that the average age of students on graduation and completion of the hospital year was 28 years plus. This brings the student into the practice of his profession at a rather too advanced age. In Central Europe and in Great Britain, physicians enter practice at about 25 or 26 years of age. The solution seems to be to save two years of the student's time by a reorganization of the intermediate and high school curriculums. A comparison of the educational scheme in the United States with that of European countries shows that about two years of time are lost by the average student in this country during his grammar and high school courses. The student of the United States on graduation from high school, would at the same age in Europe have completed the equivalent of two years of work in our colleges of arts and sciences. Agencies in the United States having to do with high school and college education are planning to reorganize the secondary school curriculums so as to save these two years of time. This would enable the average student to graduate two years earlier from the medical school.

THE FINANCIAL SIDE OF MEDICAL EDUCATION

Many plans now under consideration for the development of medical education seem to utterly disregard the cost. The fees of each medical student on the average are about \$150 each year, while the cost of his instruction is about \$450. At many institutions the cost is \$1,000 or more and is still mounting. With the increasing cost, fees could be raised to possibly \$250. In the interests of the whole community the cost of medical education should be kept as low as possible. For example, the cost of maintaining a hospital for medical teaching should not be borne by the medical school. No hospital should be created and maintained primarily for the teaching of medicine. The first function of a hospital is to make proper medical care of patients, and as a second function, medical teaching and research.

The use of great municipal, state and denominational hospitals should be placed at the disposal of our medical schools for teaching and research. With proper control such a combination of hospital and medical school can be of great mutual benefit. For example, the state hospitals in several states have also been made the teaching hospitals of the state university medical schools. It is pleasing to note also that in several cities—e. g., Augusta, Memphis and Louisville—city hospitals have by contract been made the teaching hospitals of local medical schools. Such combinations are in the interests of the public and receive enthusiastic and generous support. Out-patient departments likewise would serve a more useful function in the community if they were utilized for medical teaching. Special hospitals, such as maternity, orthopedic, children's, eye and ear, psychopathic, etc., should also be associated with medical teaching.

THE ALL-TIME CLINICAL FACULTY

The much discussed plan of all-time clinical teachers is so extravagant that it cannot be generally adopted by the medical schools of the country. A school without unlimited

resources could not consider it and even a school with large resources can secure better results with a given amount of money by adopting the part-time plan. The all-time clinical teacher experiment has not been encouraging and it is difficult to secure the best type of men for these positions under restrictions that exclude them from the rewards of professional work well done. It is no secret that these all-time clinical positions have gone begging and well trained clinicians have refused to accept them.

For medical schools having a reasonable endowment, the most practical plan of organizing the clinical departments would be to provide the head professor in each department with a salary of about five thousand dollars a year, and with 10 or 20 beds in the hospital which he can use for his private patients. He should be permitted to devote two hours a day to this private work and be expected to devote the necessary time to teaching duties. If a professor in a clinical chair abused his privileges it would be easy to correct or eliminate him. Living salaries also should be paid to associates; younger men who would do the bulk of the teaching and clinical research. Their greater compensation is the educational opportunity by which after a few years they can become masters of the science and art of medicine and be able to enter successfully into the practice of their specialties. This plan is not an experiment but has been gradually developed after years of experience in the medical departments of the best universities of the world.

REORGANIZATION OF MEDICAL EDUCATION

Some weaknesses have developed in the process of changing our old type of medical schools into medical departments of universities. In the transition the laboratory branches of the medical course have been placed in the hands of university professors who are not in close touch with the practice of medicine and the medical profession. As a consequence,—and as shown by the testing of medical education in the war,—the laboratory branches are not being well taught, even in our best schools, from the standpoint of the training of practitioners of medicine. The college professors of anatomy and physiology have many of them drifted from the science and practice of medicine and from the medical profession.

The American Association of Anatomists, composed largely of the teachers of anatomy in medical schools, is no longer affiliated with medicine. Its meetings are largely devoted to scientific discussions of the embryology of the rat and lower forms of life and have little or no relation to the science and art of medicine. In many medical schools splendid courses in embryology and comparative anatomy are given but applied human anatomy which is an every day necessity to the practitioner of medicine, is not taught. The college professor of anatomy is sometimes incompetent to teach it and as a result the students suffer. Men of the non-medical type have no place as teachers of anatomy in a medical school and their places should be filled by men who have had a complete medical training. Their first duty is to train practitioners of medicine.

SOME WRONG TENDENCIES IN CLINICAL TEACHING

Medicine passes through cycles. In Trousseau's time, in 1860-1870, the chemists thought chemistry would solve all medical problems, and Trousseau in a clinical lecture pointed out the fallacies of their claims. The same place in the cycle has returned and the chemists and laboratory workers are again claiming that all medical problems are to be solved by the chemical route. To many of these men, the older methods of physical examination, careful clinical observation and morbid anatomy, are old and worn out things in the light of the newer medical chemistry. And some of these men have succeeded in so impressing university trustees, that men who have had special training only along chemical lines are being appointed to chairs of medicine rather than men with a broad clinical training. This tendency is not in the best interests of medical education, of the medical profession, or of the patient.

Sir James Mackenzie in his recently published book on the future of medicine has done a real service in calling attention to the great importance of clinical research along the broad

lines of the clinical observation of the patient, and the attempt to properly interpret from the symptoms and history the pathology in the case.

SOME TENDENCIES IN OUR MEDICAL SCHOOLS

At present in this country the university professors in the laboratory branches have been given too large a part in reorganizing our university medical schools and in developing the medical curriculum. It is clearly our duty to call attention to this fact and see that this tendency is corrected. The first and highest duty of the medical school is to train competent practitioners of medicine and this cannot be done by the college professor of embryology and comparative anatomy, or by the chemist working in a clinical laboratory or by the research worker in some isolated medical institute. This problem is to be met by placing the reorganization of medical education in the hands of medical men.

1. The teachers of the laboratory branches should be required to have a medical training which would give them a medical point of view; they would keep in touch with the art and science of medicine, and would realize that their first duty was to assist in training practitioners of medicine.

2. The teachers of the clinical branches should have a broad medical training in both the science and the art of medicine; they should be great clinicians in their special fields, who understand not only what anatomy and physiology, pathology and pharmacology the student needs to acquire, but also what he needs to know to become an expert practitioner of medicine. Fortunately in the last twenty years many such men have been trained in this country.

The controlling element of a medical faculty must consist of a group of medical men in the closest touch with the science and art of medicine and with the medical profession. Such a group must have as its members the professors of medicine, surgery, obstetrics and pathology. Such a group must control a teaching hospital and an out-patient department, with adequate clinical and pathologic material and well equipped laboratories. This plant should be located where it can secure ample clinical material with little or no cost to the medical school.

There is no desire to belittle the importance of the laboratory branches in medicine. But a medical school is a school in which to train doctors and not anatomists or physiologists. If it fulfills its first and most important function, the training of practitioners of medicine, it will also be training teachers and research workers.

SUMMARY

This report is summarized as follows:

(a) Instead of 162 medical colleges which existed in 1904—over half the world's supply—this country now has 86, the character of which has been greatly improved. Instead of only 3 per cent. in 1904 requiring two or more years of college work for admission now 92 per cent. have that standard.

(b) The lowest ebb in the enrolment of medical students, due to the adoption of higher entrance qualifications, was 13,052 students in 1918-19. An estimate shows that the enrolment in the present session is 13,554 students. The increased enrolments of premedical students show that the classes in medical schools will continue to increase at least during the next several years.

(c) The trend of medical schools to limit their enrolments of medical students is in the interests of better medical education. Even with this limitation, the capacity of Class A medical schools is sufficient to care for many more than are at present enrolled in medical schools and this capacity can be easily expanded to meet future needs.

(d) With the higher standards adopted during the last sixteen years the requirements for admission to medical schools in the United States are now on a par with other leading countries.

(e) The American scheme of premedical education is of particular advantage in that a student can postpone his final selection of the medical profession until he is best qualified to make that choice.

(f) Hospital internships are voluntarily obtained by a great majority of medical graduates. An internship has been

made an essential qualification for the license in ten states. It has been adopted as an essential for the degree by eleven medical schools.

(g) The present demand for hospital internships could not be met even if the number of medical schools and the number of graduates each year should be doubled or trebled—a measure not necessary to meet the normal demand for physicians.

(h) The hospital intern problem may be solved by (a) extending the internship to two years; (b) employing resident physicians; (c) training assistants or nurses to do much of the work now devolving on interns; (d) having stenographers take down histories from dictation at the time staff members examine patients.

(i) There is no scarcity of physicians in the United States; there is, however, an imperfect distribution of the present supply. Medical care in rural communities is improving rapidly with better roads, automobiles, etc., by which services of physicians in nearby cities may be more readily secured.

(j) A re-inspection of all medical colleges is being made by the Council preparatory to a revision of the classification of medical schools. This re-survey is also revealing many improvements as compared with conditions found in 1906.

IMPROVING HOSPITAL SERVICE

(k) The improving of hospital service is now one of the most important works confronting the medical profession. It is a work in which, naturally, physicians are most largely concerned. The American Medical Association, therefore, should take an active part in this work.

(l) The work of the Association in connection with hospitals has rapidly grown since 1903. Under the Council on Medical Education there is now a Bureau on Hospitals with a man who devotes his entire time to the work. With the rapidly increased interest in hospital development during the last few years the work has been correspondingly extended.

(m) Besides the collecting of hospital information each biennium for the American medical directory, more elaborate surveys of all hospitals were made in 1912-14, and in 1915-16. A third extensive survey is now in progress.

(n) An advisory committee on hospitals to cooperate with the Council has been appointed by every state medical association. These committees are doing splendid work and several have undertaken the personal inspection of all hospitals in their states.

(o) The Association should continue to (a) conduct a clearing house of hospital information; (b) further develop the Hospital Service Department in *THE JOURNAL*; (c) perpetuate its indexes and classifications; (d) inspect hospitals where satisfactory information is not otherwise obtained; (e) create permanent hospital committees in all states; (f) develop closer relationship with individual hospitals; (g) cooperate with other agencies working for better hospital service.

(p) An organization known as the American Conference on Hospital Service has been created at the suggestion of the Council on Medical Education in which the various agencies interested in hospitals are represented. The first meeting was held at the American Medical Association headquarters Chicago, April 21, 1919. Subsequent meetings for the completion of organization were held in Cincinnati, September 9-10, 1919, and again in Chicago, March 3-4, 1920.

NEEDED IMPROVEMENTS IN MEDICAL EDUCATION

(q) There is great need in this country of increased and improved facilities for graduate medical education. This need could be best supplied by our leading university medical departments.

(r) Efforts should be continued to so rearrange educational methods that the average age of medical graduate may be reduced by at least two years. The solution now seems to be in a reorganization of intermediate and high school education.

(s) The extravagant and unnecessary expenditure of money in the development of medical education should be deprecated. In some recent plans for development this point seems to have been utterly disregarded.

(t) There is a serious tendency in present day medical education to drift into the ultra-scientific and to ignore or belittle the development of a closer relationship of the pre-clinical and clinical branches. This tendency will be decreased if it is required that teachers of the laboratory departments in medical schools shall have had a complete medical training by which they will obtain the medical point of view.

Respectfully submitted,

COUNCIL ON MEDICAL EDUCATION.

ARTHUR DEAN BEVAN, Chairman,

ROBERT C. COFFEY,

WILLIAM D. HAGGARD,

ISADORE DYER,

WILLIAM PEPPER,

N. P. COLWELL, Secretary.

Report of the Council on Scientific Assembly

Dr. J. S. Horsley, Virginia, Chairman, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work. The report follows:

To the Members of the House of Delegates of the American Medical Association:

Shortly before the adjournment of the final meeting of the House of Delegates at Atlantic City, the following preamble and resolution were submitted by the delegate from the Section on Obstetrics, Gynecology and Abdominal Surgery:

WHEREAS: An effort is being made to organize an international Congress of Obstetricians and Gynecologists at a meeting in Brussels during September next, at which American Obstetricians and Gynecologists will have representation, therefore, be it

Resolved, That the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association unanimously approves of this movement, stands ready to cooperate in every way, and cordially invites the Congress to hold its initial meeting in New York at a convenient date to be determined.

The House received and referred this communication to the Council on Scientific Assembly but it did not empower the Council to act in this particular matter which does not fall within the scope of the Council as it is defined in the By-Laws of the Association. Consequently, the Council respectfully reports that it has taken no action.

On January 10, the Council held a conference with the secretaries of the sections at the headquarters of the Association. All the sections were represented either by their secretaries or one of the other executive officers. All the members of the Council were present except Dr. Roger S. Morris, who was absent on account of serious illness. In compliance with the Standing Rules of the House of Delegates for the guidance of the Council on Scientific Assembly, and with unanimous consent of all in attendance at the conference, arrangements were made so that each section will hold one meeting on each of the days assigned for section meetings during the 1920 annual session. Seven sections will convene each morning at 9 o'clock as follows: Surgery, General and Abdominal; Ophthalmology; Diseases of Children; Pharmacology and Therapeutics; Nervous and Mental Diseases; Preventive Medicine and Public Health, and Urology. Eight sections will convene each afternoon at 2 o'clock as follows: Practice of Medicine; Obstetrics, Gynecology and Abdominal Surgery; Laryngology, Otology and Rhinology; Pathology and Physiology; Stomatology; Dermatology; Orthopedic Surgery, and Gastro-Enterology and Proctology. It will be noted that most of the sections which at the 1919 annual session met during the morning hours, this year will hold their meetings in the afternoon hours, and that the majority of the sections which met last year in the afternoon hours will meet this year in the mornings.

The Council appreciates the interest and hearty cooperation manifested by the section officers who attended this conference. In the opinion of the Council this has made it possible to provide a well balanced scientific program for the entire Scientific Assembly—a program which will be interesting and instructive to all the Fellows who attend the annual session and yet one which maintains or improves the scientific standards of the sections.

In the development of its work, the Council has come to the point where it feels that its effectiveness would be

increased if it were constituted in a somewhat different manner than that now defined in the By-Laws. Consequently, the Council asks that it shall be reorganized so that it shall consist of five appointed members and shall have associated with it, ex-officio, the President-Elect of the Scientific Assembly, the Editor of THE JOURNAL and the Secretary of the Association. The members of the Council desire also to emphasize the value to the Council of the experience which members have gained from serving as section officers. The Council recommends that Section 7, Chapter VII of the By-Laws shall be amended so as to provide for the changes in the composition of the Council which have been suggested and to define the functions of the Council as follows:

The function of the Council on Scientific Assembly shall be: (1) To secure cooperation between the sections. (2) To pass upon questions of policy in relation to section work. (3) To stimulate the development of the sections. (4) To consider at first hand applications for new sections, or for changes in existing sections, and to report to the House of Delegates. (5) To assign and to appoint officers for the meetings of the section on miscellaneous topics. (6) To arrange the programs for the general meetings of the Scientific Assembly.

At the last annual session of the House of Delegates, the Section on Dermatology requested that the title of that section be changed to the "Section on Dermatology and Syphilology." As this is a question of policy in relation to section work, and also is a change in the existing sections, the matter has been brought to the attention of the Council, and after giving the subject careful consideration, the Council recommends that the request of the Section on Dermatology be complied with, and that Section 1, Chapter IX of the By-Laws be amended by substituting for the present Item 11 in that section reading "Dermatology" the words "Dermatology and Syphilology."

In compliance with the suggestions offered at the conference of secretaries of sections, in order to make the statement more definite, the Council recommends that Section 11, Chapter XI of the By-Laws shall be amended by substituting for the present wording of the section the following:

Sec. 11.—LENGTH OF PAPERS AND DISCUSSIONS.—The time allowed for the presentation of a paper before a section shall be limited to fifteen minutes. No one shall discuss any paper more than once, nor for longer than five minutes except with the unanimous consent of those present.

In order to clarify the meaning of Section 5, Chapter XI, it is recommended that the section be amended by adding at the end of the second sentence the words "of the section," so that the section shall read:

Sec. 5.—EXECUTIVE COMMITTEE.—Each section shall have an executive committee, which shall consist of the last three retiring chairmen. In case of absence of a member of the executive committee from a Scientific Assembly, the vacancy shall be filled by the chairman of the section. This committee (as constituted at the close of the Scientific Assembly) shall examine and pass on all papers read before the section, and shall endorse for publication only those that are of scientific or of practical value, and which will reflect credit on the section before which they were read.

Respectfully submitted,

J. SHELTON HORSLEY, Chairman,

E. S. JUDD,

F. P. GENGENBACH,

ALEXANDER R. CRAIG.

Report of Committee on Red Cross Medical Work

Dr. C. W. Richardson, Chairman, presented the report of the Committee on Red Cross Medical Work, which was referred to the Reference Committee on Reports of Officers.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

The Committee on Red Cross Medical Work wishes to report that having put itself in relationship with the American Red Cross, it found that the American Red Cross decided it was useless to call a meeting of the committee, or to put it into action this year on account of the cessation of the war, and that no further need of general action between the Red Cross and the American Medical Association existed. The committee requests therefore, that it be discharged.

Respectfully submitted,

CHARLES W. RICHARDSON, Chairman,

CHARLES R. REYNOLDS,

JOEL T. BOONE.

ADDENDUM

(Insert page 1232, Preceding Reports of Officers)

Dr. J. Voncken of Belgium was introduced and through the Speaker thanked the delegates for his warm reception and expressed his pleasure at being present.

The Vice-Speaker, Dr. Dwight H. Murray, New York, took the Chair, after which the Speaker delivered an address, which was referred to the Reference Committee on Reports of Officers.

Address of the Speaker, Dr. Hubert Work

To the House of Delegates:

Again it is my pleasure to convene this body of selectmen, from the membership of the American Medical Association.

By common consent, reduced to Constitution and By-Laws, this House of Delegates is the governing branch of the Association—the machinery which correlates the scientific product of the annual meetings. You work under articles of government which you amend or abrogate at will. No coordinate branch of the Association may direct or compel, beyond your pleasure. All of its officers are elected and their duties defined by you.

This recapitulation is intended to recall to mind your prerogatives and responsibilities in the art of government.

CONSTITUTIONAL CHANGES

The Judicial Council in its report now in your hands, has made recommendations for changes in the Constitution and By-Laws, for your consideration and action. In the main the changes consist of reconstruction of the text for the purpose of clarity, with the deletion of all matter relating to the Committee on Red Cross Medical Work, also of the text referring to the Ad Interim Committee, with minor changes.

THE AD INTERIM COMMITTEE

The purpose of the Ad Interim Committee, designed to act for the House of Delegates in emergency, was well conceived.

Its predetermined personnel was probably unfortunate. Authority for quick action should be vested in a small, wieldy body of Fellows for emergency service. If this committee be continued, it should, I believe, consist of the Speaker, the Secretary, and three sitting members of the House, to be elected annually. As now constituted the Ad Interim Committee includes the President of the Board of Trustees and imposes interlocking duties on him. Ex-presidents of the Scientific Assembly may lapse their interest in the Association. Certainly their official responsibilities have passed.

The President and President-Elect are not subject to the House of Delegates, so that four of the seven members of this committee as now constituted to act for the House, are not responsive to it, while the dual allegiance of the President of the Board of Trustees embarrasses him.

A substitute for the existing Ad Interim Committee may be provided by delegating its prescribed emergency duties to the Board of Trustees, or to the Executive Committee of the board, as you may determine. Argument that this might concentrate power would be valid. However, it would pass to officers whose acts are subject to review by the House.

The new By-Laws propose that the Speaker shall nominate members of the Standing Committees, presumably because of his more intimate knowledge of the qualifications of Fellows and of the duties of these councils, which come directly under the jurisdiction of the House. Heretofore members of these committees have been nominated by the president of the Scientific Assembly, whose term of office ends one year thereafter and four years before that of his appointees.

A suggestion well worth considering but not recited in the proposed amendments, is that of reducing the number of Trustees of the Association to seven or five members; the subdivision of the United States into trustee districts, and

the lengthening of their term of office, perhaps coupled with a prohibition against reelection, at least until after one year has intervened.

This suggestion implies a substantial reduction in the operating expenses of the board and need not endanger its working efficiency.

To limit the number of board members, implies concentration of authority, but at the same time, to fix a limit to their continuous service, would preclude the very remote possibility of self-perpetuation and would bring to the board, each year, a new member directly from the profession without.

The further suggestion for a districting of the United States, if approved, would avoid the election of two or more Trustees from a circumscribed, undefined section, and would result in as wide geographic representation on the Board of Trustees as we now have.

The relations of this House to the Assembly of the Scientific sections become more clearly defined each year. Inasmuch as the House is the executive of the Scientific Assembly, including the election of its officers, it would appear that all section units of the Scientific Assembly should indicate by nomination to the House, those whom they would approve for the presidency and vice presidency of the Scientific Assembly. This plan, if adopted, would afford each section an opportunity to compliment members who had distinguished themselves, and at the same time put before the House many potential presidents, for consideration, both for immediate and subsequent elections.

DEPARTMENT OF PUBLIC HEALTH

Our Association should again address itself to procuring a separate governmental department of public health. The public mind has been prepared for it by the exigencies of the late war. Health service is not logically a part of the national treasurer's duties, nor the Surgeon-General properly subordinated to the Adjutant-General of the Army. This is not a new subject to you but an old ambition which can now be revived with more than reasonable assurance, but preferably from different angles of approach. A concurrent resolution preliminary to such action, recently made favorable progress in Congress, but as heretofore, has failed because of the limitations of individual sponsors.

Those favorable to government supervision of the public health, through a separate department created for that purpose, now hold, or are aspiring to high office. It is possible that the influence of our 80,000 members exerted on our Congressmen at home, with powerful influence reaching from above them in Washington, may become effective.

THE ART OF MEDICINE

At one time physicians were said to practice the art and science of medicine. The art of medicine is the applying of its science; the selling of the science of medicine, if you please. It comprehends the refinement of the little things in practice and dictates the treatment of the patient. Homeopaths cast the future of their practice on it and popularized their dogma. The Christian scientists, likewise all quacks, thrive through attention to an art once attached, but now largely lost, to internal medicine, but which has been developed by surgeons, independently.

Masters of great clinics are famed for their art in organization and the results attained, partly through the consciousness of the patient. The present status of sanitation and of preventive medicine as a whole falls within the Art of Medicine primarily, and its world-wide acceptance supports the argument.

This is not a plea for less Science in medicine, but for more Art; for a development of the latter, *pari passu* with the former; for the symmetrical development of ethical medicine; for its protection against the cults which practice the Arts of Medicine without its Science; from the charge that it is becoming a trade-science, neglectful of the psychic sensibilities, the observance of which distinguishes our profession from veterinary medicine.

Doubtless the greatest immediate menace to public confidence in ethical medicine is pending through isolated, operative surgery in unscrupulous hands. Unless the Art of Surgery can be re-associated with the Science of Medicine and their interdependence again established, the morale of surgeons will necessarily suffer, since the quickest diagnosis can be made by exposing the suspected organ. But the rights of the patient may have been violated. This is a real danger and not a groundless alarm. The remedy for it logically lies in the hands of the American College of Surgeons, together with others who are surgeons first and operators afterward.

MILITARY TRAINING

The vexed question of Compulsory Military Training has been confused by Members of Congress and personal campaigners until the public apparently believes that Universal Military Training would invite war, but without it, the country would be safe.

Congressmen, alarmed by our mounting cost of government; ex-service men who resented the draft; timid women lacking the spirit of the great American mother; pacifists and conscientious objectors unite in protest against it.

If the public could realize that 35 per cent. of our young men of draft age were disqualified for military service in the World War because of physical defects, and logically also for effective citizenship, the opportunity afforded in training for correcting these defects, the leveling influence of contact between young men from every social station. Furthermore, that physical correction, mental development and vocational training are the objects sought and that instruction in the Manual of Arms is the least concern of those who favor this free summer school for boys; perhaps the narrowed vision of these thoughtless ojectors would expand. This duty also appears to fall within the province of physicians, patiently to lead the public toward that which is best for it.

IN MEMORIAM

Since we last met three of our members have answered their last roll call.

Floyd M. Crandall; of keen intellect, industrious, of pleasing personality and absolute loyalty to the highest ideals in medicine, died as he had lived, serene and unafraid. He was the supervising architect of our Association's laws. All changes for many years were reviewed by him. Our code of professional morals is couched in his language, and will live afterward. Those who knew him best admired him most. Nothing was too troublesome for him to do for a friend or for his profession. Reward was to him an incident and expressed appreciation an embarrassment. We can go forward without him but not so far, nor so safely.

E. C. Cantrell, for many years a trustee with floor privileges, followed by active service as a delegate in this House, fell in service to his profession. He heard the call of his country intended for younger men. He answered it and rendered distinguished service as an officer. When his uniform was mended and folded and put away, he heard another call for help. The sea-wall of his state had failed and people perished. It was his summons from beyond the Great Divide, and he, too, stepped out into the night, searching for the lost trail. Worn by volunteer service to his country and exhausted by voluntary service far outside of his community responsibilities, he did not die; he was overwhelmed.

Clinton P. Meriwether, with partially restored health, found his greatest usefulness in the later years of his life; to this Association, to his profession and to his country at war. He fought the battle of life with his nemesis beside him. It walked with him, sat down with him to dine, slept with him and eventually slew him. But never, did his great courage fail nor his step falter. And when the shadow of his life was merged into the darker shadow of the Valley, "with a cheery smile and a wave of the hand he wandered into an unknown land."

Three upright, tried and true physicians. We are proud that we knew them, and comforted by the belief that the light everlasting is falling on the upturned faces of these men.

Reference Committees

The Speaker resumed the Chair and announced the following Reference Committees:

SECTIONS AND SECTION WORK

Hugh T. Patrick, Chairman	Illinois
Lee Masten Francis	New York
Frank E. McCullough	U. S. Navy
S. R. Roberts	Georgia
Southgate Leigh	Virginia

RULES AND ORDER OF BUSINESS

W. R. Bathurst	Arkansas
John S. Helms	Florida
W. S. Lindsay	Kansas
E. A. Pray	North Dakota
Leroy Long, Chairman	Oklahoma

MEDICAL EDUCATION

J. H. Hall, Chairman	Colorado
W. H. Seeman	Louisiana
Frederic E. Sondern	New York
L. Hektoen	Illinois
F. F. Russell	U. S. Army

LEGISLATION AND PUBLIC RELATIONS

Franklin E. Murphy	Missouri
J. E. Lane	Connecticut
S. E. Lambert	Washington
J. H. J. Upham, Chairman	Ohio
Le Roy Crummer	Nebraska

HYGIENE AND PUBLIC HEALTH

J. W. Schereschewsky, Chairman	U. S. P. H. S.
A. T. McCormack	Kentucky
C. Van Zwalenburg	California
J. W. Flinn	Arizona
C. St. Clair Drake	Illinois

AMENDMENTS TO CONSTITUTION AND BY-LAWS

W. B. Russ	Texas
E. A. Hines	South Carolina
Albert E. Bulson, Jr.	Indiana
Edward Heckel	Pennsylvania
Rock Sleyster, Chairman	Wisconsin

REPORT OF OFFICERS

Thos. S. Cullen, Chairman	Maryland
F. B. Lund	Massachusetts
Homan Taylor	Texas
B. R. McClellan	Ohio
C. R. Odgen	West Virginia

CREDENTIALS

S. W. Welch	Alabama
Jos. M. A'kin	Nebraska
J. B. Gibby, Chairman	Pennsylvania
John C. Rockafellow	Iowa
D. E. Sullivan	New Hampshire

MISCELLANEOUS BUSINESS

C. J. Whalen	Illinois
T. H. Halsted	New York
Geo. E. Reading	New Jersey
J. W. Bell	Minnesota
F. C. Warnshuis	Michigan
C. E. Humiston, Chairman	Illinois

Dr. John D. McLean, Pennsylvania, rose to a point of order. He stated that the Speaker had authority to nominate members for Reference Committees, but they were to be elected by the House.

The Speaker stated that he had authority to appoint the Reference Committee, and the Committees so appointed, and announced would stand unless the House decided otherwise.

Dr. A. T. McCormack, Kentucky, moved that the members of the various Reference Committees as nominated by the Speaker be elected.

Seconded and carried.

The next in order was an address by Admiral William C. Braisted, U. S. Navy, President-Elect of the Association.

The Speaker stated that Admiral Braisted had requested the privilege of addressing the House after his induction into office, which request was granted.

Report of Secretary

The Secretary presented his report, which was referred to the Reference Committee on Reports of Officers. (See page 1232.)

Address of Dr. Alexander Lambert

The President of the Association, Dr. Alexander Lambert, New York City, delivered an address which was referred to the Reference Committee on Reports of Officers:

For a number of years there has been slowly developing a realization of the influence and value of hospitals as institutions. It is also evident that the rapidity of the growth of these institutions and the amount of benefit to be derived from them depends on the development of many different interests which are focused in each hospital, making it an institution and not merely a shelter in which the sick may rest and recover.

As a modern development nursing came first and then the beginnings of modern surgery followed by the practical application of preventive medicine causing the separation of communicable diseases from the general wards. Then followed the development of the social service side of the institution through which the great human relationship of the sick and injured was not lost sight of when they entered the hospital. Through which also the care and treatment of the sick and injured did not cease when they left the hospital, but continued with therapeutic intent out into their daily environment. It soon developed in the minds of the surgical side of the profession, as the great possibilities of modern surgery were unfolded, that the best surgical technic could not be brought to perfection without a tremendous development in the hospital as an institution in which all the multiple details of the best surgical technic could be obtained. To bring this about required a standardization and development of hospital organization itself. The development of all medicine under the expanding influence of scientific research forced, as necessities, into the hospitals, several kinds of laboratories such as roentgen ray, chemical and pathological.

Simultaneously with this technical growth within the hospital, medical education has developed and coincidentally it became increasingly evident that the future development of the medical school and the hospital were inseparably linked together. It was further noticeable that on the one hand the most painstaking care of the sick and injured was carried out in the hospitals connected with the medical schools and on the other hand the medical schools needed the biggest hospital opportunities. The executive side of the management of the hospital, of course, endeavored to keep pace with the development in the technical or medical side, and it was soon evident that it required a combination of medical and executive ability to run to the best advantages a large hospital, and required the vigorous energy of able-minded trustees to manage the institution as a whole and keep it in existence as an endowed or a self-supporting institution.

The activities of all these various interests centered in the hospital could not proceed without the various societies back of the individuals engaged being equally interested in a subject of such importance. About a year ago, at the call of the President of the American Medical Association, a meeting was held at which it was decided to hold a conference of the societies interested in hospitals, and representatives from the following societies were invited to meet together in September, in Cincinnati:

American Association of Industrial Physicians and Surgeons.

American Association of Hospital Social Service Workers.

American College of Surgeons.

American Hospital Association.

American Medical Association.

American Nurses' Association.

Association of American Medical Colleges.

Catholic Hospital Association of the United States.

Federation of State Medical Boards of the United States.

International Compensation Board.

National League of Nursing Education.

National Organization for Public Health Nursing.

The Medical Departments of the Army and Navy and the U. S. Public Health Service.

At the Cincinnati meeting a permanent conference was organized to meet regularly as a forum for the discussion

and development of the common interests. The separate societies here represented have in the past through misunderstanding and through lack of knowledge of one another's aims, failed to coordinate and have instead often produced discord and brought about results injurious to the best development of the hospital as an institution. It is only through the continuous mutual education of the various groups that the necessary knowledge of what a hospital should be in a community can be developed in the minds of those most interested in hospital work. No individual group of the hospital conference is at present capable of developing the hospitals of this country as they should be developed.

The subject is of such great and constantly increasing importance to the medical profession that it is time the American Medical Association should take cognizance by special action of a subject of such vital interest to its members and should lend its support and influence through definite and continued action. Such action in the American Medical Association can only be brought about through the existence of a standing committee, formed as are the other councils of the American Medical Association.

In the first place the question arises whether or not a new council should be formed or a bureau developed under some existing council. Of the existing councils, the Judicial Council does not come under consideration. Questions of hospital management and development should not be placed among its duties. There is already existing a Bureau of Hospitals under the Council on Medical Education, a report on which is in the handbook at present before you. The activities of this bureau are built around the interests of medical education and the instruction of interns, and its information largely gathered from interns in the hospitals and from those interested in hospitals in the relation to the intern. This bureau has collected and possesses a tremendous amount of information not yet tabulated and at present, therefore, useless, which is not directly of interest in the relation of medical education or the internships, but as soon as tabulated it will be of enormous value to the profession for their information regarding the general situation in hospitals.

Hospitals having interns comprise probably 20 per cent. of all the hospitals in the country. Eighty per cent. of the smaller hospitals scattered through the country will, in all probability, never be able to obtain interns and yet in the mass these must be depended on to give the greatest amount of care to the sick and injured of the country.

One realizes as one reads this report of the Council on Medical Education that the entire hospital situation has been considered solely on the narrow line of rendering hospitals centers for postgraduate training of prospective doctors and the larger aspect of the hospital problem of having the hospitals serve their communities as vital centers in the protection of the population as well as places in which the sick may be cared for is completely ignored.

In reading the report the impression might be gained that the American Medical Association intended to attempt to dominate the entire hospital situation, and domination at the present time is not what is desirable when cooperation is essential to success.

The plan as outlined corresponds exactly to what has been done in regard to medical schools and has worked well in solving this problem, but the hospital question is more extended than that of medical schools, and any attempt to classify hospitals along the single line of whether they possess interns or not does not meet the exigencies of the problem at all, but would be sure to create an antagonism, whether just or not. The Bureau of Hospitals, therefore, should not be under the Council of Medical Education and cannot so be without great injury to the smaller hospitals and without causing incessant antagonism and injury to the medical profession throughout the entire United States. Should it be, however, under the Council on Health and Public Instruction? It is possible for this House of Delegates so to transfer it if in their wisdom they see fit. A committee on hospitals can be formed by the Council on Health and Public Instruction without further action or change in the By-Laws, since

this Council has power to form committees, and it is so stated in the By-Laws.

Can you obtain the best men in the profession to work as a subordinate committee in a bureau under another committee? For such must be the line of communication to the House of Delegates for any definite plans that any bureau on hospitals may care to submit, provided that there are no differences of opinion regarding the carrying out of these plans. The hospital situation in the country is of such great importance that the responsibility for it and for the action of the American Medical Association concerning it must, it would seem, be taken by the House of Delegates itself and the group of men acting for it must have direct and unobstructed access to it at all times to obtain the sanction of the House for its plans for the development of a subject so large and important, reporting of course, as all the councils do, to the Board of Trustees between the meetings of the House of Delegates. It seems, therefore, that the customary action of the House of Delegates should be followed in dealing with a subject that is of great importance and which is bound to grow in this importance and to continue for a long period of time, that is, to form a standing committee to care for the interest of the Association in the matter and to work in cooperation and harmony with all other interests and other societies acting in the same field. It would seem to be wise, therefore, that a new council, and not a bureau under one of the present councils, should be formed to take charge of this subject.

Among the other reasons given in the discussion which has developed up to this time, it is said that there are already too many councils, and also that the American Medical Association could not afford it. In the first place that there are too many councils already, or that to add a new council will make too many, is equivalent to saying that the American Medical Association must take up no further interests; it must be satisfied to be limited in its public interest to preventive medicine and to medical education and that in the further growth of the nation and in the growth of the social conscience of the community for the care of its sick or in other future development or interests of the medical profession, the American Medical Association shall take no further part. Such a view, gentlemen, comes only when men look back at the end of successful careers and cease to look forward. It is not the thought of the vigorous years of life. That the American Medical Association cannot afford to bring into existence a new council on hospitals, but can continue a bureau on hospitals is hardly consistent logic, because the main expense of such a Council is practically connected with the carrying on of an efficient bureau and expanding the efficiency and developing the knowledge already obtained in the present bureau—in short, developing broadly what has already been so well begun.

There is no question that the American Medical Association cannot afford at present to spend great sums in any new direction; neither are great sums here required, particularly since the societies outside the American Medical Association interested in hospital development are not asking nor expecting nor desiring the American Medical Association to shoulder the main expense in the development of the hospital situation. They do expect cooperation and assistance from the American Medical Association, and that cooperation can well be defined and be effective under small expense. The American Medical Association cannot afford to refuse to meet half way these many hospital interests in the development of this great public and professional need. The expense, if properly managed, unquestionably should not be greater than could have been safely borne by the American Medical Association during the last year, and the future outlook of the American Medical Association justifies the adventure.

The advice of the following gentlemen was sought on the hospital situation: Drs. W. J. Mayo, John M. Dodson, Richard C. Cabot, Adrian V. S. Lambert and A. R. Warner. There was no formation of these gentlemen as a committee nor meetings as a committee, but the request was made that they should act as advisers to the President. It is evident

from their communications that in their opinion coordination between the American Medical Association and the other societies, as already mentioned, as represented in the American Conference on Hospital Service is essential for the best development of the hospital situation in the United States. The question of whether this should be done through a bureau in an already existing council of the American Medical Association or through a newly formed council on hospitals brings out differences of opinion. On the one hand, it is believed that the best cooperation can be obtained and the most effective work can be done through a council, rather than a bureau. On the other hand, it was bluntly stated that the other societies in the conference were eager for the cooperation of the American Medical Association but were jealous lest the cooperation should turn into an attempted domination by the largest society, and this was feared and would surely be resented. The discord and antagonism between the College of Surgeons and the American Medical Association was considered so deplorable that everything should be done to bring about its cessation and every endeavor must be exercised to prevent its increase and continuance.

There is a strong feeling among the other societies that a bureau of the American Medical Association under an existing council, as Health and Public Instruction, would create less antagonism than if a separate council were formed. The greatest antagonism of all would arise if the bureau were continued under the Council on Medical Education, since it is believed that the interest of medical education and of interns often runs counter to that of the smaller hospitals. The majority of opinion, however, favors the formation of a separate council rather than a bureau.

The belief has been confidently expressed that though working together in a common interest, mutual confidence and cooperation would soon replace distrust.

In considering the cooperation of various societies interested in hospital work, it seems beyond question that the best results will be obtained if each society continues to be responsible for that special hospital function in which it already has shown the predominant activity. That is, the American Medical Association to continue the predominant guidance of medical education and all matters relating to hospital interns; the College of Surgeons to continue the development of hospital standardization and hospital records, and concentrate its energies therein; the American Hospital Association to develop the administrative functions of hospitals and furnish to all concerned the information required for all physical needs of hospitals. No one group can master all these subjects, and no group should confine its interest to any one subject; but through mutual committees and exchange of information, all facts obtained by each should be forwarded to the other groups to be the common property and knowledge of all. The questions of the future development of nursing and the education of nurses press for solution, and the medical profession must do its share to solve the problems here presented and not stand aloof as it has done in the past. Occupational therapy and the reconstruction of the injured that they may obtain the greatest economic returns from their handicapped existence are new points of view to be reckoned with in estimating the value of the end-results of hospital work. The social service division in hospitals has won for itself recognition as a necessity in hospital responsibility to the patient. It has developed among the laity with tremendous rapidity; but, curiously enough, has won its position in the hospitals not so much against the opposition of the medical profession as it has in spite of the studied and unintelligent indifference of the majority of hospital staffs.

The American Medical Association contains among its Fellows many who are interested in all the various hospital activities, and it is the only society possessing men especially interested in the medical side of the care of the sick as contrasted with the surgical care. It most effectively can supervise the development of the hospital from the standpoint of what is best for the sick individual coming to regain his lost health.

The American Medical Association should not limit its interest to the activities of a bureau under medical teaching

or care of interns, or limit its interest in any way. The responsibilities of the medical profession in the future development of hospitals are as extensive as the hospital activities. The responsibility of the American Medical Association to its members is also equally broad. The American Medical Association can ill afford to neglect its opportunities to assist in the growth of hospital development, nor to refuse to cooperate with all the other societies interested therein. It would seem, therefore, that the interests of the American Medical Association in its relation to hospital development will best be conserved by the appointment of a standing committee on hospitals, and it is recommended that the House of Delegates create a Council on Hospitals and amend the By-Laws to this effect.

Memorial Resolution

Dr. A. T. McCormack, Kentucky, moved that when the House adjourns, it adjourn in honor of the memories of Dr. Emory Marvel, Atlantic City, N. J.; Dr. E. E. Southard, Boston, Mass.; Dr. Floyd M. Crandall, New York, N. Y.; Dr. C. E. Cantrell, Greenville, Tex.; Dr. C. P. Merriweather, Little Rock, Ark.; Dr. K. A. J. Mackenzie, Portland, Ore.; Dr. Abraham Jacobi, New York, N. Y.

Seconded and carried.

Report of the Board of Trustees

Dr. Philip Marvel, New Jersey, Chairman, presented the report of the Board of Trustees. He also presented a supplementary report, both of which were referred to the Reference Committee on Reports of Officers. (See page 1233.)

Report of the Judicial Council

Dr. M. L. Harris, Illinois, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws. (See page 1238.)

Report of Council on Health and Public Instruction

The report of the Council on Health and Public Instruction was called for. Dr. Victor C. Vaughan, Michigan, Chairman, requested the Secretary of the Council on Health and Public Instruction, Dr. Frederick R. Green, Illinois, to read the report.

Dr. Green presented the report, which was referred to the Reference Committee on Legislation and Public Relations. (See page 1239.)

Report of Special Committee on Narcotic Drug Situation

The Speaker stated that there was a special committee appointed last year on Narcotic Drug Situation in the United States, and that Dr. E. Eliot Harris, New York, was Chairman of this Committee. He asked Dr. Harris to present the report.

Dr. Harris requested Dr. A. T. McCormack, Kentucky, a member of the Committee, to present the report, which he did, and then the report was referred to the Reference Committee on Legislation and Public Relations.

The report will appear in *THE JOURNAL* next week.

The House then took a recess until 3 p. m.

Second Meeting—Monday Afternoon, April 26

The House of Delegates reconvened at 3 p. m., and was called to order by the Speaker.

Report of the Council on Medical Education

Dr. N. P. Colwell, Secretary of the Council on Medical Education, in the temporary absence of the Chairman of the Council, Dr. Arthur Dean Bevan, Illinois, presented the report of the Council, which was referred to the Reference Committee on Medical Education. (See page 1243.)

Report of the Council on Scientific Assembly

Dr. J. Shelton Horsley, Virginia, Chairman, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work, and that part of the report relating to Amendments to the By-Laws was referred to the Reference Committee

on Amendments to the Constitution and By-Laws. (See page 1251.)

Dr. Arthur T. McCormack, Kentucky, moved in behalf of the Committee to strike out the statement of Mr. Eugene Debs in the report of the Special Committee on Narcotic Drug Situation in the United States, and that the report be referred to the Reference Committee on Legislation and Public Relations.

Seconded and carried.

Report of the Committee on Red Cross Medical Work

Dr. Charles W. Richardson, District of Columbia, Chairman, presented the report of the Committee on Red Cross Medical Work, which was referred to the Reference Committee on Reports of Officers. (See page 1251.)

(Insert Ends Here)

New Business

Under the head of "new business," Dr. Randolph Winslow, Maryland, presented the following communication, which was referred to the Reference Committee on Miscellaneous Business:

NEW ORLEANS, April 25, 1920.

At a recent meeting of the Baltimore City Medical Society, a paper entitled "An Argument in Favor of the Establishment of a Medical Newspaper, Comparable to the Trade Journal of Other Walks of Life," was read by Dr. Bertram M. Bernheim.

The Society passed a resolution asking that this paper dealing with the advisability of establishing such a journal be laid before the House of Delegates of the American Medical Association for their consideration.

The Society fully realized the difficulties of carrying out such a project at this time, especially on account of the high cost of printing, but nevertheless felt that it was very essential to give this important matter the most serious consideration at this time, especially on account of the tremendous influence it would have on the education of the people of the United States in health matters.

Mr. Speaker, I move that the Secretary be given authority to distribute this paper to the members of the House and to the various officers of the Association, and that the paper be referred to the proper committee for its consideration and report of that part of the communication dealing with the proposed establishment of a Lay Medical Journal by the American Medical Association.

THOMAS S. CULLEN.

Dr. Edward L. Hunt, New York, offered the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

Resolved: That the American Medical Association declares its opposition to the Institution of any scheme embodying a system of compulsory contributory insurance against illness, or any other scheme, which provides for medical service to be rendered contributors or others, provided, controlled or regulated by any State or the Federal Government.

Dr. James F. Rooney, New York, offered the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

Resolved: That the delegates from the State of New York, pursuant to their instructions, desire hereby to express their opposition to any scheme for Compulsory Health Insurance.

Dr. Charles J. Whalen, Illinois, and Dr. F. C. Warnshuis, Michigan, representing their State Delegations, supported the resolution offered by Dr. Rooney.

Dr. Frederic E. Sondern, New York, presented the following, which was referred to the Reference Committee on Hygiene and Public Health:

At the last Annual Meeting of the Surgical Section of the Medical Society of the State of New York, the following resolution was passed: "It is moved that the Chairman of this Section be empowered to appoint a Committee of Seven from the Medical Society of the State of New York and an honorary committee of seven American Medical Association members (Barker, Cushing, W. Mayo, Longcope, Billings, Tinker, Jones) to review the question of the sale of endocrine products and combinations without a physician's prescription and if they approve such action to bring the matter to the attention of the American Medical Association House of Delegates for the purpose of further action to prevent the sale of endocrines without a prescription.

WHEREAS: The promiscuous use of the laity of preparations of the glands of internal secretion has led to manifest harm, and

WHEREAS: The uncontrolled use of potent glandular derivatives carries with it the danger of self-medication, be it

Resolved, That the Surgical Section earnestly request that the American Medical Association take the necessary steps to prevent any endocrine preparation being sold to the public except on a physician's prescription. This resolution will be endorsed this afternoon by the Association for the Study of Internal Secretions now in session.

Dr. F. F. Russell, U. S. Army, spoke of the necessity of having published the medical and surgical history of the World War, and stated that the Surgeon-General of the Army had asked Congress to appropriate \$150,000 for this purpose. This history would make approximately fifteen volumes of 600 pages each, and that the edition would be 5,000 copies. He moved that a committee of three be appointed by the Speaker to draft a resolution approving in principle the use of this money by Congress for this purpose.

Seconded and carried.

Ad-Interim Committee

The Secretary presented the following report for the Ad-Interim Committee:

NEW ORLEANS, April 25, 1920.

To the House of Delegates, American Medical Association.

GENTLEMEN:—Speaking for the Ad-Interim Committee, there is one brief matter to report.

About Oct. 1, 1919, a letter was received by the President of the American Medical Association from the Surgeon-General of the Army, containing this paragraph:

"It is requested that you obtain from the members of the American Medical Association, who served in the World War, suggestions with regard to the function and administrative organization of the medical corps of the Army."

To which the President replied: "As President of the American Medical Association, it is my firm conviction that no greater service can be rendered by the profession of this country to the Army, than by giving constructive suggestions for your consideration, tending toward improvement and development of the Army Service."

A meeting of the Ad-Interim Committee was called and was held in Chicago to consider the request of the Surgeon-General. The question was of such importance that the Committee conferred with the Board of Trustees then in session. It was agreed between the Board of Trustees and the Ad-Interim Committee that it would be unwise at that time to proceed without further consultation with the Surgeon-General of the Army. A committee, consisting of the President of the American Medical Association, with Drs. Billings and Simmons, was appointed to confer with Surgeon-General Ireland. A conference was then held with the Surgeon-General, General McCaw and Colonel Russell, in Chicago, on December 1.

At this meeting, it was agreed: First, to request sanction from the House of Delegates that the American Medical Association should assist, in every way possible, in the development of the Walter Reed Medical School, which it is hoped will become the nucleus of a more comprehensive medical center project now in contemplation. Second, that an effort was contemplated to have sanctioned by the medical schools requiring an intern year before a medical degree in the Walter Reed or other Army hospitals as hospitals in which students could serve as interns and be duly credited for a degree by such service. Third, it was further agreed that when Congress should pass the Army Reorganization Plan, the finding on what basis the Medical Corps and Medical Reserve Officers should act, then the Surgeon-General would submit for constructive suggestions a plan of reorganization of the Medical Corps and Medical Reserve Corps to a Committee of Medical Reserve and Regular Officers having had experience at home and abroad in the recent war. Until such time as these preliminaries are accomplished, there appears to be no further action necessary to be taken by the Committee of the American Medical Association as appointed by the Ad-Interim Committee.

It is therefore recommended that the House of Delegates confirm the action of this subcommittee acting for the Ad-Interim Committee.

Dr. A. T. McCormack, Kentucky, moved that the action of the Ad-Interim Committee be approved.

Seconded and carried.

Dr. H. B. Gibby, Pennsylvania, Chairman, presented a supplementary report for the Committee on Credentials, stating that 107 delegates had been so far seated.

It was moved and seconded that the report be accepted.

Carried.

The Speaker appointed the following committee to prepare suitable resolutions asking Congress to publish as soon as possible the medical and surgical history of the War: Dr. Gerald B. Webb, Colorado; Dr. Walter R. Steiner, Connecticut, and Dr. Leroy Crummer, Nebraska.

Dr. John D. McLan, Pennsylvania, stated that a resolution was introduced last year in the House of Delegates urging that the publications issued by the Surgeon-General of the Army during the War be placed in such a position as to be available to the medical profession, but that he could not find any record of the resolution.

Dr. Frank Billings, Illinois, stated that this resolution was referred to the Board of Trustees. After conference with the Surgeon-General of the Army, other officers, and the Librarian, the Board of Trustees found there were no available books for distribution to the medical profession. He further stated that the supply of books published by the Army Medical Department and offered for free distribution had been exhausted.

On motion, which was duly seconded and carried, the House of Delegates adjourned to meet at 9:30 a. m., Tuesday, April 27, 1920.

(To be continued)

Causes of Death in U. S. Registration Area.—The Census Bureau's annual compilation of mortality statistics for the death registration area in continental United States shows 1,068,932 deaths as having occurred in that area in 1917, representing a rate of 14.2 per 1,000 of population. Of these deaths, nearly one third were due to three causes—heart diseases, pneumonia and tuberculosis—and nearly another third resulted from the following nine causes: Bright's disease and nephritis, apoplexy, cancer, diarrhea and enteritis, arterial diseases, influenza, diabetes, diphtheria and bronchitis. The deaths from heart diseases (organic diseases of the heart and endocarditis) numbered 115,337, or 153.2 per hundred thousand population. Pneumonia (including bronchopneumonia) was responsible for 112,821 deaths, or 149.8 per hundred thousand. Tuberculosis in its various forms caused 110,285 deaths, of which 97,047 were due to tuberculosis of the lungs. The death rate from all forms of tuberculosis was 146.4 per hundred thousand, and from tuberculosis of the lungs, 128.9. Bright's disease and acute nephritis caused 80,912 deaths, or 107.4 per hundred thousand. Apoplexy was the cause of 62,431 deaths, or 82.9 per hundred thousand. Cancer and other malignant tumors caused 61,431 deaths, of which number 23,413, or 38 per cent., resulted from cancer of the stomach and liver. The rate from cancer has risen from 63 per hundred thousand in 1900 to 81.6 in 1917. Diarrhea and enteritis caused 59,504 deaths, or 79 per hundred thousand. Arterial diseases of various kinds, atheroma, aneurysm, etc., resulted in 19,055 deaths, or 25.3 per hundred thousand. Influenza was responsible for 12,974 deaths, or 17.2 per hundred thousand. Deaths from diabetes numbered 12,750, or 16.9 per hundred thousand. Bronchitis caused 12,311 deaths, or 16.3 per hundred thousand. Typhoid fever resulted in 10,113 deaths, or 13.4 per hundred thousand. Measles, whooping cough and scarlet fever were together responsible for 21,723 deaths of both adults and children, or 28.8 per hundred thousand. The rates for the three diseases separately were 14.3, 10.4 and 4.2, respectively. Deaths due to external causes of all kinds—accidental, suicidal and homicidal—numbered 81,953 in 1917, corresponding to a rate of 108.8 per hundred thousand population.—*Pub. Health Rep.* 34:1474 (July 4) 1919.

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SATURDAY, MAY 1, 1920

POISON IVY, OAK AND SUMAC

There are many perennially recurring menaces to health which the physician is never allowed to overlook or forget, because the advent of afflicted patients serves as a potent reminder. If the cause of danger is an avertible one, like the fourth-of-July fireworks or the human contamination of water supplies bringing about a high morbidity rate for typhoid fever, it is well worth while to keep preaching the necessity of prevention. The campaigns of warning and education carried on annually by THE JOURNAL in relation to the two life-threatening features just cited, for example, have finally resulted in greatly reducing the harm done by eradicating the causes or at least reducing their frequency. At this season the publicity columns are likely, and with good reason, to direct attention to the impending menace of the mosquito and the undesirability of the fly.

The summer season is likewise the period when poisonous plants flourish and exert their noxious effects. Hence it is timely to send out the usual warnings about ivy and sumac poisoning.¹ The species of *Rhus* which are responsible for it infest virtually all parts of the country, except mountain elevations above about 6,000 feet and arid lands. They are not infrequently found growing along city streets, in parks and on private property as well as in the fields, pastures and woodlands of the country. Consequently there is scarcely a physician who has not encountered cases of intoxication from these poisonous plants. Indeed, medical experience testifies to the widespread discomfort and even serious illness which annually result.

It is generally agreed that the active principle common to the poison oak, ivy and sumac is toxicodendrol, an acid resin (not an oil, as stated in *Public Health Reports*). As little as 0.001 mg. is said to be sufficient to produce vesication of the skin. This remarkable potency must be kept in mind in attempting to explain the readiness of injury and the ease with which the poison "spreads" on the skin. Several commonly

quoted peculiarities of ivy poison need to be critically considered. One of these is the belief that persons of suitable susceptibility may become poisoned without any contact whatever with the harmful plants. One frequently hears the statement that the mere observation or passing of the plants may be followed by intoxications. As toxicodendrol is nonvolatile, such alleged occurrences, often reported from apparently authentic sources, need careful consideration. The government experts have reached the conclusion that probably many cases supposed to have originated through the transfer of some volatile emanation have actually been due to direct or indirect contact. The exact manner in which the poisoning has occurred may readily be overlooked, since in many instances the appearance of the eruption is delayed for several days, and traces of the poison sufficient to produce injury may be conveyed by clothing or other articles long after contact with the plants. Sweet and Grant¹ add that numerous attempts to produce poisoning experimentally by emanations from *Rhus* plants, and from the active principle itself, have been unsuccessful. On the other hand, there is excellent foundation for the popular belief that smoke from the burning plants will give rise to irritation, and some of the worst cases of *Rhus* poisoning undoubtedly originate in this manner. Another tradition concerns the alleged immunity of certain persons. Here, too, careful investigation tends to indicate that this is at best one of degree, and that complete insusceptibility of man has neither been demonstrated nor induced.

In considering a rational treatment, it should be known that the irritant substance is soluble in alkalis, in gasoline and in alcohol, but is precipitated by lead acetate. At one time lead washes formed a popular treatment for ivy poisoning. They accomplish at best the precipitation of the poison in situ. It must then be removed in some way to avert further danger; and many persons are susceptible to intoxication by lead as well as by ivy poison. The widely advocated scrubbing with soap and hot water is efficacious only so far as it mechanically removes the toxicodendrol before it penetrates the skin. To spread the toxic agent inadvertently by washing rather than to remove it can only aggravate the danger. This applies particularly in the case of commonly used alcoholic lotions; their use must be thorough and liberal lest they merely serve to dissolve the poison and hence distribute it. The treatment with hot alkaline solutions of potassium permanganate is not as widely recognized as it merits to be. The principle involved consists in the destruction of the poison by this oxidative agent. The discoloration of the skin by the reagent can readily be removed by lemon juice or other means.

The physician has in this connection a larger function than the mere diagnosis and relief of ivy poisoning. He ought to lead in an effective crusade to destroy the

1. A timely paper on this subject has been published by the U. S. Public Health Service (Sweet, E. A., and Grant, C. V.: Ivy and Sumac Poisoning, Pub. Health Rep. 35:443 [Feb. 27] 1920) from which various statements have been taken.

noxious vegetation, which flourishes in most unsuspected places. A campaign of popular education in the nature of the dangers involved as well as in the recognition of the harmful plant forms should be started every year. Communities should be waked up to the importance of eradicating the persistently growing poison ivy. It is surely not too much to expect that a few seasons of persistence fostered by medical sanction will decrease one of the causes of a "seasonal torment" that need not be with us.

DOES HEMATOGENOUS JAUNDICE OCCUR?

The occurrence of jaundice as a symptom of conditions in which there is an obstruction of the bile ducts either outside of the liver or within the hepatic tissue has long been readily understood. In contrast with this obstructive or mechanical jaundice, there has been considerable discussion in recent years regarding the possibility of a nonobstructive type, referred to commonly as hemolytic jaundice. For the genesis of this it has been assumed that hemoglobin, the assumed precursor of the bile pigments, is somehow liberated in abnormal quantities in the circulation. From this free blood pigment bilirubin is supposed to be formed apart from any participation of the liver, in which the conversion normally takes place. Such considerations have therefore led to the differentiation of the usual "hepatogenous" jaundice from the less common "hematogenous" jaundice in which, no disorder of the liver or biliary ducts being apparent, the bile pigments were supposed to be found in the blood vessels or elsewhere in consequence of the destruction of erythrocytes and the conversion into bilirubin of the blood pigment thus liberated.

In order to establish the independent identity of the so-called hematogenous or nonobstructive jaundice, it is necessary to be able to exclude all conditions which might involve obstruction to the usual flow of bile at any point in its course from the liver cells. Among the facts offered in evidence for the existence of the nonhepatic jaundice has been the failure to find either macroscopic or microscopic indications of interference with secretion when necropsies in supposed cases have been performed. Furthermore, it is pointed out that in the alleged hematogenous jaundice the stools are normally colored, so that no lack of a discharge of bile into the bowel, such as occurs in biliary obstruction, can be assumed. Again, it is pointed out that a tendency to anemia associated with a susceptibility of the red blood corpuscles to hemolysis often constitutes the appropriate accompaniment of the jaundice symptoms. Finally, the removal of the spleen, an organ which has frequently been held responsible for the hemolytic phenomena, is said to abolish the jaundice of hematogenous origin; in the latter event the liver and its ducts can scarcely be assumed to play any part.

Without reviewing further the varied arguments that have been advanced in support of the occurrence of a jaundice independent of any liver factors, it should be understood that such statements have not been allowed to go unchallenged. The classic objection is found in the well-known experiments of Minkowski and Naunyn demonstrating, for some species at least, that although extensive hemolysis accompanied by icterus can be induced by means of certain poisons, jaundice does not ensue if the liver has been previously removed. Again, it has repeatedly been pointed out that in cases of assumed hematogenous jaundice, the existence of minute obstructions of the bile passages and the occurrence of hepatic lesions discoverable only by careful histologic study undoubtedly occur.

Naunyn,¹ to whom we owe many important contributions to the knowledge of jaundice, in lately reviewing his extensive experience, has remarked that in considering so-called hemolytic jaundice in individual cases, all too little attention has been paid to the possible existence of obstruction factors. Thus, he asserts that there is no convincing evidence whether bile salts are actually absent or present in the icteric urine. The presence of these compounds would at once point to a hepatogenous origin of the jaundice. Naunyn, who is convinced that the liver plays a part in all cases, regards hemolytic jaundice as the outcome of an infectious disease in which a cholangitis frequently is the conspicuous feature. The harmful agent, whatever it may happen to be, is believed to find its way to the liver as a rule from intestinal sources. The implication is that if more careful studies of the liver could be made at suitable times, hepatic damage sufficient to produce partial obstruction would be detected. In other words, icterus invariably means implication of the liver.

Gerhart² also has recently come to a similar conclusion. He points out that at times the stools of patients suffering from hemolytic jaundice are actually decolorized, or the pigments may be diminished. Hence, careful repeated observations may disclose symptoms of bile obstruction when they are unsuspected. The determination of the degree of obstruction, i. e., the complete or incomplete freedom of bile flow, is not easy, so that the argument of color in the feces must be used with caution by advocates of either side of the controversy. Gerhart likewise intimates the difficulty of excluding minute obstructive changes in the liver—alterations too small for obvious notice, yet sufficient to produce some reabsorption of bile in localized areas. He has also cited cases in which relief gained from extirpation of the spleen was only temporary, in harmony with the fact that the fundamental liver factors are by no means excluded through

1. Naunyn, B.: Der Ikterus und seine Beziehungen zu den Cholangien (Erkrankungen der Gallenwege), *Mitt. a. d. Grenzgeb. d. Med. u. Chir.* **31**: 537, 1919.

2. Gerhart D.: Beitrag zur Lehre vom hämolytischen Ikterus, *Mitt. a. d. Grenzgeb. d. Med. u. Chir.* **31**: 644, 1919.

this surgical procedure. Finally, numerous cases of hemolysis in which jaundice never occurs can be cited.

Before abandoning the theory of an independent hematogenous jaundice, it must be recalled, however, that Whipple and his associates in San Francisco have reported experimental evidence of the occurrence of bile pigments in the urine after injection of hemoglobin into dogs with the liver excluded from the circulation. What value is to be assigned to these observations in the face of the current tendency to reemphasize the significance of the liver in most, if not all, forms of jaundice remains to be seen.

ALIMENTARY PROTECTION AGAINST HEMOLYTIC STREPTOCOCCI

Hemolytic streptococci have deservedly acquired the reputation of being dangerous invaders of the human organism. The menace which they represent has been aggravated of late by the repeatedly verified observations that these types of micro-organisms are frequently harbored not only by the sick, but also by normal persons. For this reason the unsuspected dissemination of the streptococci becomes a serious possibility. Cultural studies made in various army camps during the war gave indisputable evidence of the large extent to which the hemolytic streptococci are found in the throat and tonsils.¹ As an illustration, we may cite Smillie's² observation that about 50 per cent. of normal throats harbor these bacteria; the assertion of Blanton, Burhans and Hunter³ that hemolytic streptococci could be obtained from the tonsils of normal persons in 90 per cent. and from the depths of the tonsils in 80 per cent. of their cases; and likewise the observations of Pilot and Davis,⁴ showing that in the crypts of the faucial tonsils hemolytic streptococci occur in nearly 100 per cent. Such facts have been brought to bear on the question of the efficacy of complete tonsillectomy as a procedure for the elimination of a breeding place for hemolytic streptococci.

From the foregoing circumstances it becomes evident that large numbers of streptococci must be constantly passing beyond the pharynx into the alimentary canal. Furthermore, the same dangerous types can reach the gastro-enteric tract through the medium of food. What becomes of them? Are they readily destroyed by some protective mechanism in this part of the body, or do they continue to thrive and furnish an added menace by reappearing in the stools ready for further dissemination in sewage? These questions

have recently been put to a test by Davis,⁵ who examined the feces in fifty-three cases without finding hemolytic streptococci. They were absent even from the feces of scarlet fever patients, who almost always have these micro-organisms in their throats in very large numbers.⁶

As hemolytic streptococci are not ordinarily found in appreciable numbers in the gastro-intestinal tract of rabbits, though these animals are especially susceptible to experimental infection with *Streptococcus hemolyticus*, Davis introduced large amounts of virulent cultures of the organisms into the stomach of this species. Occasionally the bacteria pass through the canal under these exceptionally severe conditions and appear in the feces. As a rule, they do not thrive or gain a permanent foothold there. Rabbits with generalized streptococcus infection in the joints and blood showed no hemolytic streptococci in the intestinal contents.

One naturally inquires how this alimentary protection is acquired. Davis has referred it to the gastric secretion. Juice of normal acidity from man kills hemolytic streptococci within five minutes, though the gastric secretion in achylia may not kill them in several hours. This is only a new added instance emphasizing the enormous advantage of proper acidity in the stomach in controlling the alimentary flora. In the fecal mixture at body temperature, *Streptococcus hemolyticus* likewise does not seem to thrive long. Such facts may serve to exonerate this type of streptococci from primary responsibility for some of the manifestations of enteritis which were charged to it before the modern sharp differentiations could be made. Whether or not hemolytic streptococci play a significant part in the production of pathologic lesions of the bowel, under conditions in which the defenses against the microbial invaders fail, remains to be more carefully investigated.

Current Comment

THE TREATMENT OF ATROPHY IN DENERVATED MUSCLES

When the nerve supply to a peripheral muscle is interfered with, atrophic changes in the latter are likely to follow. The atrophy, until recently, has usually been ascribed to the inactivity supposed to follow the loss of innervation. The routine treatment has therefore been of a character expected to counteract the disuse of the contractile tissue. Electric stimulation, massage, passive movements, hydrotherapy and other mechanical procedures have been employed to avert muscular atrophy, particularly when there seems to be a chance for a regeneration of the nervous connections if all the tissues concerned are kept in good physiologic con-

1. Some of the literature is reviewed by Tongs, M. S.: Hemolytic Streptococci in the Nose and Throat, J. A. M. A. **73**: 1050 (Oct. 4) 1919, in a paper representing studies concluded with the aid of a grant from the Committee on Scientific Research of the American Medical Association.

2. Smillie, W. G.: Beta Hemolytic Streptococcus, J. Infect. Dis. **20**: 45 (Jan.) 1917.

3. Blanton, W. B.; Burhans, C. W., and Hunter, O. W.: Studies in Streptococcal Infections at Camp Custer, Mich., J. A. M. A. **72**: 1520 (May 24) 1919.

4. Pilot, I., and Davis, D. J.: J. Infect. Dis. **24**: 386 (April) 1919.

5. Davis, D. J.: The Fate of Streptococcus Hemolyticus in the Gastro-Intestinal Canal, J. Infect. Dis. **26**: 171 (Feb.) 1920.

6. Ruediger: J. Infect. Dis. **3**: 755, 1906.

tion. The Cambridge physiologist Langley¹ suggested four years ago, however, that muscular atrophy in a denervated muscle is due, not to inactivity, but to continuous fibrillation. A connection between atrophy and fibrillation has long been recognized; thus, Barker² wrote in 1910: "Where the degenerative atrophy is due to lesion of the anterior horns or of the motor nuclei of the cerebral nerves, fibrillary twitching is commonly present." The relations of cause and effect are not clearly indicated here. If the disuse theory is to be abandoned, there seems to be no rational basis for the employment of therapeutic measures intended to promote the circulation and thus retain the nutrition and functional capacity of the muscles involved. Actual experimentation on animals with denervated muscles has, indeed, shown the futility of electrical stimulation and massage. As a denervated muscle is not a muscle at rest, the only indication of possible success in treatment thus far found has been in ionization with salts to stop the twitching.³ The report recently published in THE JOURNAL by Hartman and Blatz⁴ is a further record of inability to demonstrate benefit from either galvanic stimulation or massage. As was to be anticipated, the fibrillation was not checked. Although it may not be a welcome necessity to throw the current treatment of such muscular atrophy into the discard, particularly when no promising substitute procedures are suggested, a frank recognition of the truth alone can lead to progress.

CHOLIN IN THE BODY

Cholin is a nitrogenous base which can be obtained as a derivative of the phosphatid lecithin by mild decomposition. Cholin is not devoid of physiologic potency, though it can scarcely be regarded as a pronouncedly toxic substance. Some closely related compounds, notably neurin and muscarin, are far more potent. A few years ago it was widely believed that cholin might arise from disintegration of lecithin in the nervous tissues, in which the lipoid is abundant, or elsewhere in the body, and might exhibit toxic effects. These were assumed, for example, to manifest themselves in certain types of nerve degeneration and in the cell destruction following application of roentgen rays. There is reason to believe now that many of the earlier reports of the presence of cholin in blood and tissue fluids rest on inaccurate procedures of analysis. Reid Hunt,⁵ who devised a physiologic test that permits detection of as little as 0.00001 mg. of cholin, was unable to obtain evidence that this substance is of any significance in either physiologic or pathologic processes. A corroboration is further afforded by the studies of Guggenheim and Löffler⁶ at Basel. They estimate that a liter of blood serum contains from 0.002 to 0.02 gm.; the same quantity of urine contains

about the same proportion of cholin. In several diseases investigated, no characteristic variations in the content of cholin in the body fluids could be observed.

BOTULISM DUE TO OLIVES

The continued occurrence of fatal outbreaks of botulism poisoning caused by contaminated olives prompts our frequent reference to this situation. Many of the features of botulism outbreaks are still quite obscure; and in view of the urgent necessity for practical methods of prevention, every contribution to our knowledge of this form of food poisoning should be closely considered by sanitarians and health officials. The summary of the investigations of the Bureau of Chemistry on olive poisoning, given elsewhere in this issue,¹ contains material of general interest and practical application. Four of the five outbreaks reported in the summary were due to a toxin produced by the Type A of *Bacillus botulinus*; the organism responsible for the fifth attack is not yet differentiated. Type A is the type found in California, and differs from the type present in the Eastern states and apparently from that observed in Europe. The summary leaves one in some uncertainty as to whether green olives as well as ripe olives have been implicated in botulinus poisoning. In the Montana outbreak, olives stuffed with pimiento are considered to have been the source of the trouble, and in another instance "olive relish" in a tin container was the substance involved. It is not clear whether the "relish" was made of green or ripe olives, but it is certainly true that green and not ripe olives are commonly used for "stuffing." The title of the Bureau of Chemistry summary, on the other hand, seems to limit the poisoning to ripe olives, so that a clear statement on this point seems desirable. The important question as to whether or not *B. botulinus* contamination in canned food is always accompanied by physical signs of decomposition seems to be answered in the affirmative by the experience of the government investigators. They state that in all of the material examined by them in which *B. botulinus* was present, the odor was distinctly offensive. This characteristic is a doubtful safeguard, however, since olives washed, iced or served with highly flavored foods may not betray their dangerous nature, particularly to persons unfamiliar with the natural taste of ripe olives. The source of the odor does not seem to be cleared up by these investigations. Whether the disagreeable smells are due to the products of *B. botulinus*, or whether the other micro-organisms apparently always present in the imperfectly sterilized contents of the jar or can have given rise to the putrefactive conditions, is left undetermined by the evidence printed in the article cited. The conclusions of the Bureau of Chemistry workers that more efficient methods of sterilization should be employed, that brine packing should be modified, and that olives should be handled with the same degree of care and cleanliness as any other perishable food product seem abundantly justified.

1. DeBord, G. G.; Edmondson, R. B., and Thom, Charles: Summary of Bureau of Chemistry Investigations of Poisoning Due to Ripe Olives, this issue, p. 1220.

1. Langley, J. W.: J. Physiol. **50**: 337 (July) 1916.

2. Barker, L. F.: Diseases of the Nervous System, Osler's Modern Medicine **7**: 70, 1910.

3. Langley and Hashimoto: J. Physiol. **52**: 15, 1919. Langley, J. N., and Kato, I.: Ibid. **49**: 417, 1915.

4. Hartman F. A., and Blatz, W. E.: Treatment of Denervated Muscle, J. A. M. A. **74**: 878 (March 27) 1920.

5. Hunt, Reid: J. Pharmacol. **7**: 301, 1915.

6. Guggenheim, M., and Löffler, W.: Ueber das Vorkommen und Schicksal des Cholins im Tierkörper: eine Methode zum Nachweis kleiner Cholinmengen, Biochem. Ztschr. **74**: 207 (April) 1916.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Frank W. McCorkle, Huntsville, has resigned as assistant health officer of Madison County to become county health commissioner of Decatur County, Ga. Dr. Roscoe C. Stewart, Huntsville, has been selected as Dr. McCorkle's successor.

Bacteriologic Society Organized.—The Birmingham Bacteriological Society, with a charter membership of fourteen, was organized by laboratory experts and physicians at Birmingham, March 17. Dr. A. H. Olive was elected president; Miss Blanche Frazier, vice president, and Dr. James R. Bean, secretary-treasurer.

CONNECTICUT

Personal.—Dr. Walter H. Brown, health officer of Bridgeport, has been appointed associate director, department of health service, national headquarters, American Red Cross. —Dr. John W. Churchman, New Haven, professor of surgery in Yale University, has been named *Officier de l'Académie* with silver palms in recognition of work done as chief of the medical service of Military Hospital No. 32 bis, during 1916. —Dr. William B. Terhune, New Haven, has been appointed director of the division of mental hygiene of the state board of health.

ILLINOIS

Chicago

Personal.—Dr. William R. Cubbins has been appointed chief of the surgical staff of Cook County Hospital; Dr. Joseph A. Capps, chief of the medical staff; Dr. Channing W. Barrett, chief of the gynecologic staff; Dr. Edwin R. LeCount has been placed in charge of the pathologic laboratories and Dr. Julius Hess of the department of diseases of children. —Dr. Daniel H. Williams has been honored by the University of Pennsylvania by having his name given to a special organization among the medical students, known as the Daniel H. Williams Surgical and Oral Society. The prime object of the organization is to encourage research work.

Teaching Health to Children.—A child health school for the training of teachers of health to children will be held this summer at the University of Chicago. There will be a group of underweight children to serve as a demonstration of methods of conducting nutrition classes and teaching general health habits. Assistant Prof. Lydia J. Roberts of the department of home economics, who has recently returned to the university after making a nutrition survey of children for the U. S. Children's Bureau, will be the director, and Dr. Mendenhall of the Children's Bureau and Dr. Walter H. O. Hoffmann of Rush Medical School will serve as medical advisers.

INDIANA

Nurses' Home at City Hospital.—The city board of health of Indianapolis has decided to start action to provide a bond issue for the construction of a nurses' home at the City Hospital. The undesirability of the living quarters has made it difficult for the hospital to keep up its required staff of nurses.

Personal.—Dr. James B. Young, Cumberland, has been appointed associate medical director of the Indianapolis Life Insurance Company, succeeding Dr. Mitchell A. Devaney, deceased. —Dr. Charles C. Crampton, Delphi, has been elected commander of the local post of the American Legion.

Postgraduate Course.—The Indiana University School of Medicine will give a postgraduate course in disease production and immunity in its department of pathology, beginning June 1, 1920. The course will cover a period of six weeks of lectures and laboratory work.

IOWA

Clinic at Grinnell.—A free clinic for children needing medical or surgical attention has been established at St. Francis' Hospital, Grinnell.

Personal.—Dr. Jefferson D. Blything has been appointed city physician of Davenport on recommendation of the Medical Society of Davenport. —Dr. James W. Richards has been appointed health physician of LeClaire. —Dr. Alphonse L. Hageboeck, Davenport, was elected commodore of the Davenport Boat Club, April 5. —Dr. Charles L. Barewald has been elected mayor of Davenport. —Dr. Don M. Griswold, Iowa City, has accepted the chair of public health and hygiene in the Medical School of the University of Iowa, and by this acceptance becomes state epidemiologist.

MARYLAND

Personal.—Dr. William H. Welch, for thirty-five years pathologist of Johns Hopkins Medical School and now director of the School of Hygiene and Public Health, celebrated his seventieth birthday anniversary, April 8. —Dr. Winifred Cullis, professor of physiology in the London School of Medicine for Women, University of London, and chairman of the Committee on International Relations of the University Women of Great Britain, spoke in Baltimore at the College Club recently both to the students of Goucher College and to the College Women of Baltimore.

University of Maryland Enlarged.—A bill recently passed by the Maryland legislature combines the Maryland State College of Agriculture with the University of Maryland School of Medicine under the name of the University of Maryland. The new institution now possesses, therefore, a college of arts and sciences, a military school and schools of medicine, dentistry and pharmacy. A new board of nine trustees has also been established. The legislature also appropriated \$42,500, each year, for the medical school for the next two years and in addition appropriated \$185,476.85 for the other departments of the university for the year 1921, and \$165,416.89 for the year 1922. Another appropriation of \$203,000 was made for buildings and equipment. This adds one more to the list of states having state universities, the total now being twenty-nine.

MICHIGAN

Clinic Opened.—A clinic for the treatment of crippled and deformed persons has been opened in Detroit under the auspices of the local board of health. The expenses are being paid by the Sigma Gamma fraternity, and members of that organization are serving as attendants. Drs. Carroll L. Storey and Nathaniel Ginsberg are in charge of the clinic.

The Carstens Semicentennial.—Members of the Wayne County Medical Society gave a testimonial dinner, April 13, in honor of Dr. J. Henry Carstens, Detroit, who has just completed his fiftieth year as a practitioner of medicine. Dr. George E. McKean, president of the Wayne County Medical Association, officiated as toastmaster, and speeches touching on different phases of Dr. Carstens' life were made by Drs. Daniel La Ferte, Theodore A. McGraw, Guy L. Kiefer, Preston M. Hickey, Angus McLean, John N. Bell and H. Wellington Yates.

MINNESOTA

Personal.—Dr. Leroy E. Doolittle has been appointed school physician of Duluth. —Dr. Archibald L. McDonald, Duluth, has been elected president of the St. Louis County Medical Association and Dr. Herbert G. Lampson, secretary.

Health Work in State.—Following out an idea which originated when Dr. Walter R. Ramsey, St. Paul, suggested that the children's specialists of the state organize and bring their advice to the inhabitants of the counties rather than to restrict expert diagnosis of the children's cases to people living in the larger cities, twenty-four specialists on diseases of children, ten dentists, fourteen medical directors of tuberculosis sanatoriums, many eye and ear experts, the Minnesota Obstetrical and Gynecological Society and a trained dietitian have formed an advisory staff for the Minnesota Public Health Association and have conducted health clinics in almost every county of the state during the last year.

NEW YORK

Poster Contest Time Limit Extended.—The time limit of the contest started by the bureau of venereal diseases of the state department of health in which a prize of \$100 was offered for the best poster illustrating the quotation "Healthy Parents Head Happy Families," and which was noted in THE JOURNAL of March 13, has been extended from May 1 to June 1.

Clean-Up Week.—In a letter to mayors, village presidents and boards of health, Dr. Hermann M. Biggs, state commissioner of health, has designated the week beginning April 1 as the annual clean-up week. The commissioner emphasizes the necessity of impressing the citizens of each community with the date and purpose of clean-up week in order that the large amount of filth and rubbish which has accumulated during the winter may be collected and properly disposed of. Local authorities are urged to make adequate provision for the prompt removal and destruction of all such material. The suggestion is made that a local committee composed of representatives of various organizations be formed in each community for the purpose of supervising the work.

New York City

Jacobi Memorial.—The New York Academy of Medicine will hold a memorial meeting in honor of Dr. Abraham Jacobi's ninetieth birthday anniversary, May 6, at 8:30 p. m. As a relief of Dr. Jacobi will be presented by George C. Aneny and will be accepted by the president of the academy, Dr. George David Stewart. The principal address will be delivered by Dr. George E. Vincent of the Rockefeller Foundation.

New Quarantine Regulations.—Amendments to the sanitary code provide the following minimum periods of quarantine: diphtheria, twelve days from onset, after which until two cultures taken not less than twenty-four hours apart, preferably from both nose and throat, fail to show the presence of diphtheria bacilli; scarlet fever, thirty days after onset, providing discharges from nose and ears have ceased; cerebrospinal meningitis, fourteen days from onset; acute anterior poliomyelitis, three weeks from onset; typhoid fever, until ten days after the patient's temperature reaches normal, and further until two specimens of feces collected after an interval of at least twenty-four hours are found to be free from typhoid bacilli.

PENNSYLVANIA

Institutions Closed.—The Emergency Hospital, Erie, established to meet the scarlet fever epidemic, closed for the reception of patients, April 3, and will definitely close the end of this month.—State Health Department Dispensary No. 11, Chambersburg, established by the late Dr. H. X. Conbrake, was discontinued, March 26.

Personal.—Dr. James F. Trimble, Greensburg, has been appointed medical director of Westmoreland County.—Dr. Fred Wade Paton, Bradford, medical director of McKean County, has resigned.—Dr. Isaac H. Shelly, Jr., Ambler, has been appointed a member of the eye, ear, nose and throat staff of the Montgomery County Hospital and also consultant at the Norristown State Hospital.

New Officers.—At the annual meeting of the board of directors of the Pennsylvania Society for the Prevention of Tuberculosis held in Philadelphia, April 14, Dr. James M. Anderson, Philadelphia, was elected president of the board of directors, succeeding Dr. Thomas McCrae, Philadelphia; Drs. Joseph S. Neff, William D. Robinson, Philadelphia, and Dr. William C. White, Pittsburgh, were elected vice presidents; Dr. Ware Brinton, Philadelphia, was made secretary; Dr. William Hart, treasurer, and Drs. Elmer H. Funk, Philadelphia, and Thomas McCrae, Philadelphia, were elected members of the board.

State Police to Aid in Fighting Disease.—Important cooperative work between the state police force and the state department of health in the campaign for eradication of social diseases has been arranged and hereafter when state policemen make arrests in raids, medical officers will accompany them and conduct examinations. If necessary, state policemen will assist the health authorities in maintenance of a quarantine against persons found suffering from infectious diseases. The details of the cooperative plan were worked out by Major Lynn G. Adams, the superintendent, following an address to the troop officers by Dr. Sigmond L. Gans of the department of health, who outlined the procedure under the act of 1919. State police work in the bureaus of fire protection and criminal identification will be materially expanded this year.

Philadelphia

Appropriation for Insane.—An ordinance to appropriate \$50,000 to improve conditions of the insane at the Philadelphia General Hospital and to create thirty-eight important positions was approved by council's health committee, April

22, and referred with a favorable recommendation to the finance committee. The new system established would range from a medical director at \$5,000 a year to two hydrotherapists at \$900 a year each, requiring an appropriation of \$35,373 annually. The ordinance would also appropriate \$14,000 for alterations necessary for the introduction of new methods of treatment of patients at the institution.

Personal.—Drs. John Welsh Croskey and Lawrence Webster Fox have been elected censors of the Philadelphia County Medical Society to fill the vacancies caused by the resignations of Dr. Jay Frank Schamberg and Dr. Judson Deland.—Dr. John Blair Spencer, physician in chief of the department of public welfare, returns this week from Washington, D. C., where he went about ten days ago to submit to an operation necessitated by an injury received while serving in the Navy during the late war.—Dr. Andrew A. Cairns, chief of the city health bureau, has been appointed a member of the advisory board of the department of health to succeed Dr. Joseph S. Neff, former director of health and charities, who resigned.—Dr. Miriam Warner has been appointed physician to the women patients of the Holmesburg Institutions, including the Home for the Indigent and Brown's Farms.—Dr. Randle C. Rosenberger has resigned as director of the pathologic laboratories at the Philadelphia General Hospital.

SOUTH CAROLINA

Personal.—Dr. T. B. Brown, Charleston, has taken charge of the Anderson Clinic, succeeding Dr. L. W. Blake, resigned.—Dr. Reuben G. Hamilton, Rockton, has been elected head of the public health service of Fairfield County, with headquarters at Winnsboro.

Increased Appropriation.—The Medical College of the State of South Carolina has received an appropriation from the state of \$71,000 for maintenance, as compared with \$49,500, the previous appropriation. An additional appropriation of \$60,000 was made for the physiology building and equipment.

Medical Bill Now Law.—Governor Cooper on March 10 signed the medical bill, requiring all chiropractors, osteopaths, homeopaths and other healers to submit to examination before the state board of medical examiners.—The state board of medical examiners held a meeting, April 19, at Greenville, to formulate the new rules for the examination and licensure of practitioners, and the first examination will be held on June 22.

To Study Trachoma.—Drs. Edward F. Parker, Charleston; Charles W. Kollock, Charleston; Edwin R. Wilson, Sumter; Pinkney V. Mikell, Columbia; E. Mikell Whaley, Columbia; Martin Crook, Spartanburg, and Waller H. Nardin, Anderson, have been appointed by Dr. James A. Hayne, Columbia, state health officer, as a committee to investigate trachoma and other infectious diseases of the eye, and to formulate rules and regulations to prevent the spread of these diseases among schoolchildren.

New State Officers.—The South Carolina Medical Association, at its seventy-second annual meeting, held in Greenville, S. C., April 20 and 21, elected the following officers: president, Dr. Washington P. Timmerman, Batesburg; vice presidents, Drs. Miles J. Walker, York; William A. Boyd, Columbia, and William W. Fennell, Rock Hill; secretary-treasurer, Dr. Edgar A. Hines, Seneca, and councilors, Drs. Archibald E. Baker, Charleston; Samuel E. Harmon, Columbia; Thomas L. W. Bailey, Clinton; Leland O. Mauldin, Greenville; T. N. Duten, York; Charles R. May, Bennettsville; Harry L. Shaw, Sumter, and Leighton A. Hartzog, Olar.

VIRGINIA

To Fight Swamp Menace.—The health committee of Newport News has made recommendation that the council appropriate an emergency fund of \$5,000 to defray the expenses of the fight against the malaria menace in the swamps and marshes in the city.

Institute for Colored Physicians.—By the aid of the missionary fund of the National Tuberculosis Association, the colored physicians of Virginia have been given a course of lectures and clinic work in tuberculosis at the Piedmont Sanatorium, Burkeville. The instructors comprise the heads of the three tuberculosis sanatoriums of Virginia and the medical director of the state tuberculosis association. Patients of all stages of tuberculosis were examined and the practitioners were drilled in the technic of chest examinations. The course will be repeated in June.

Health Center for Norfolk.—The public health department of Norfolk, through its director, Dr. Powhatan S. Schenck, has for several years been developing plans for a public health center for the city. A large amount of money has been secured for the work and plans for the buildings have been prepared. The proposed site for the buildings is the court house block at Bank Street. In the middle of the group will be the old Academy building which will be remodeled to contain the children's court, domestic relations court and other enterprises connected with these courts. On the sides and to the front of this will be grouped the general medical building, the prenatal building, the detention building, and administration and emergency buildings. The latter will be equipped so that it may be used for accident, operation and emergency cases. The general medical building will be fully equipped to treat all diseases except contagious diseases.

CANADA

Mental Hygiene Course.—The social service department of the University of Toronto is completing enrolment in the special extension course in mental hygiene. About thirty-five will take lectures in this course which will be conducted daily until June 11. Applications have come from Hamilton, Ottawa and other parts of the province of Ontario.

Harvey Club Election.—At the annual meeting of the Harvey Club, London, Ont., the following officers were elected: honorary president, Dr. Clarence M. Crawford, Whitby; president, Dr. Francis W. Hughes, London; vice president, Dr. John I. Ferguson, London; secretary, Dr. James W. Crane, London (reelected), and treasurer, Dr. Uriah E. Bateson, London.

Venereal Disease Council.—At the meeting of the Ontario committee of the Canadian Council for Venereal Diseases held, March 5, in Toronto, the lieutenant-governor was elected honorary president; Dr. Charles A. Hodgetts, Ottawa, president; Dr. Storms and Mrs. Torrington, Toronto, were elected vice presidents; Dr. Robert R. McClellan, Hamilton, was elected secretary, and M. L. Wood, treasurer.

Six-Year Medical Course.—Recently a conference was held in Montreal at which were present representatives of the medical department of the University of Toronto and the University of McGill. The delegation representing the University of Toronto included Profs. John J. Mackenzie, Benjamin P. Watson, Duncan A. L. Graham, Velyien E. Henderson, Drs. Edward Stanley Ryerson and Alexander Primrose, C. B. No final decisions were reached at that conference, but there was a preliminary discussion of the curriculum to be adopted by both institutions from the first to the sixth year. Both Toronto and McGill had decided to introduce the six-year course before the war.

Canadian National Council for Combating Venereal Diseases.—The first municipal committee in connection with the above organization has been organized in Toronto with Hon. Mr. Justice Riddell as honorary chairman; Dr. Frederick W. Marlow, chairman, and Dr. Gordon A. Bates, secretary. Coincident with the organization of this committee, there was shown in Massey Hall, Toronto, the film drama "The End of the Road." About 17,000 viewed this moving picture, and at the same time addresses were delivered of an educational character. The first work of the national council committee will consist in general education among the people to prove to them the seriousness of the problem of venereal diseases. Government treatment schemes will be inaugurated in various parts of the dominion. An endeavor will be made to secure a large membership.

Tuberculosis Board for Military Hospitals.—A board of tuberculosis sanatorium consultants has recently been appointed by the director of military services of the Soldiers' Civil Re-Establishment. The personnel of this board is as follows: Drs. Charles D. Parfitt, Gravenhurst; John R. Byers, Ste. Agathe des Monts; William M. Hart, Qu'Appelle, Sask.; Arthur F. Miller, Kentville, N. S., and David A. Stewart, Ninette, Man. This board will visit the twenty-three sanatoriums throughout Canada in which patients of the department are receiving treatment. The board will study the whole situation in Canada with regard to the treatment of tuberculosis occurring among soldiers, and as far as possible will bring about uniform standards of treatment, equipment, records, etc. The medical superintendents of these sanatoriums have been instructed to cooperate in every way with the board.

Personal.—Surg.-Gen. John T. Fotheringham left Toronto, March 18, for a trip to the West Indies.—Dr. Gerald Allison, Picton, Ont., has returned after serving with the R. A.

M. C. in Turkey.—Dr. Russell J. Collins, Kentville, N. S., has been appointed medical superintendent of the Balfour Sanatorium, Balfour, B. C.—Dr. William H. G. Aspland, Toronto, who was with the British Red Cross Society in 1914, is now living in Yorkshire, England.—Dr. Richard D. Cowan, Toronto, after three years of war work, has engaged in graduate work in the Middlesex Hospital, London, England.—Dr. Helen MacMurchy, Toronto, has been appointed head of child welfare under the department of public health, Ottawa.—Dr. Thomas J. McNally, Guelph, who has been district medical officer of health for the counties of Grey, Bruce and Simcoe, Ont., has been transferred to the Sarnia district.—Dr. George L. Sparks, London, after returning from overseas a short time ago, was appointed district medical officer of health for Fort William, Ont.

GENERAL

Tri-State Physicians Meet.—The forty-seventh semiannual meeting of the Northern Tri-State Medical Association of Indiana, Ohio and Michigan was held in Goshen, Ind., April 8, in connection with the annual session and as the guest of the Elkhart County Medical Association.

International Opium Convention.—Under terms of the Versailles Treaty of Peace and the Covenant of the League of Nations, all signatory nations are under obligation to ratify the opium convention and to enact the necessary legislation for its enforcement within twelve months. General supervision over the execution of the convention is entrusted to the League of Nations.

Post-Graduate Hospital Endowment Fund.—The New York Post-Graduate Medical School and Hospital reports that a total of \$751,694 has been reached in its \$2,000,000 endowment fund campaign. Among the large contributors were: Mrs. James Farrell, \$25,000; Mrs. Stephen Olin, \$500; J. M. W. Hicks, \$500; Mrs. Vanderbilt, \$500; F. W. Jennings, \$500, Hornblower, Miller, Garrison and Potter, \$500; Anonymous, \$5,000; Henry J. Davis, \$500; Fred Huyler, \$500; Warner B. Leeds, \$500, and Artemus Ward, \$1,000. An anonymous contribution of \$20,000 has also been received.

Military Surgeons Hold Meeting.—At the annual meeting of the Association of Military Surgeons of the United States held in New Orleans, April 22 to 24, under the presidency of Col. Joseph A. Hall, M. C., Ohio N. G., Cincinnati, the following officers were elected: president, Asst. Surg.-Gen. John W. Kerr, U. S. P. H. S., Washington, D. C.; vice presidents, Med. Dir. (Captain) Frank M. Pleadwell, M. C., U. S. Navy, Washington, D. C.; Col. Charles Lynch, M. C., U. S. Army, Washington, D. C., and Col. David S. Fairchild, Jr., M. C., Iowa N. G., Clinton, Iowa, and secretary-treasurer and editor, Col. James Robb Church, M. C., U. S. Army, Washington, D. C. (reelected). The 1921 meeting will be held in Washington, D. C., probably in October.

Bequests and Donations.—The following bequests and donations have recently been announced:

Paterson, N. J., General Hospital; St. Joseph's Hospital, and Barnert Hospital, each \$5,000; Paterson Orthopedic Association and Paterson Eye and Ear Infirmary, each \$4,000, by the will of William H. Heap, Paterson.

Paterson, N. J., General Hospital; St. Joseph's Hospital, and Barnert Hospital, each \$5,000, by the will of Lewis Levi, Paterson.

Woman's and St. Luke's hospitals, New York City, each \$5,000; Society of Widows and Orphans of Medical Men of New York City, \$1,000, by the will of Mrs. Anna M. Sandham.

Children's Hospital, Philadelphia, \$1,000, and after the death of one relative \$10,000, by the will of Mrs. Francis A. Roberts.

Philadelphia Home for Incurables and Philadelphia Home for Consumptives, each \$1,000, by the will of Catherine A. Delk.

New York Post-Graduate Medical School and Hospital Endowment Fund, \$250,000, contingent on the raising of \$1,000,000, by James F. Brady and Vincent Astor.

FOREIGN

Personal.—The Copenhagen University has awarded the Salomonsen prize to Prof. V. Ellermann for his works on leukemia in fowls. The fund for promotion of research on diabetes has been awarded to Dr. H. C. Hagedorn.—Prof. Vittorio Maragliano, son of Senator and Professor Maragliano of Genoa, has had two fingers amputated on account of roentgen injury in his professional work as radiologist.—Prof. K. Landsteiner of Vienna has accepted a call to the Hague as chief of the public hospital, and has resigned his post as director of the institute for pathology at the Wilhelminenspital a Vienna.

Nicolai and the Berlin Medical Students.—THE JOURNAL mentioned Jan. 26, 1918, that Prof. G. F. Nicolai on his return to Germany had been imprisoned for publishing a

Dr. Nicolai, "The Biology of War," in which he pointed out the wrongness of the conceptions of German scientists and military men in the course of hostilities, disregarding humanity and giving specific instances. Nicolai escaped by aeroplane to a neutral country, but returned later and was recently appointed professor extraordinary by the minister of public instruction, K. Haenisch. When he opened his course of lectures, the students created such a disturbance, denouncing him as a traitor, that he has been unable to continue the course. The governing board of the University of Berlin has also recently formally declared that he is unworthy of a chair in the university "as he had forsaken the country and his civilian duties and had published in a neutral country a book which glorified poisoned weapons in the hands of the foe." The *deutsche medizinische Wochenschrift* comments that "members of all parties must agree in this judgment, and the grounds therefor. It is remarkable, however, that the university authorities did not protest in this way at the time Nicolai was given the chair last October." Before the war he was privat-docent of physiology.

Deaths in Other Countries

Dr. M. T. Buch of Helsingfors, author of manuals "Physiology of Appetite and Hunger," "Physiology of Digestion" and smaller works along these lines, aged 70.—Dr. Norberto Barbot of Montevideo, formerly chief of the public health service in the state of Rio Negro and for many years a leading physician of Fray Bentos, aged 57.—Dr. Oriol del Rodríguez, the minister representing Uruguay at Lima, Peru, aged 60. He had been a member of the Uruguayan parliament and minister from Uruguay at Hamburg, and earlier in Italy and Brazil until appointed minister plenipotentiary to Peru, aged 60.—Dr. Isidro Lobo, formerly inspector general of the medical department of the Argentine army with which he had been connected since 1883.—Dr. A. Steiger, a well known ophthalmologist of Zurich.—Dr. R. Archambault, medical inspector of the port of Rosario, Argentina.—Dr. V. Ferreira dos Santos, who occupied a high position in the medical department of the army of Portugal.

LATIN AMERICA

Scientific Board in Nicaragua.—In accordance with the commendation of the superior board of public health, the government has established a scientific board for the eradication of yellow fever. The board will have charge of all matters relative to yellow fever cases and the prevention of the disease. Telegraph, telephone and postal frank privileges have been granted to this body.

New Sanitary Convention Between Brazil, Uruguay and Argentina.—Uruguay has taken the lead in the effort to unify sanitary requirements in regard to third class passengers arriving at their ports. The president and public health service of Uruguay ask that each of the countries will point a delegate to confer and adopt a uniform plan of requirements with which the navigation companies will have to comply.

Tribute to Two Men of Science.—Under this heading the *Revista Médica* of Lima, Peru, publishes an official notice from the president of the republic to the effect that as it is the duty of the public powers to present to the gratitude of the people and of posterity the memory of men who by their knowledge and character have contributed to national progress, he has ordered that statues of the two physicians, Dr. H. Unánue and Dr. B. Herrera, be erected in the university park at Lima at the expense of the state.

Dismissal of Dr. Ribeyro.—Dr. Ramón Ribeyro, director of the National Institute of Vaccine of Peru, has just been dismissed from his position by the director of public health. In his letter commenting on this matter, Dr. Ribeyro recalls that he had occupied this position for twenty-four years and had just been appointed corresponding member of the Society of Exotic Pathology of Paris because of his work on tropical diseases.

Academy of Medicine Offers Prize.—The Academy of Medicine of Porto Rico offers its fifth annual prize for the best work on "A Practical and Economic Plan for Rural Sanitation in Porto Rico." The prize amounts to \$500. The contest is open only to physicians located in Porto Rico, and the articles must be typewritten, make no mention of the author's name (this should be given in a separate closed envelop, having the same motto as the original article), and be in the hands of the secretary of the academy, Dr. P. Gutiérrez Igaravidez, San Juan, on or before Sept. 15, 1920.

Government Services

Health Conditions of the Army

During the week ending April 16, there was a slight increase in the hospital admission and death rates, but a decrease in the number of new cases of communicable diseases. Measles is reported in numbers from several stations, but nowhere has it assumed epidemic proportions. Of fifteen deaths from disease, eight were caused by tuberculosis, and two by pneumonia. Eight new cases of influenza, five of pneumonia, three of scarlatina, two of diphtheria and three of varicella are reported from the American Expeditionary Forces in Germany.

Public Health Service Hospitals

Up to date, twenty-one army hospitals have been turned over to the Public Health Service by the War Department. No others are now available, and the Committee on Public Buildings and Grounds will be called on to appropriate at least \$15,000,000 for the purchase and construction of additional hospital units to take care of immediate requirements for ex-service men under the War Risk Insurance Act. In the Urgent Deficiency Bill, just approved by the House Committee on Appropriations, \$7,666,000 is placed at the disposal of the Public Health Service for its fiscal requirements to June 30, 1920.

Army Reorganization Bill

The Army Reorganization Bill has passed both the Senate and House, but because of some differences it will be submitted to a conference committee. The House bill fixes the entrance age limit of an Army medical officer at 54 years; the Senate bill at 50 years. The former provides for the promotion of medical officers according to length of service by a board of from three to five officers, subject to review by the Secretary of War; the Senate bill provides promotion to the grade of captain after three years' service, to major after fourteen years, to lieutenant-colonel after twenty years and to colonel after twenty-six years. Both bills provide that medical officers who were in service during the World War and are now in the Medical Reserve Corps will be eligible for appointment in the regular Army after July 1, 1920. Commissioned rank for nurses is prescribed in both bills.

Foreign Letters

LONDON

April 10, 1920.

Military Control of the Army Medical Department

In the House of Commons, Lieutenant-Colonel Fremantle delivered a powerful criticism of army medical administration. He pointed out that the director-general of the army medical service was responsible only for the provision of physicians, nurses, drugs, instruments and dressings. When a breakdown occurred it was almost invariably in the provision of hospitals, or equipment, or in transport arrangements. The tragic breakdowns in the Crimean and South African wars were due to the difficulty of coordination. The result was the hospitals commission, which recommended that the director-general of the army medical service should be on what was then called the army board; but all that was arranged was that he should be summoned to the army council whenever his advice and special knowledge were required. But who knew when the advice of the specialist was required? Expeditions were undertaken without consulting him. The report of the Dardanelles commission showed that the errors were due largely to the lack of cooperation and provision in thinking out the probabilities. A committee of investigation recommended that the director-general of the army medical

services should come under the adjutant-general, because sanitation was so much a question of discipline. It was; but hospitals depended on other things that came from the quartermaster-general, from military intelligence and from the chief of the general staff, and there was no reason why hospitals or other branches of the medical service should come under any one of those three officers. An officer was needed on the army council who would be responsible for all materials and supplies, and who would have the power required to get hospitals efficient. Lord Esher, who presided over the committee referred to, had said: "How much the suffering undergone by our soldiers in the war was due to the shortsightedness of my committee will never be known." Certainly, the control of the adjutant-general's branch of the army medical corps was and is responsible, not only for the early failure to grip the medical factors of this war, but for the hampering conditions under which Sir Alfred Keogh worked. His triumphs and those of the army medical corps were achieved in spite of obstacles that the subordination of science to ignorance, of elasticity to military discipline, explains but cannot justify. Lieutenant-Colonel Fremantle appealed to the government to strengthen the army council by placing on it the director-general of medical services and to free from the control of a purely military officer a body of men mostly volunteers from highly trained professions and dealing with technical difficulties altogether outside the orbit of vision in which the soldier pure and simple habitually moved. Mr. Churchill, secretary of state for war, complimented Lieutenant-Colonel Fremantle on his speech, and promised that it would be carefully studied and examined by those in the war office specially concerned with the subjects mentioned.

An Appeal for Medical Journals from Austria

In the *Times*, Sir Clifford Allbutt makes an appeal on behalf of Austrian physicians and students. He has heard from Professor Wenckebach that their penury is so great that they cannot afford a cent for books or journals, home or foreign. He therefore appeals to Great Britain for recent medical and scientific literature for which students in all faculties are athirst. He describes the zest with which a group of students will pounce on any fragment of a journal which may drift into their bare libraries. Sir Clifford Allbutt therefore begs the readers of the *Times* not to throw away journals, books or papers, and perhaps to make some little sacrifice to spare such literature for the Vienna University. A London firm has undertaken to forward them in bulk.

The Rationing of Butter and Sugar in the Case of Invalids

The only foods now rationed are butter and sugar. The maximum amount of government butter which food committees can grant is 4 ounces weekly in ordinary cases and 8 ounces in cases of tuberculosis, diabetes and cancer. Applications for extra butter must be accompanied by a certificate that failure to obtain the extra ration would either (a) be definitely prejudicial to the health of the applicant or (b) delay his recovery. A certificate to the effect that the applicant is unable to digest margarin will no longer be required in view of the difficulty experienced by physicians in giving such certificates. In making this concession, the ministry impresses on physicians that there is still a serious shortage in supplies of imported butter, and asks for their cooperation in limiting such applications to cases in which they are fully satisfied that, owing to exceptional circumstances, margarin will not meet the needs of the patient. Extra allowances of sugar may be granted up to 1 pound weekly (inclusive of the ordinary ration) to applicants unable to take solid food, either on account of difficulty in swallowing or because their

disease necessitates a "slop" diet, and up to 10 ounces weekly (inclusive of the ordinary ration) to children under 2. Food control committees will not themselves deal with, but will forward to the medical section of the ministry application for extra sugar in the cases of: (a) elderly persons who by reason of infirmity are on a specially limited diet; (b) delicate children who are unable to eat much solid food or whose parents are, through lack of means, unable to provide substitutes for sugar, and (c) tuberculous patients whose diet is certified by the physician to be limited either by reason of poverty or because of the disease's being in an acute stage and when a larger allowance is recommended than the committee itself is empowered to grant.

A National Institute of Psychology and Physiology as Applied to Industry and Commerce

An appeal for the foundation of such an institute has been made with the support of leaders of industry; psychologists and physiologists, like Dr. C. S. Meyer of Cambridge, Prof. C. S. Sherrington, and Prof. E. H. Starling; and educationists such as Sir Robert Blair and Sir Alfred Keogh. Of the means proposed, one of the chief is the establishment of a well-equipped laboratory or laboratories for research into various occupations, in order to determine the conditions necessary to get maximum output with minimum of fatigue and discomfort to the worker, such as elimination of unnecessary movements; and to study the causes of mental and muscular fatigue and the methods of reducing it. Tests would be made in the laboratory for the purpose of establishing standards by which workers can be selected for the occupations for which they are best suited, mentally and physically. These standards would enable parents and after-care committees to be advised as to the best vocations for children, and would thus eliminate much waste at the outset, and prevent the discontent which arises when a worker finds out too late that he has taken up an unsuitable occupation and is a square peg in a round hole. The facts established by research would be collected and classified, and from time to time published in such a form as to bring out their practical value. Another function of the institute would be to provide training courses and lectures for investigators, managers, foremen and welfare workers in the practical application of psychology and physiology, and it would undertake investigations at factories and offices in relation to any special problem. It would study the conditions that tend to promote the health, comfort and welfare of the worker, and also the psychologic relations between employer, manager, foreman and worker, with special reference to securing harmony and cooperation. It would further undertake propaganda work among employers and employed, and cooperate actively with organizations of both, for the furtherance of national unity and prosperity.

The Measurement of Emotion

At the Royal Society of Medicine, Prof. A. D. Waller, F.R.S., gave a very interesting lecture on the measurement of human emotion. He pointed out that emotion produced appreciable changes in the skin, such as vasomotor effects and sweating. He believed that there existed other phenomena under the control of the central nervous system. Cell metabolism was probably influenced directly by impulses arising in the central nervous system. Under certain influences the porous envelopes surrounding every cell became more porous, and cell metabolism increased; under others, they became less porous and cell metabolism diminished. These changes could be appreciated by the alterations produced in the resistance to the electric current. The hand of a subject was placed in the arm of a Wheatstone bridge and the resistance measured. A painful stimulus, physical or psychic, then caused a deflection of the mirror galvanometer. He thought that the alteration of

resistance was due to nervous impulses passing down the peripheral nerves and acting on the cells through their surrounding membranes. In the passive state, resistance varied in different individuals and at different times of the day. There was a definite daily cycle in resistance, which was highest during the early hours of the morning and lowest in the afternoon. These periods corresponded with the periods of minimum and maximum metabolism. For these observations the palms or soles should be used; with other surfaces of the body the reactions were less marked and were open to doubt. The reason for this was obscure. A practical demonstration was then given on an assistant and a volunteer from the audience. The striking of a match with the threat of burning caused an immediate deflection of the galvanometer. The actual burning caused a greater diminution. A deflection occurred when the subject coughed. This was due, not to any emotion associated with the cough, but to the passage of a nervous impulse down the nerves of the arm. There was an interval between the cough and the deflection of the galvanometer, which was attributed to changes at the periphery rather than in the highest centers. Contrary to expectation, hysterical subjects proved less likely to show deflection than normal persons.

Leprosy as a Deficiency Disease

The fish hypothesis of leprosy was advocated with his characteristic persistency by Sir Jonathan Hutchinson throughout his long life. The incredulity with which it was received did not disturb him in the least. The greatest observer of his age, if indeed not of any age, he read the book of nature with infinite care and the insight of genius. Like all reformers, he had encountered incredulity and opposition in his greatest advances. If here they were more lasting, the only thing to do was to go on teaching. He maintained that leprosy was due to eating fish in a state of incipient decomposition. The cause was "some ingredient or parasite generated by or introduced into fish which had not been cured or cured badly." A study of the geographic distribution convinced him that neither climate nor race had anything to do with the disease. The observation that it prevailed almost exclusively on islands, on the shores of continents, and along the courses of rivers led to the conviction that it must in some way be due to the eating of fish. He accumulated an immense amount of evidence, such as the following: Leprosy is more prevalent among Roman Catholics than among those by whom fish is not eaten by reason of religious ordinance. The Jains and high-caste Brahmans of India, who are strict vegetarians, are almost free from leprosy. Leprosy did not affect the Hottentots until smoked fish was introduced among them. The number of lepers in the whole of India is five in 10,000, while in the fishing island of Minicoy it is 150 in 10,000. All over the world leprosy is a disease of the tribes that fish and not of those that hunt. Of these and kindred facts adduced by him and too numerous to mention, no other explanation than his has ever been given. But the discovery of the bacillus of leprosy by Hansen in 1874 caused a revival of the contagionist doctrine of leprosy, and it was assumed that a disease due to a specific bacillus could not be due to any article of food. And so the position has remained. But at the Royal Society of Medicine a paper has just been read by Mr. A. S. Dutton which tends to show that after all Hutchinson was right—as he always was—in the conclusion which he drew from the facts, though not in his pathologic speculation. He could not have arrived at the truth in this, for the conception of "deficiency diseases" did not then exist. Mr. Dutton referred to Hutchinson's observation that leprosy never developed in the United States except in parts of California, which he attributed to the fact that it was almost the only country where colonization took

place without an initial stage of considerable hardship, and that a good variety of foods was practically always available. Mr. Dutton remarked that though leprosy was considered to be due to *B. leprae*, it was curious how closely the nervous symptoms of beriberi resembled those of lepra anaesthetica. Each was also prevalent in the far East. Lepra anaesthetica could occur without lepra tuberculosa and be present for a considerable time before the latter. This appeared to support the food theory. Mr. Dutton suggested that when the food supply was mainly fish, a deficiency in diet occurred. The salting of fish would produce a loss in its nutritive value. Leprosy might eventually be recognized as partly a deficiency disease, sometimes owing to a predisposition caused by a diet mainly of fish, and sometimes to a diet deficient in various necessary elements. If the bacillus then gained access to the body, the whole chain of tuberculous manifestations would be added.

BELGIUM

April 3, 1920.

Miners' Nystagmus

It is fairly well known with what great activity the industries of the Liège basin have combated occupational diseases in general. The hookworm dispensaries for miners obtained appreciable results, and in this preventive campaign, Professor Malvoz succeeded in eradicating a disease that had become a great menace. A rather curious disease observed in the mines, and against which serious measures are being taken, is miners' nystagmus. In reality, among all miners who work under bad lighting conditions, in metal mines as well as coal mines, visual fatigue is common. The fatigue may be limited to the photoreceptor structures of the eye (causing hemeralopia and defective retinal perception), but most often it passes this stage and attacks the centers that govern muscular equilibrium and the protective reflexes of the eye, causing nystagmus and blepharospasm. It results in visual disorders which become progressively worse, and which lead finally, especially among coal miners, to psychic disorders from exhaustion of the central nervous system (amblyopia, tics and neuroses). The latter eventuality is fortunately rare; ordinarily the troubles are limited to the visual apparatus. The manifestations are extremely variable in different subjects, and even in the same subject at different times. The clinical evolution of this fatigue depends on the physical condition of the individual person and on his physiologic resistance. There are periods of aggravation and remission. The symptoms are aggravated by enfeebling intercurrent diseases, such as pneumonia and typhoid fever. Workmen who are poorly nourished, weakened by overwork or privation, and those with domestic difficulties are easy prey for serious forms of the disease. Good physical condition, and proper rest and nourishment, on the contrary, act as deterrents to the development of the disease. Dr. Stassen has just published a statistical and experimental work on the subject. Of almost 20,000 miners examined by him, about 5,000, or 25 per cent., presented signs of varying degree of ocular fatigue. In the metal mines, only the benign and occasionally the moderately intense forms were found. In coal mines, however, all degrees of ocular fatigue were encountered. Of 1,000 coal miners, eighty had slight visual fatigue at the end of the day, 125 had some slight nystagmus, thirty had a marked diminution of vision with nystagmus, ten were partly incapacitated for work, and two had ocular neurosis and general nervous disorders which made them totally incapacitated for work. Dr. Stassen says that improved lighting of the mines is the first requisite in the prevention of visual disorders among miners. He cites cases of severe ocular fatigue which disappeared after the men

worked in pits with galleries lighted by incandescent electric lamps or in metal mines lighted by acetylene lamps. A successful campaign against miners' nystagmus requires the cooperation of the public authorities, mine owners and miners, a cooperation based on the same principles as the campaign against hookworm disease among miners in Liège province.

Abdominal Hysterectomy

Dr. Frans Daels presented an interesting paper on the indications and technic of total abdominal hysterectomy before the Académie royale de médecine. He insists on hysterectomy in the treatment of cancer of the cervix. After a careful bacteriologic study of the parametrium, he has reached the conclusion that the streptococcus infection which exists in the carcinomatous area in 60 per cent. of the cases extends besides, six times out of ten, to the parametrium and to the lymphatic glands. The preliminary treatment before operation on patients with infection consists in curettage and cauterization of the base of the cancerous crater, followed by applications of radium for fifteen days. This preventive treatment permits better clearing away of the carcinomatous lesion and improves the general condition, but it does not inhibit the infection or prevent the infected tissues from coming in direct contact with the peritoneum, the ligatures and the suture lines. Therefore, the author wonders if it is not possible to disinfect these tissues, or, at the very least, to stop the extension of the infection. Clinical and laboratory experience justify him in recommending a solution of silver nitrate, 1 per cent. in a 0.5 per cent. solution of nitric acid, as having a direct bactericidal action and as stimulating proliferation. This topical treatment does not prevent Dr. Daels from considering careful peritonization of the true pelvis as the best preventive of extension of the autochthonous infection. In two of his cases the surfaces were successfully covered with large transplants from the peritoneum. After the hysterectomy is done, the walls of the vagina are fixed to a band formed by suturing the round ligaments together. This assures the organs of the true pelvis their normal plastic and static surroundings.

Lethargic Encephalitis

Lethargic encephalitis has made its appearance in Belgium. In western Europe the disease first appeared at Verdun in 1915, and at Bar-le-Duc in 1916. It was first clearly recognized in Paris and London in March, 1918, and numerous papers have appeared on the subject in France and England. In the latter country, the government organized a scientific investigation; the report of this commission concludes that lethargic encephalitis is a clearly defined disease. The first paper on the subject in the Belgian medical press was that by Drs. Burger and Focquet. At a recent meeting of the Académie royale de médecine, Dr. Paul Masoin reported several cases of the disease, and recalled some cases which appeared in Flanders a year ago, especially at Ruddervoorde, where it assumed epidemic proportions. These cases were the subject of a report by Professor Van Ermengem to the Conseil supérieur d'hygiène in October, 1919. The disease was restricted to a few villages of Flanders for one year, but is now distributed over all provinces. For this reason, Dr. Masoin proposed that the academy recommend that the department of hygiene direct the attention of the medical profession to the disease and request all physicians to report suspected cases to health inspectors and to note any peculiarities which might help in studying the disease. Up to the present no attention has been paid to this appeal, except in one instance, the report by Drs. Lamalle and Leroy of the apparition of the disease in Liège. Their case was observed during a small epidemic of influenza.

Deaths

Cassius M. Witmer ☉ Santa Ana, Calif.; Jefferson Medical College, 1881; aged 61; for thirty-five years a practitioner of Marble Hill, Mo.; formerly a member of the board of managers of the State Hospital, Farmington, Mo.; president of the Bollinger County Bank, Lutesville, Mo.; director of the Bank of Marble Hill, Mo., and of the South East Missouri Trust Company, Cape Girardeau, Mo.; vice president of the Telephone Company at Advance, Mo.; died, April 11, from cerebral hemorrhage.

Bernard Bartow ☉ Buffalo; University of Buffalo, 1874; aged 70; a member of the American Orthopedic Association and American Academy of Medicine; orthopedic surgeon to the Children's Hospital and consulting orthopedic surgeon to the Central and Municipal hospitals, Buffalo; emeritus professor of orthopedic surgery in his alma mater; died in the Children's Hospital, Buffalo, March 29.

William Henderson Ruddick, Boston; Harvard University Medical School, 1868; aged 75; a member of the Massachusetts Medical Society; assistant surgeon of the Seventh Massachusetts Infantry during the Civil War; also a veteran of the war with Spain; formerly assistant superintendent of the New Hampshire State Hospital, Concord; died, April 8.

Buford Nelson Dunavant ☉ Memphis, Tenn.; Memphis (Tenn.) Hospital Medical College, 1906; aged 37; major, M. C., U. S. Army, and attached to the 115th Field Artillery; formerly major, M. C., N. G., Tenn., and assigned First Infantry; was shot and fatally wounded by policemen summoned to quiet a disturbance at his residence, April 11.

Peter Winslar Franklin Corning, Londonderry, N. H.; Baltimore Medical College, 1906; aged 47; a member of the New Hampshire Medical Society; while driving in his automobile over a grade crossing south of Londonderry, April 12, was struck by a train, and died while being taken to the Lawrence (Mass.) General Hospital.

Seth Wicks ☉ Chicago; University of Illinois, Chicago, 1903; aged 40; captain, M. R. C., U. S. Army, with service at Camp Custer, Mich., and discharged Jan. 29, 1919; instructor in biology in his alma mater; died in Lake View Hospital, Chicago, April 24, after an operation for appendicitis.

Edward Joseph Connell ☉ New York City; Cornell University Medical College, New York City, 1899; aged 43; assistant otologist to the Lincoln Hospital, and assistant ophthalmologist and aural surgeon at the Fordham University Dispensary, New York City; died, April 11, from pneumonia.

Henry Sherman Kilby, North Attleboro, Mass.; Harvard University Medical School, 1878; aged 68; a member of the Massachusetts Medical Society; for many years school physician and a member of the school committee of North Attleboro; died, April 10.

Mead Charles Carpenter ☉ Linesville, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1895; aged 55; while driving in his automobile over a grade crossing of the Pennsylvania system at Linesville, April 9, was struck by a train and instantly killed.

Kire Le Clare Clock, Ravenwood, Colo.; Barnes Medical College, St. Louis, 1899; aged 56; physician of the Victor-American Mine; died, April 22, from the effects of poison, self-administered, it is believed, with suicidal intent.

Isaac Irwin Kalbach, Glen Riddle, Pa.; Jefferson Medical College, 1893; aged 48; a member of the Medical Society of the State of Pennsylvania; died in the Taylor Hospital, Ridley Park, Pa., April 16, from cerebral hemorrhage.

Robert Lee Taylor, Cleveland, Tenn.; University of Nashville, Tenn., 1897; aged 50; died in his office, April 7, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, while despondent.

Walter Ross, The Pas, Manit.; Manitoba Medical College, Winnipeg, 1909; aged 33; Major, Canadian A. M. C. and D. A. D. M. S.; died in the Canadian Hospital, Buxton, England, February 6, from pneumonia.

Martin Friedrich ☉ Cleveland; Western Reserve University, Cleveland, 1894; aged 63; chief of the Bureau of Communicable Diseases of Cleveland; for many years health officer of the city; died, April 8.

Henry Oliver Conoway, Grand Island, Neb.; Eclectic Medical Institute, Cincinnati, 1875; aged 71; formerly of Phillips, Neb.; died in the Grand Island General Hospital, April 1, from cerebral hemorrhage.

☉ Indicates "Fellow" of the American Medical Association.

Earl E. Craig, Wilson, Ark.; University of Tennessee, Nashville, 1907; aged 41; a member of the Arkansas Medical Society; was killed by the overturning of his automobile in Wilson, March 30.

Arthur O. Sax ☉ Chicago; Hahnemann Medical College, Chicago, 1897; aged 52; professor of theory and practice of medicine in his alma mater; died, April 23, from valvular heart disease.

Charles Ernest Walters, Dexter, Mo.; Barnes Medical College, St. Louis, 1907; aged 41; captain, M. C., U. S. Army; a member of the Missouri State Medical Association; died, March 26.

Percy Bissell Grant, Roblin, Manit.; Manitoba Medical College, Winnipeg, 1908; aged 39; died in the Winnipeg General Hospital, January 5, from appendicitis.

John Trumbull, Vina del Mar, Chile, S. A.; Harvard University Medical School, 1880; aged 64; died in Valparaiso, Chile, February 26, from chronic endocarditis.

Iverson L. Lofton, Nashville, Tenn.; University of Nashville, Tenn., 1860; aged 79; a Confederate veteran; died, March 20, from cerebral hemorrhage.

Victor H. Parker, Carmi, Ill.; Jefferson Medical College, 1876; aged 67; died in a hospital in Jacksonville, Fla., April 6, from cardiorenal disease.

Joseph Johnston Shanks, Salem, Va.; University of the City of New York, 1882; aged 63; died at McAlpin, W. Va., March 31, from pneumonia.

John J. Theorell, Porter, Ind.; Hahnemann Medical College, Chicago, 1898; aged 71; died, February 20, from chronic interstitial nephritis.

Thomas John Nolson Gatrell, Santa Ana, Calif.; Rush Medical College, 1900; formerly of Oberlin, Ohio; died, February 12.

Valentine Bowers, Frankfort, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1880; aged 77; died, March 4.

Julius Jerome Go'dstein, New York City; University and Bellevue Hospital Medical College, 1909; aged 33; died, April 14.

William James Weeks, Ottawa, Ont.; Queen's University, Kingston, Ont., 1865; aged 80; died, February 22, from heart disease.

A. Thomas Buchanan, Chicago; St. Louis Medical College, 1872; aged 78; a veteran of the Civil War; died, April 22.

Reuben T. Giffin, Burnett's Creek, Ind.; Fort Wayne (Ind.) College of Medicine, 1892; aged 75; died, March 3.

H. Burton Kirkland, Berea, Ohio; Eclectic Medical Institute, Cincinnati, 1891; aged 52; died, April 21.

Franz G. Koehler, Philadelphia; aged 92; a practitioner since 1849; died, March 8, from pleurisy.

James Case Brixey, Chicago; College of Physicians and Surgeons, Chicago, 1905; died, April 22.

Robert Reid Weir, Itasca, Texas; University of Nashville, Tenn., 1884; aged 62; died recently.

Simon D. Hornocker, Silversville, Ind. (license, Indiana, 1897); aged 87; died, March 16.

Marriages

CHAUNCEY DEWITT BEEBE, Sparta, Wis., to Miss Marguerite Dreeneen Bittner of New York City, at Chicago, April 3.

HAROLD KOCH SHAWAN, Detroit, to Miss Jane Coleman, at Chicago, April 19.

CHARLES ALLEN MCWILLIAMS to Miss Nona Harry, both of Gulfport, Miss., April 8.

WARREN ASHLEY COLEMAN to Miss Christine Edwards, both of Eastman, Ga., May 1.

JAMES HOWARD HUDDLESON, JR., to Miss Mary Ellen Pascoe, both of New York City, February 17.

JOSEPH G. WILSON to Miss Anne Dunning, both of New York City, April 19.

HENRY WILLIAM ABELMANN to Miss Anabel Borg, both of Chicago, April 17.

FREDERICK HOLTON MORRISON, Newton, N. J., to Miss Mary C. Shaw of Stanhope, N. J., March 24.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SOME MISBRANDED DRUG PRODUCTS AND NOSTRUMS

Quinin Sulphate and Calomel Tablets.—The Drug Products Company, New York City, shipped in September, 1917, quantities of "Quinin Sulphate Tablets" and "Calomel Tablets" which were adulterated and misbranded. The tablets of quinin sulphate were labeled as 2 grain tablets. Analysis by the Bureau of Chemistry showed that they actually contained only about 1½ grains (1.54 gr.) of quinin sulphate to each tablet. The calomel tablets were labeled as ¼ grain, while the Bureau of Chemistry's analysis showed that they actually contained less than ¼ grain (0.156 gr.) calomel to each tablet. In December, 1918, the company pleaded guilty and was fined \$20.—[*Notice of Judgment No. 6636; issued March 22, 1920.*]

Some Miscellaneous Tablets.—The Carroll Dunham Smith Pharmacal Co. of New York City shipped in September, 1917, a number of tablets which were declared adulterated and misbranded. Some "Acetanilid Tablets" which were labeled as 5 grains were found to contain only 2.98 grains, or a shortage of 40 per cent. Some "Nitroglycerin Tablets" which were labeled as ½ grain were found to contain only 0.0139 grain, or a shortage of 30 per cent. Some "Acetylsalicylic Tablets" labeled as 5 grains were found to contain only 4¼ grains, or a shortage of 15 per cent. Some "Acetphenetidin and Salol Tablets" labeled as containing 2½ grains each of acetphenetidin and salol were found to contain only 0.37 grains acetphenetidin and 1.45 grains of salol per tablet, being a shortage of 85 per cent. and 42 per cent., respectively. Some "Quinin Sulphate Tablets" which were labeled 2 grains were found to contain approximately 1.3 grains, or a shortage of 33 per cent. In December, 1918, the company pleaded guilty and was fined \$25.—[*Notice of Judgment No. 6682; issued March 29, 1920.*]

Hostelley's Hypophosphites.—William H. Hostelley, who traded as W. H. Hostelley & Co., Philadelphia, shipped in November, 1917, some "Hostelley's Hypophosphites (Syr. Hypophos. Comp.)" and also "Hostelley's Chemically Pure Hypophosphites (Sol. Hypophos. Comp.)" which were adulterated and misbranded. These products were adulterated because when analyzed by the Bureau of Chemistry they were found to vary widely both from their declared composition and also from the National Formulary requirements. The "Syr. Hypophos. Comp." was also declared misbranded because it was falsely and fraudulently represented as a cure for tuberculous manifestations, neurasthenia, rickets, anemia, bronchial affections, nervous insomnia and senile depression "when in truth and in fact it was not." The "Sol. Hypophos. Comp." was also declared misbranded because it was falsely and fraudulently represented as a cure for tuberculous manifestations, alcoholic or sexual neurasthenia, all nervous and mental diseases, physical depression, senile decay and anemia when it was not. In February, 1919, Hostelley pleaded guilty and was fined \$100 and costs.—[*Notice of Judgment No. 6747; issued April 9, 1920.*]

Stoddard's Pinus-Codeia and Miscellaneous Tablets.—G. S. Stoddard & Co., New York City, in November, 1917, shipped "Stoddard's Pinus-Codeia" and various tablets which were misbranded. The "Pinus-Codeia" was misbranded in that it failed to bear a statement of the quantity or proportion of codeia contained in each fluidounce of the article and it also failed to state that codeia is a derivative of opium. Some "Salcitol-Codeia Tablets" were misbranded in that

while they contained acetanilid, the amount of this drug was not declared on the label; neither did the label carry the information that codein sulphate is a derivative of opium. "Salcetol Phenylamine Ammonii Salicylate Tablets" was falsely and misleadingly labeled in that it was represented that the tablets contained ammonium salicylate when they did not and for the further reason that while the tablets did contain acetanilid the quantity or proportion of acetanilid was not declared. "Salcetol Co. No. 2 Infant Corrective" was sold under the claim that it contained bismuth subnitrate, zinc sulphocarbolate and phenylacetamide when as a matter of fact it contained none of them. It was further misbranded in that the label declared that it contained $\frac{1}{30}$ of a grain calomel and no sugar when, as a matter of fact, it contained more than $\frac{1}{30}$ of a grain of calomel and did contain sugar. "Cannabin Co. Tablets" were labeled as containing $\frac{1}{40}$ gr. strychnin phosphid and $\frac{1}{100}$ gr. brucin to each tablet; as a matter of fact they contained only about $\frac{1}{77}$ gr. of strychnin phosphid and no brucin. In February, 1919, the company pleaded guilty and was fined \$70.—[*Notice of Judgment No. 6714; issued April 9, 1920.*]

Dr. King's Star Crown Brand Pills.—The Northern Drug Co., Duluth, Minn., shipped a quantity of this stuff in August, 1917. The federal chemists reported that these pills consisted essentially of aloes and oil of pennyroyal and were coated with chalk, charcoal and sugar. The preparation was falsely and fraudulently represented as a cure for delayed and painful menstruation and menstrual irregularities, when it was not. In November, 1918, the company pleaded guilty and was fined \$5.—[*Notice of Judgment No. 6713; issued April 9, 1920.*]

Marshall's Pain Drops and Other Nostrums.—Irving J. Carter, who did business as the M. W. Marshall Medicine Co., Redgranite, Wis., shipped in August, 1917, a number of nostrums which were misbranded. The Bureau of Chemistry analyzed these and reported on them as follows:

"Marshall's Unequaled Pain Drops."—This was found to consist essentially of red pepper, opium, ammonia, alcohol and water with rosemary flavoring. The nostrum was falsely and fraudulently represented as a cure for rheumatism, neuralgia, cholera morbus, all bowel complaints, sore throat, spinal disease, diphtheria in its most malignant form, liver and kidney complaints and various other conditions. It also was said to "contain no poisonous . . . matter" when it actually contained 2 grains of opium to the ounce.

"Marshall's Lung Syrup."—This "syrup" was found to consist essentially of morphin sulphate, ammonium chlorid, vegetable extractives, glycerin, syrup and flavoring material. It was falsely and fraudulently represented as a cure for consumption, asthma, whooping cough, pleurisy, croup, etc.

"Dr. J. C. Brown's Unequaled Liquid Drops."—The "drops" were found to consist essentially of red pepper, ginger, oil of sassafras, camphor, ammonia, trace of morphin, alcohol and water. They were falsely and fraudulently represented as a cure for sick and nervous headache, rheumatism, all bowel complaints, spinal diseases, diphtheria, etc., and were also labeled as containing no poisonous matter when in fact they contained 2 grains of opium to the ounce.

"Marshall's Blood and Liver Pills."—These pills were found to consist essentially of aloes and other plant material, chalk, sugar and starch. They were falsely and fraudulently represented as a cure for inflammation of the liver, stoppage of the menses, "irritable vindictive feelings and passions," kidney disease, nervousness, fevers, dyspepsia, etc.

"Egyptian Oil."—This was found to consist essentially of linseed oil with volatile oils, including sassafras and cedar oils and camphor. It was falsely and fraudulently represented as a cure for piles, diphtheria, coughs, colds, earache and erysipelas.

"Arctic Oil Liniment."—This liniment consisted, essentially, of a liquid in two layers. The upper layer contained kerosene, linseed oil, castor oil and camphor; the lower contained alcohol, ammonia, water, plant extract and a trace of

iodin. It was falsely and fraudulently represented as a cure for diphtheria, rheumatism, catarrh, all kinds of lameness, etc.

"Rheumatic Oil."—This also separated into two layers. The upper layer was found to consist essentially of kerosene, linseed oil, castor oil and camphor; the lower to contain alcohol, ammonia, water, plant extract and a trace of iodine. It was falsely and fraudulently represented as a cure for rheumatism, neuralgia, colic, nervous headache, diphtheria, spinal and hip complaints, colic and distemper in horses, etc.

In June, 1919, Irving J. Carter pleaded guilty and was fined \$50.—[*Notice of Judgment No. 6748; issued April 9, 1920.*]

Correspondence

THE USE OF DRUGS IN OIL

To the Editor:—During the last winter I have been carrying on investigations in the use of drugs in oil, subcutaneously, intramuscularly and intravenously. Although the work has by no means reached a definite form to warrant publication as a completed investigation, I am, nevertheless, prompted to communicate the present results in this preliminary way, because it would be well for other hands to repeat whatever results may have been reached thus far.

In brief, it has been found that the local action of drugs, notably epinephrin, and local anesthetics, such as procain, exhibit a strikingly prolonged drug effect when the drug is administered subcutaneously and in an oil vehicle. It has been possible, therefore, to use epinephrin in oil for such clinical conditions as bronchial asthma, certain urticarial eruptions and in certain types of pneumonia, the method being to establish a local subcutaneous depot of epinephrin in oil, and to procure rather continuous epinephrization effects by repeating the subcutaneous inoculation every eight to twelve hours. With the collaboration of Dr. Theodore Blum it was possible to produce local anesthesia without apparent ill or toxic effect, for a duration of from ten to twelve hours, using the local anesthetic (procain) in oil.

Intravenously, it has been possible to give as much as 10 c.c. of olive oil at one time to a dog and to repeat this dose every third or fourth day, until as much as 100 c.c. has been administered. In rabbits the danger of fatal embolization from the intravenous use of oil is very great, while in dogs this is not so. In man, oil was administered intravenously in doses of 0.25 to 1.5 c.c. in a very small group of cases with no apparent signs or symptoms of embolization.

The intravenous effect of giving a drug in oil, in general, is to produce a gradual, uniform, even and prolonged effect, of a less intensity as compared with the administration of the same drug in aqueous solution, in which the effect would be abrupt, irregular, erratic, rather transient, and of striking intensity. Also, it has been demonstrated that increasing amounts of oil, when added to a definite and constant amount of drug, will diminish the intravenous effect of the drug until no intravenous effect is observed when sufficient oil is used. In other words, within limitations, the less oil used for a definite amount of drug, the more marked the intravenous effect. We have worked mainly with epinephrin, crystalline strophanthin, and to a lesser degree, with nitroglycerin and pituitary extract.

The drug with oil is embolized in the pulmonary capillary bed. We infer that the different pharmacologic action noted from the intravenous use of epinephrin in oil, for instance, as compared with the effect of the same drug in aqueous solution, is probably due to the fact that the drug in oil is carried to the pulmonary capillary bed and there enmeshed to form a local depot.

H. R. MILLER, M.D., New York

THE MENACE OF THE HOMICIDAL DEFECTIVE

To the Editor:—The lamentable assassination of our distinguished colleague, Dr. James W. Markoe, once more shows us the nonsense of our present insanity laws. I enclose a circular which the Brooklyn Neurological Society is sending to every hospital staff and every county society in New York, asking their cooperation in a fight for rational laws dealing with not only our mentally ill patients, but in criminal cases as well.

The agitation for a correction of our present defective insanity laws and procedure should be nation wide.

JOHN F. W. MEAGHER, M.D., Brooklyn.

The circular reads:

For years this society has advocated a readjustment of our insanity laws, not only for the welfare of our patients, but for the protection of society. Insanity, as it is usually termed, is a medical and not a legal problem. As the laws now stand, a judge or a jury has the deciding opinion as to whether a man is sane or insane; safe to be at large, or unsafe; and neither by education nor by training is either competent to decide. Most judges, having sound common sense, realize this and prefer to abide by the opinions of psychiatrists. There are a few who do not. Some of the most dangerous types of insanity—particularly paranoid conditions without deterioration—are the most difficult ones to diagnose.

Not infrequently such cases are merely asked in court whether they are insane, and on replying in the negative, are discharged forthwith! And a potential homicidal patient is thrown back on to society! We as physicians are helpless, for in this branch of medicine—psychiatry—a judge or jury are by our present laws clothed with superior diagnostic powers!

The Medical Society of the County of Kings, with a membership of one thousand physicians, indorsed our attitude, and in February so notified the governor. But unless all physicians, individually and collectively, will interest themselves in this subject, and interest both the press and the public, our efforts will not bear fruit. Instead, the present laws and the present procedure will remain as they are to the detriment of our patients, and a danger to society.

Will you not send resolutions to the governor, and to the members of the legislature, asking for an investigation into our insanity laws?

For let it be reiterated again, that insanity is a mental disorder—a medical problem—rather than a legal one. Personally, I know that most members of the bar agree to this. There should be no division of authority.

JOHN F. W. MEAGHER.

President, Brooklyn Neurological Society.

"OXYGEN INFLATION OF THE PERITONEAL CAVITY"

To the Editor:—With reference to the experience described by Dr. Armitage Whitman (THE JOURNAL, April 10, 1920, p. 1021) we would say that it is ill advised for any patient who has had the peritoneal cavity inflated with oxygen to assume the erect posture for at least twenty-four to thirty-six hours after the roentgen examination. For any one to submit to inflation and then maintain an erect posture, attempting to carry on his business and walking to and from his office to the hospital, would be, to say the least, extremely dangerous. In our attempt to render inflation an office procedure we have of late deflated our patients, in which case they are almost immediately relieved and may assume the erect posture much earlier. Deflation, with a few hours' rest in the recumbent posture, would have given Dr. Whitman the much sought for relief.

WILLIAM H. STEWART, M.D., ARTHUR STEIN, M.D.,
New York.

"TUBING AS A CAUSE OF REACTION TO INTRAVENOUS INJECTION, ESPECIALLY OF ARSPHENAMIN"

To the Editor:—In THE JOURNAL, April 10, 1920, appeared an article under this title from the pen of Stokes and Busman, in which the attention of the profession is called to reactions due to new rubber tubing. Permit me to state that I can fully corroborate their views, not on experimental grounds such as is furnished by the authors, but from a

purely practical experience. A number of years ago, at least four or five, we were struck out of a clear sky by a number of reactions of the nature so vividly pictured by Stokes and Busman, most of them accompanied by herpetic eruptions. This happened in my service at Mount Sinai Hospital, and caused the closest scrutiny into technical errors, toxicity of drug, and the so-called "Wasserfehler," in which I was assisted by Dr. S. Bookman, physiologic chemist of the pathologic department of the hospital. All other causes having been excluded, I came to the conclusion that the reactions were due to new rubber tubing, a suspicion which was fortified by a subsequent analogous experience.

Since that time it has been the standard rule at Mount Sinai Hospital not to use new rubber tubing for intravenous injections until after it has been boiled in soda solution on three successive days for one hour each day.

We believe that by this procedure we have eliminated the so-called tubing reactions.

HERMANN GOLDENBERG, M.D., New York.

THE MEANING OF NONA AS APPLIED TO LETHARGY

To the Editor:—In Flexner's recent article on lethargic encephalitis (THE JOURNAL, March 27, 1920, p. 865) there is a reference to the obscurity of the term "nona," applied to this disease in southern Europe, and a philological surmise that it is really a mispronunciation of "coma." This seems to me a bit far fetched. I think there is a clearer etymological explanation. About thirty years ago, in 1890 when the African sleeping sickness was first called to the attention of students of tropical medicine, there was an epidemic of lethargy among the silkworms in southern France and northern Italy. At Strasbourg, where I was studying, this was spoken of as *Schlafsucht* (*Schlafsucht?*) *der Seidenraupen*, or lethargy of silkworm caterpillars. In Italian, this form of the worm is called "nona," in French, "nonne." There was a great deal of discussion as to a possible common cause of this condition, "malattie de la nona," and human sleeping sickness, and some confusion in the application of the term. It seems quite reasonable to surmise that *malattie de la nona*, or "nona" for short, at first correctly applied to the lethargy of the silkworm, was finally made to include human lethargy as well. This explanation is offered to Professor Flexner for what it may be worth.

PERCY FRIDENBERG, M.D., New York.

FACTS LEADING TO PUBLICATION OF "ARMY FROWNS AND SMILES"

To the Editor:—Will you please be equally as fair to me and publish this reply in your next issue, as you were in publishing the article written by Surgeon-General Merritte W. Ireland in a recent issue regarding my book?

It is unnecessary to enter into a lengthy discussion of the issues involved; suffice it to say, everybody will agree that it is most unusual for a sane man near 34 years old to make such bold statements as I do in my book and then not only sign them but also add to his signature a "sworn affidavit that they were true," unless he knew whereof he spoke.

There are two clear, outstanding reasons why I was not allowed to testify in my own behalf, not even reprimanded for "making false statements," given an honorable discharge from the army two months after having been branded as a liar, and then refused a thorough investigation by the leading government officials of the United States: First, because they are the biggest bunch of back-boneless, pussy-footed white-washers that ever held power in any nation, so far as I know, so help me God. Second, because they knew full

well that I could prove the statements made in my book. Therefore my appeals for justice have been ignored or refused.

DOLPHUS E. COMPERE, M.D., Dallas, Texas.

[NOTE.—Possibly we ought to apologize for printing this communication; we publish it that we may be considered "equally as fair."—ED.]

COMPULSORY VACCINATION

To the Editor:—Compulsory vaccination is repugnant to the popular conception of our institutions. A small minority of our people object to it on business, religious or moral grounds, and a rather extensive minority heedlessly neglect it, so that I suppose today a third of our population is unvaccinated. It is doubtful, even if the courts sustained a compulsory vaccination law, whether it could be enforced with any useful degree of efficiency. Under such circumstances, nothing but the compulsion of fear will drive these recalcitrant ones to seek protection against this dread affection; for, so long as the state takes on itself to protect them by isolation and quarantine of the infected ones, so long will this efficient safeguard be neglected. And my suggestion is that they be driven by personal fear to seek this protection voluntarily. To that end I would repeal all law aimed at smallpox, and leave its victims free to mix indiscriminately with society; but I would provide by law for free vaccination to all comers.

WILLIAM B. ELY, M.D., Ainsworth, Neb.

"MEDICINE A HUNDRED YEARS AGO"

To the Editor:—In the abstract of Deelman and Delprat's paper (THE JOURNAL, April 17, 1920, p. 1138), the allusion to operations by Dupuytren and Larrey for kidney stone should read *bladder* stone. The first attempt even for renal calculus by Durham (London) was not made until 1870, and the first success was by Ingalls (Boston), Nov. 8, 1873.

J. RAWSON PENNINGTON, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DEFINITION OF ANOCI-ASSOCIATION, METABOLISM, HORMONES AND VITAMINS—EPINEPHRIN TEST OF GOETSCH

To the Editor:—I shall be obliged to you for information on the following:

1. What is anoci-association; its philological derivation; different forms, applications, etc.?
2. A good definition of metabolism; the different kinds — "basal metabolism," etc.; philological roots; scientific applications, etc.
3. What are hormones; philological derivation; classification, names of those known; practical application?
4. What are vitamins; derivation of this word; classification, application, known kinds, etc.?
5. What is the epinephrin test of Goetsch; technic and clinical applications?

A. I., Ciudad del Carmen, Camp. Mexico.

ANSWER.—1. "Anoci-association" is coined from *a* (Latin privative particle) + *noci* (Latin *nocere*, to injure) + association (Latin *associatio*). Noci-association is the unconscious discharge of nervous energy under the stimulus of trauma, especially in surgical shock. The term anoci-association was introduced by Dr. G. W. Crile to characterize his method of so conducting the anesthesia and managing the operation that this injurious nervous discharge is prevented and counteracted. The procedure contemplates isolating the operative field from the brain by blocking the conduction of harmful sensory and traumatic impulses through

the use of a proper local anesthetic. The patient is gently managed before operation, and if no contraindication exists, a preliminary injection of morphin or morphin and scopolamin is made. When the patient is under the influence of the anesthetic (Dr. Crile prefers nitrous oxid anesthesia), the field of operation is blocked by infiltration with procain (novocain), 1:4,000. The operation is conducted with gentleness, so as to avoid any unnecessary trauma. At the close of the operation a local injection of quinin and urea hydrochlorid avoids nerve exhaustion from after-pain and post-operative stimulation.

2. The term "metabolism" is derived from the Greek (*μεταβολή*, change). It is the act or process by which, on the one hand, the stable nonliving food is built up into complex and unstable living material, and by which, on the other hand, the living matter in protoplasm is broken down into less complex and more stable substances within a cell or organism. Metabolism has been divided into constructive metabolism (anabolism) and destructive metabolism (catabolism). The former comprises the processes by which food substances are converted into protoplasm, while catabolism is the means by which protoplasm breaks down into simpler products as waste or excretory products. In a broad sense, metabolism includes all processes involved in the maintenance of animal life. Basal metabolism is a measure of the energy metabolism of a normal fasting person at rest. It is determined by ascertaining the heat production or gaseous interchange, and is expressed in calories per kilogram of body weight.

3. The term "hormone" was introduced by Prof. E. H. Starling to characterize a group of chemical substances which, formed in one organ, are carried by the blood stream to an associated organ and there excite a specific functional activity. The word is coined from the Greek (*ὁρμάω*, arouse or excite). The active principles of internal secretions are hormones. Those which have been described are secretin (gastric hormone), hormones of the liver, pancreas, kidney, testis, ovary and corpus luteum, epinephrin and the active substances of the thyroid apparatus, the thymus gland and the pituitary body. The rational treatment of diseases of the ductless glands by organotherapy is based on recognition of the physiologic activities of the hormones.

4. Vitamins (from *vita*, life, and *amin*) are a class of substances of unknown chemical composition, believed to be necessary to normal nutrition and growth, and absence of which from the diet, it is stated, produces certain deficiency diseases, such as beriberi, scurvy and rickets.

5. The test referred to is that called "skin reaction of Goetsch." Eight minims of a 1:1,000 solution of epinephrin are diluted with an equal quantity of sterile water and injected hypodermically into the arm. Immediately there is formed an area of blanching around the point of injection, and about the margin of this usually a red areola gradually shading off into the surrounding tissue. In about half an hour the center of the white area becomes bluish gray to lavender, and at the end of about one and a half to two hours the red areola takes on the bluish or lavender color, while that in the center disappears. This lavender areola remains for about four hours from the time of injection and is the most characteristic part of the test. Accompanying the local reaction may be increase in pulse rate; with palpitation of the heart and an exaggeration of the tremor and nervous symptoms in general. The test is designed to elicit evidence of hyperthyroidism.

MARINESCO AND OGILVIE METHODS OF INTRASPINAL THERAPY

To the Editor:—Please describe the Marinesco and the Ogilvie technics for intraspinal therapy with neo-arsphenamin and arsphenamin. Please omit name in published answer.

W. S. R., Charleston, W. Va.

ANSWER.—The method of Marinesco, which Minea assisted in elaborating, was first published in the *Zeitschrift für physikalische und diätetische Therapie* (17:194, 1913) and soon after in the *Bulletin de l'Académie de médecine* (71:259, 1914). It consisted in the addition of from 6 to 12 mg. of neo-arsphenamin to 2 c.c. of the blood serum of the patient, after this had been inactivated. The mixture was placed on the water bath at 37 C. for forty-five minutes, and was then injected into the subarachnoid space. An injection was made every seven or eight days for as long as seemed indicated.

Ogilvie's method was first described in THE JOURNAL, Nov. 28, 1914, p. 1936. The technic employed is as follows:

About 50 c.c. of blood are drawn into a centrifuge bottle by means of a McRae vacuum needle. The bottle is immediately placed in a large centrifuge and the fibrin and cellular elements are thrown down. It requires a speed of about 3,000 revolutions for fifteen minutes to produce a perfectly clear serum. It is rarely necessary to centrifuge more than once if the blood is freshly drawn, but the process should be repeated if the serum is not absolutely free from cells and fibrin. To 15 c.c. of serum is then added the amount of arsphenamin to be given. This is done by mixing the arsphenamin as for an intravenous treatment, using freshly distilled and boiled water, and bringing the total quantity up so that each 40 c.c. of the solution will contain 1.0 dg. (0.1 gm.) of the drug. Each cubic centimeter of this solution will then contain 2.5 mg. of arsphenamin. With a 1 c.c. pipet, graduated into tenths, the desired amount can be readily measured from 0.25 mg. upward. In adding the sodium hydroxid it is of the greatest importance to use only the exact amount required to alkalize the solution very faintly. When this has once been determined by testing with litmus paper, the sodium hydroxid should always be added quickly, and not drop by drop. It is also very important that the temperature of the arsphenamin and serum be the same when the two are mixed. The serum is then gently agitated to mix the two thoroughly, and is placed in a thermostat at 37 C. for forty-five minutes. From this it is placed in a thermostat at 56 C. for thirty minutes. It is now ready to be given intraspinally, and it should be used as soon after preparation as possible. Under no circumstances should a serum be used that is more than three hours old.

BENEDICT'S BASAL METABOLISM DETERMINATION

To the Editor:—What is the Benedict method of basal metabolism determination as referred to by Dr. G. W. McCaskey in the opening sentence of his article in THE JOURNAL, April 3, 1920, p. 927?

FRED B. MORGAN, M.D., Clinton, Iowa.

ANSWER.—This method is based on the determination of the respiratory exchange by means of a calorimeter, this exchange being accepted as an index of alterations both in the character and in the amount of the basal metabolism, showing oxygen intake and carbon dioxide output. The method, which is complicated and can be performed only in a properly appointed laboratory, is described fully by Benedict in a number of articles. The more important of these are:

J. Biol. Chem. **20**: 263, 1915; *Boston M. & S. J.* **174**: 857 (June 15); 898 (June 22); 939 (June 29) 1916; **178**: 667 (May 16) 1918; **181**: 107 (July 31); 415 (Oct. 2) 1919; *Am. J. Physiol.* **41**: 275, 292 (Sept.) 1916.

See also:

Peabody, Meyer and Du Bois: *Arch. Int. Med.* **17**: 980 (June) 1916.

Means: *Boston M. & S. J.* **174**: 864 (June 15) 1916.

Gephart and Du Bois: *Arch. Int. Med.* **17**: 902 (June) 1916.

Moulton: *J. Biol. Chem.* **24**: 299 (March) 1916.

Aub, Du Bois and Soderstrom: *Arch. Int. Med.* **19**: 823, 840 (May) 1917.

Peabody, Wentworth and Barker: *Arch. Int. Med.* **20**: 468 (Sept.) 1917.

Bowen, B. D., and Boothby, W. M.: *J. Urol.* **1**: 469 (Oct.) 1917.

Abbott, M. E.: *Canadian M. Assn. J.* **8**: 491 (June) 1918.

Du Bois, Eugene F.: *M. Clin. N. Am.* **2**: 1201 (Jan.) 1919.

Gardner and Peppard: *Journal-Lancet* **39**: 495 (Sept. 15) 1919.

McCaskey: *New York M. J.* **110**: 607 (Oct. 11) 1919.

URTICARIA FOLLOWING USE OF PROCAIN

To the Editor:—Has the use of procain ever produced severe urticaria, even running to very pronounced angioneurotic edema?

H. C. AREY, M.D., Excelsior, Minn.

ANSWER.—Many cases are recorded in which drugs have caused urticaria, but procain is not on the list. Drug urticaria is presumably an anaphylactic reaction. It has followed administration of all sorts of drugs, when taken by mouth or when injected subcutaneously or intradermally. Angioneurotic edema, which is really a giant urticaria, has also been caused by drugs.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bld., Dr. C. E. Laws, Fort Smith.
FLORIDA: Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.
KENTUCKY: Louisville, May 17. Sec., Dr. A. F. McCormack, 532 W. Main St., Louisville.
LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
MASSACHUSETTS: Boston, May 11-13. Sec., Dr. Walter P. Bower, Room 144, State House, Boston.
MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, June 1-4. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.
OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.
TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

A SMALL COMMUNITY HOSPITAL

EDWARD F. STEVENS, A.I.A.

BOSTON

Small communities at a distance from the larger cities are often greatly handicapped by the lack of adequate facilities

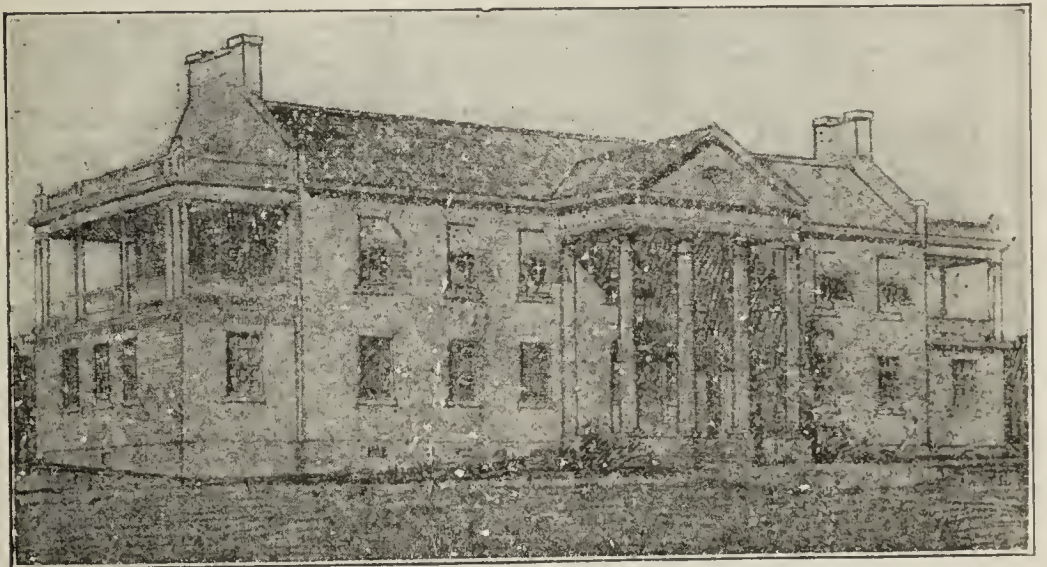


Fig. 1.—Front view of building (from architect's drawing): Exterior walls are of red brick with roof of red tile; exterior woodwork is painted white; the colonial style is especially adapted to this building, because of its prominent site and spacious grounds.

for the care of the sick and by lack of provision for operation and emergency treatment. Philanthropic citizens, with big hearts, but often with limited means, try to fill this need by securing rooms in an office building or a dwelling house, and the temporary hospital is established and much excellent service rendered. The office building or residence, however, not having been designed for the purpose, and having been built without regard to hygiene or convenience, fails to function properly. There is much lost motion and lack of complete service, and oftentimes a more retarded recovery than with a building planned for the purpose. The community in which the little hospital here illustrated is to be built has been served by the "office building" type of hospital, and while good results have been accomplished, the new hospital will undoubtedly relieve much suffering.

This hospital is located on a commanding site, away from the noises of business and traffic, with sunny exposure. The exterior of the building is in the southern colonial style of architecture, with the body of red brick. The finish of the portico, cornice and airing balconies is of wood, painted white. The roof is of red tile. The interior finish will be simple in character, with due regard to hygienic construction and ease of maintenance. The floors will be covered with

on the first floor, is quite complete, and is sufficiently removed from the entrance to avoid annoyance from that source. From the same section, the roentgen-ray department is approached. The staff room serves as a surgeons' dressing-room. The office is sufficiently near for proper administration. The remainder of the first floor is devoted to the kitchen, dining-rooms, heater and storage rooms. The rear entrance serves as an ambulance approach. While there is

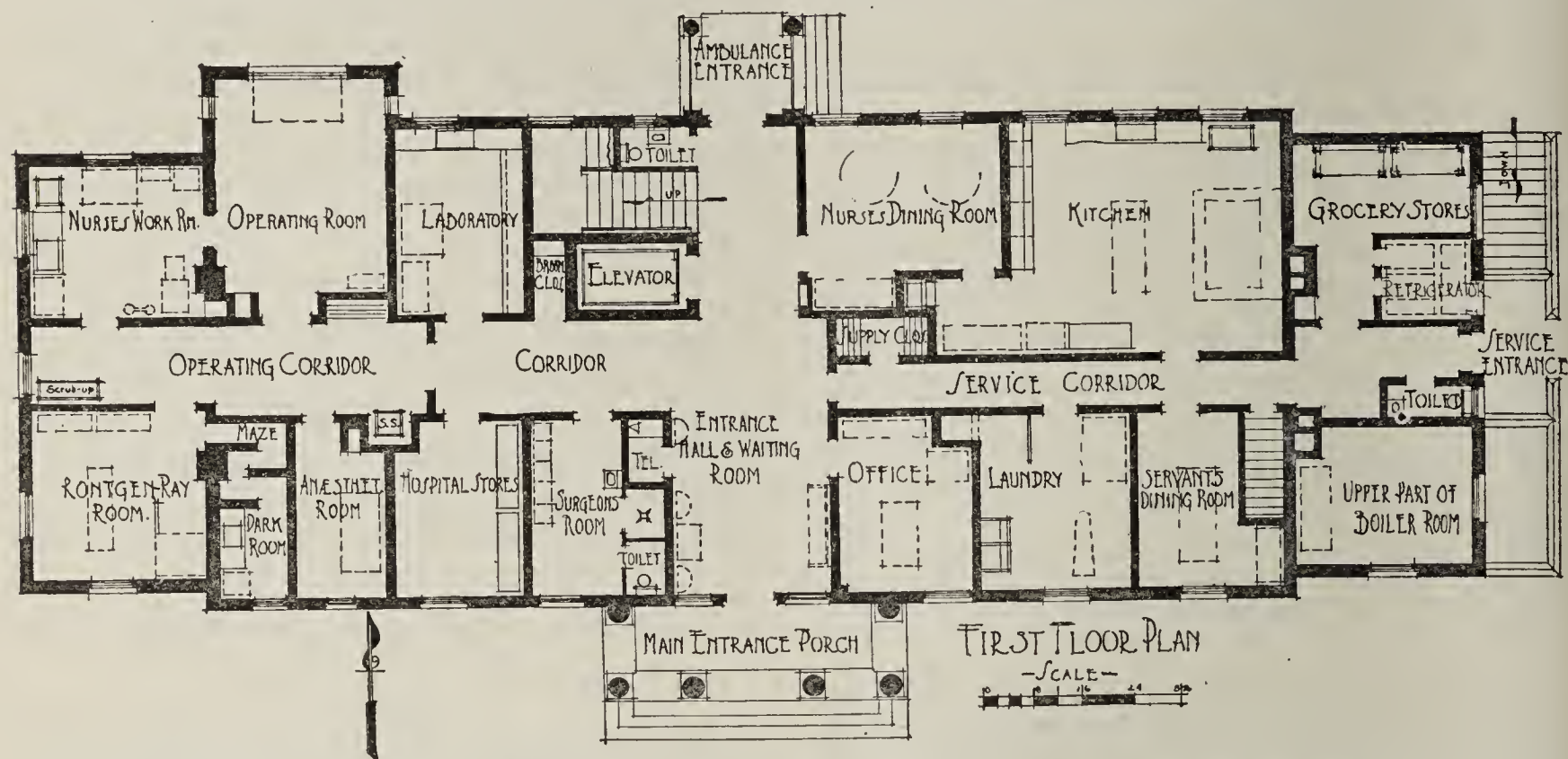


Fig. 2.—First floor plan: All of the administrative functions are provided for on the first floor; note the compactness and convenience of the arrangement; the placing of parts with relation to each other is worthy of study.

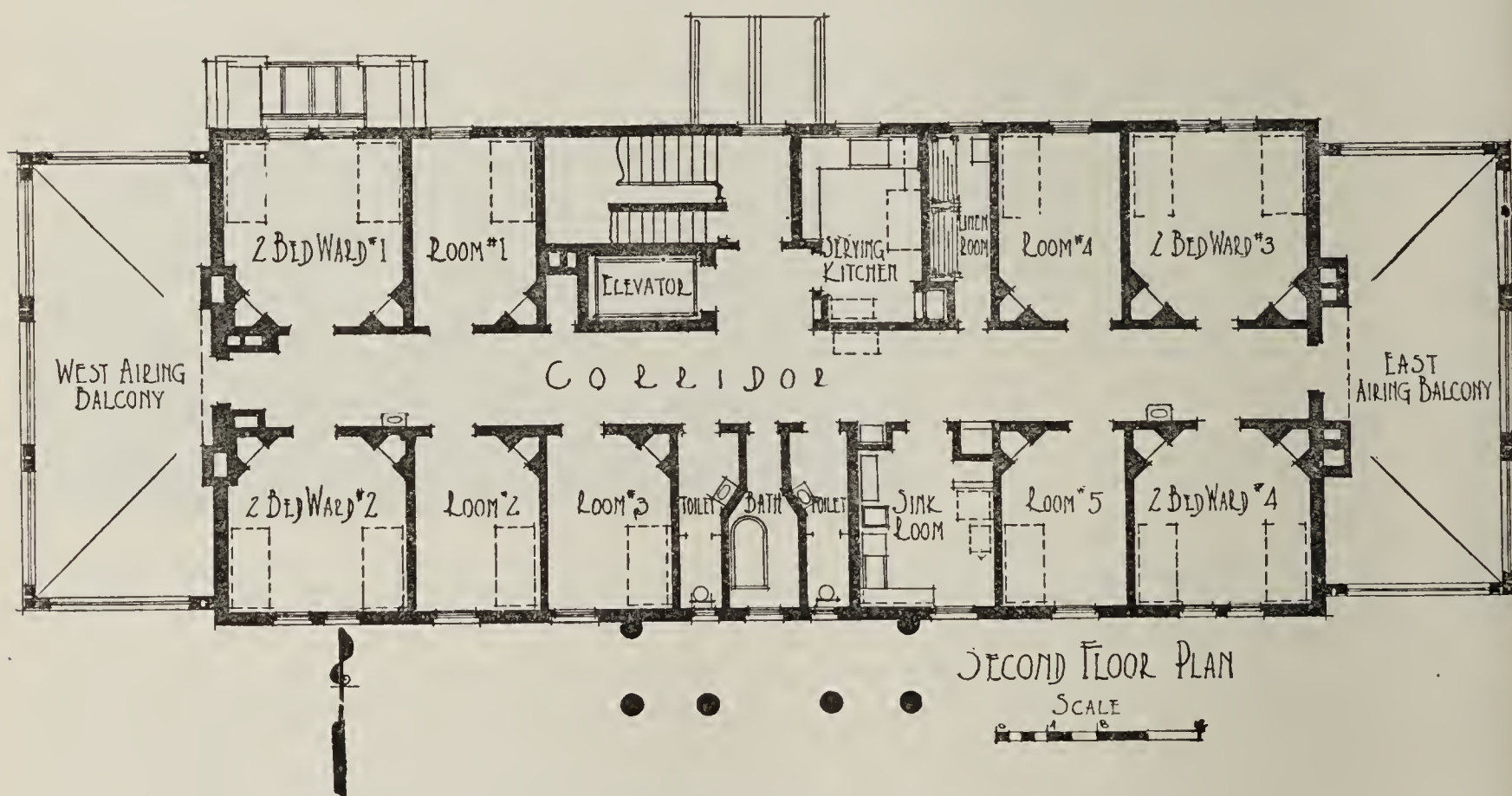


Fig. 3.—Second floor plan: Attention is called to central location of stairway, elevator, serving kitchen, toilets and bath, there are five private rooms and four two-bed wards; at each end is a large airing balcony.

linoleum, and the doors will be of the no-panel hospital type. The walls of the surgical department will be enameled, and the floors will be of tile or terrazzo. The colors employed on the walls will probably be delicate grays or tan. The hardware is to be special hospital type.

The placing of all of the administrative and surgical treatment departments on the first floor allows the exclusive use of the second floor for patients. The operating department,

space provided for an elevator, the stairs are made broad and are easily ascended.

On the second floor are the rooms for patients, divided into several three-bed wards and private rooms. The serving kitchen, sink room, toilets, bath and linen room provide the necessary accommodation for the proper service for the patients. At each end of the building, large airing balconies enable all patients to be brought into the open air.

Social Medicine and Medical Economics

SOCIAL PEDIATRICS*

HENRY L. K. SHAW, M.D.

Clinical Professor, Diseases of Children, Albany Medical College
ALBANY, N. Y.

In no branch of modern medicine has there been so much progress as in that of the prevention of disease. Emphasis is now being largely directed to health rather than to disease. The triumph of the medical corps in the World War both in this country and abroad over that invisible and insidious enemy—disease—was due largely to preventive measures. Every returned soldier and sailor has received practical instruction in public health, and a new vision of the domain of medicine came to all medical officers who entered the service.

Sir George Newman expresses the present trend of thought when he says that the "first duty of medicine today is not to cure disease but to prevent it." All our human knowledge and experience should be applied to the prevention of disease. Herein lies our greatest service to mankind. To cure is splendid and praiseworthy, but to prevent disease is Godlike and magnificent. Dr. Lyon writes that "some physicians fail because they take a narrow and individualistic view of their work. They get the patient so close to their eyes that they cannot see the public. They see their trade, but fail to recognize their profession." In the struggle for existence and the necessity for making a livelihood, the attitude of the medical profession toward social problems is likely to be narrow, selfish and individualistic. We need a broader vision, and we should appreciate that the claims of the health of the public are greater than those of any individual. Gittings, in an address on "Physicians and Social Service," said that as a class "we have been slow to recognize the importance of many of the lessons taught by sociology, and have allowed our study of disease, the figure in our limelight, to blind us to much of the background out of which disease emerges. The art of medicine of yesterday was too conservative in its conception of its true functions. So far as it has gone, the prevention of disease has proved to be one of the greatest achievements of the science of medicine of today."

Not one of us will dispute this statement; but what is being done to spread the gospel of public health among the physicians of this country? They must be educated, or rather reeducated, in modern medical social problems. A physician engrossed in private practice with its many demands and responsibilities will not have much leisure in which to take up any new line of study. The most satisfactory method lies in the medical school. The mind of the medical student is receptive and plastic, while it is hard to teach new tricks to old dogs. Dr. Ira S. Wile, in an address at the meeting of this section at Rochester in 1912, said that "medical schools exist for the purpose of supplying the community with men who are trained in caring for the public health. If the schools fail to teach their students the methods of preservation of life, they fall short of their ideal purpose. The position of the physician is altering, in that the community no longer regards him merely as an individual, capable of curing individual diseases, but as a specially gifted man, capable of guiding the public in and to health." The physician should be looked on as the leader in public health activities; but this work in a community

can never be elevated to a higher degree than the medical profession raises it. A stream is no purer than its source, and we must elevate and educate the source.

OPPORTUNITIES OPEN TO MEDICAL MEN IN SOCIAL WELFARE WORK

My object in this paper is to present a plea for systematic training in social pediatrics in our medical colleges. The prospective medical student should be directed in his pre-medical course to study sociology and economics and obtain a comprehensive grasp of the organization of modern society. This subject should appeal very strongly to those of us who specialize in diseases of children. By virtue of our training and experience we should take an active part in all social welfare agencies. The child forms the basis of most of our public health work. The foundation for many of the diseases and most of the defects of later life is laid in early childhood. The study of the child in health, the preservation of health and the prevention of disease are as essential in the practice of our profession as that of the study of the diagnosis, pathology and treatment of disease. We have not realized the great opportunities for service and the fulfillment of our highest professional ideals in directing and assisting social welfare and educational work. By our indifference we have allowed the nonmedical social worker to grasp a great opportunity and gather all the honor and glory. The physician, and not the social worker, is the logical arbiter of all problems relating to health. He is the one who should advise and direct and perhaps supervise the activities of health and sociomedical activities. He can uphold the honor and dignity of his profession on a loftier level than by simply being a purveyor of pills. Social medicine opens up great opportunities and new territories for service to members of the medical profession.

Dr. Richard Bolt, general director of the American Child Hygiene Association, proposes as an ideal scheme for the education of medical students in the essentials of infant and child welfare work:

1. A clear understanding of the structure of modern society, with special emphasis on the changes which are taking place in medicine from an individualistic to a community service.
2. Familiarity with the general methods of all social agencies working for the welfare of the child.
3. A knowledge of the causes of infant mortality, and the most approved methods of prevention.
4. A good working knowledge of obstetrics, especially in its relation to the nursing and social needs of the community.
5. Experience in maternity (prenatal) service.
6. A course of pediatrics, laying stress on the fundamentals in infant hygiene and infant feeding.
7. Thorough instruction in modern pediatric methods, with actual experience in a babies' dispensary and in an infant welfare center for prophylactic work.

I wish to submit a syllabus of a course of instruction in social pediatrics which is being carried out at the Albany Medical College. It is not perfect or complete by any means, but it will serve to illustrate the possibilities of such a course and point out some of the functions of social pediatrics.

INSTRUCTION IN SOCIAL PEDIATRICS AT ALBANY MEDICAL COLLEGE

The Child in Health:

Anatomy and physiology of infancy and childhood.
Difference from adults.
Growth and development.
Periodic physical examination.

Vital Statistics and Demography:

Birth registration. Stillbirths. Illegitimacy.
Methods of improving.
Mortality statistics:

Rates at different ages and seasons.
Effect of season and climate.

Mortality During Childhood:

Definition and significance.
Distribution in the United States and other countries.

*Read before the Section on Pediatrics at the One Hundred and Sixty-Fourth annual meeting of the Medical Society of the State of New York, New York, March 23, 1920.

General causes: Prenatal; natal; postnatal; preventable; nonpreventable.

Causes by age periods.

Effect of poverty and ignorance.

Influence of domestic and social conditions:

Age and nationality of mother.

Effects of alcohol and venereal disease.

Food; nursing; milk; proprietary foods; diet.

Preventive methods:

The mother (maternal work; number of children; age of mother).

The child.

The surroundings.

Social conditions: housing, sanitation, etc.

Prenatal and Maternity Care:

Childbirth statistics.

Causes of death: Baby: fetal and congenital; mother.

Instruction of expectant mothers.

Systematic examinations.

The mother in industry.

Regulation of midwives.

Prenatal clinics and maternity centers.

Care of mother during pregnancy.

Care of mother: at confinement; hospital.

Prevention of blindness.

The prenatal nurse.

Infant Hygiene:

Foundling asylums; baby farms; boarding out and adoption; infant hospitals.

Instruction of mothers: breast-feeding, etc.; proprietary foods.

Importance of pure, clean and safe milk.

Infant welfare stations: municipal; private.

Day nurseries: objects: regulation and inspection; the child welfare nurse.

Child Hygiene:

Preschool period: diet and nutrition; physical examination; correction of defects; posture, teeth, adenoids, tonsils, rickets; nursing schools.

School age:

Medical school inspection; physician-nurses.

Periodic examinations: weight, height, etc.

Early treatment of defects: vision, hearing, nose and throat, skin, etc.

Dental clinics; mouth hygiene.

Treatment of dental defects.

Prevention of infectious diseases.

Diet and nutrition; school lunches.

Mental examination; special classes.

Physical training; open air classes.

Supervised play; recreation and playgrounds.

Health education of teachers and pupils.

Little mothers' leagues; Junior Red Cross; Crusaders.

School sanitation, ventilation, fumigation, lighting, cleaning.

Adjustable seats and desks.

The school nurse.

Care and Education of Abnormal Children:

Backward and mentally deficient children.

Institutional care; commitment.

The crippled child.

The blind child.

The deaf and dumb child.

The delinquent child; juvenile courts.

The Child in Industry:

State and national legislation.

Approved standards of child labor.

Employment certificates.

Educational and physical requirements.

Supervision and periodic examinations.

Widows' and mothers' pensions.

Tuberculosis in Children:

Physical examinations.

Protection of exposed children.

Home supervision.

Preventoriums; sanatoriums; day camps, etc.

Follow-up work.

Child Welfare Propaganda:

Extension and educational work.

Exhibits, posters, moving pictures, newspaper publicity, pamphlets, etc.

Lectures and demonstrations.

Administration of Child Welfare centers.

National Child Welfare Organizations:

American Child Hygiene Association.

Child Health Organization.

Child Labor Committee.

American Public Health Association.

Parent-Teachers Association.

State and local child welfare organizations.

Health Agencies:

Federal:

Children's Bureau.

U. S. Public Health Service.

Department of Education.

State:

State department of health.

Division of child hygiene.

Vital statistics.

Public health nursing.

State board of charities.

State department of education.

Municipal:

Health department.

Board of education.

Child welfare stations.

Private:

Day nurseries.

Maternity centers.

Playground associations, etc.

POSSIBILITIES OF COOPERATION

Clinical facilities for demonstration and practical instruction can be provided in any city large enough to maintain a medical college. The city bureau of health could make available its various departments, including child welfare stations, tuberculosis clinics, milk and dairy inspection, vital statistics, etc. The bureau of education could provide opportunities for the study of the health and hygiene of the school-child, dental clinics, nutrition classes, and the follow-up work of school nurses. Private agencies that support day nurseries, playground associations, orphan asylums, infants' homes and other places of child welfare work would cooperate in this work of instruction. In fact, the interest of all agencies engaged in health, welfare and relief work could be secured and a full cooperation arranged.

CONCLUSION

We are now entering on a world wide era of reconstruction in which the subject of health will receive more attention than it has in the past. The medical profession must advance with the spirit of the times and be prepared to take an active and leading part.

Let us, therefore, by our own interest and influence hasten the day when social pediatrics shall take a prominent place in the curriculum of our medical schools. The physicians of the next generation will then be equipped for greater service for mankind.

361 State Street.

COMPULSORY HEALTH INSURANCE

At a social insurance session of the National Civic Federation, presided over by Samuel Gompers, Mr. James W. Sullivan of the American Federation of Labor made the following points:

The state may justly carry out measures intended to protect all its citizens alike against the various menaces to health and to control treatment of the sick. In the matter of meeting wage losses, the state may be expected to supervise associations for the purpose, and supply the machinery for such supervision. How much further should it go? The trade unionist stops to reflect when in theory he is brought to the line which sets the wage-workers aside as wards of the state, as subjects of special regulation, and as material for a social machinery run by state officials.

Sickness insurance! What is to be insured? What is sickness? Who is sick? Who is to decide when one is sick? Who is to say when one's sickness is his own fault? Who is to determine justly many questions in the matter of sickness? To what degree is sickness a mere matter of the mind? People of robust mentality ignore the aches and pains which frighten timid people. One's habitual attitude toward sickness counts for much. Some have the doctoring habit, some the "patent medicine" habit, some the habit of ignoring what sends other people to bed. Under any form of sickness insurance, voluntary or compulsory, a certain proportion of the members of any group would quickly develop the habit, to be indulged in to the maximum degree, of being "on the funds."

A fair statement of the present attitude of organized labor is that, in the case of sickness insurance, as with respect to many other propositions, it refuses to take a plunge in support of a project which is part of the program of socialism. Nor is it prepared to support without careful scrutiny measures drawn up by associations not in its membership; it will not approve of any law which will tend to break down its own systems of mutual assistance; it regards the degree to

which the interposition of the state shall extend as a matter to be settled in favor of the principle of liberty of the individual; it resents an indiscriminate classification of wage-earners as objects of public relief; it looks to wider measures than sickness insurance in the social campaign for the reduction of the death rate, the prevention of sickness, the improvement of public methods of caring for the sick and, finally, for the general sharing of the burdens of sickness.

Book Notices

LA RACHIANESTHÉSIE GÉNÉRALE. Par Professeur Thomas Jonnesco. Paper. Price, 4 francs net. Pp. 126. Paris: Masson et Cie, 1919.

This is an exposition of Jonnesco's method of what he calls general spinal anesthesia. The author wishes to make clear that the essential thing is the method he uses and not the particular substance stovain, which is only an adjuvant that may be replaced by any other local anesthetic in which the surgeon may have confidence. The author uses stovain and strychnin sulphate. He lays great stress on having the substances properly prepared. For his own use he has them prepared in separate ampules: a definite amount of strychnin dissolved in 1 c.c. of distilled water in one ampule, and a definite amount of stovain crystals in another ampule. Both, of course, are sterilized. He emphasizes the importance of having the stovain sterilized by heating it to 100 C. on three different occasions. When ready to be used, the strychnin solution, always 1 c.c. in amount, regardless of the quantity of strychnin contained, is mixed with the stovain in the ampule, and solution is favored by gently heating the ampule. When thoroughly dissolved, it is drawn up in the syringe and slowly injected. Four points of election are given for injecting the solution: the inferior lumbar, the dorsolumbar, the superior dorsal and the midcervical, depending on the extent of the anesthesia desired. It is stated that there are no contraindications to the use of the method; but the dose of stovain, as well as that of strychnin, must be adjusted very carefully to the age and general condition of the patient. During five years the author and his associates performed 11,329 operations by this method. Of this number, 1,035 were high or midcervical, and 10,289 low injections. In this number were included operations on all parts of the body, from head to foot. It is asserted that there were only two deaths that could be attributed to the anesthetic, and these, which occurred in the hands of two of his associates, were due, according to the author, to faulty technic from lack of experience, in that too large a dose of stovain was used for cervical injections. Notwithstanding the excellent results that the author reports and the enthusiasm with which he defends them, the method has found few followers outside of his own associates. He himself says: "It is always necessary to bear in mind that spinal anesthesia is not an empirical method and that it is not to be considered a simple maneuver to be executed according to definite fixed rules in advance. The method requires to be applied by a man of science, conscious of his duty, and knowing that he has in his hands an excellent, exact and powerful agent, but only on condition that he take pains to understand it and to employ it intelligently."

RAMBLING RECOLLECTIONS: AN AUTOBIOGRAPHY. By A. D. Rockwell, M.D. Cloth. Price, \$4 net. Pp. 350, with 7 illustrations. New York: Paul B. Hoeber, 1920.

Dr. Rockwell, now in his eightieth year, has been so long out of the active whirl of medical life that one is reminded by this book that he is not only still alive but active so far as writing is concerned. To those who were engaged in practice twenty-five or thirty years ago, the name A. D. Rockwell immediately calls to mind one of the most pretentious and practical books on medical electricity published in this country—Beard and Rockwell's *Medical and Surgical Uses of Electricity*—a book the popularity of which is attested by the fact that it passed through some ten or twelve revisions and editions. It and the miscellaneous contribu-

tions on the subject by these two men had much to do with the wide use of electricity during the last two decades of the nineteenth century. The medical battery—at least the faradic box—was then to be found in the offices of half the physicians of the country. Its uses as a therapeutic agent were almost unlimited, and it was recommended for a variety of conditions, from constipation to ectopic gestation.

The title of this autobiography is descriptive of the book. It is made up of recollections more or less rambling in character. But this is not a fault for the author presents it not as a real biography but rather as comments on men and things, with the story of his own life incidentally woven in. A book of such character—written by a man of wide experience, including that of both private and army surgeon in the Civil War, and extending over three fourths of a century—could not be other than interesting and instructive.

PRAKTISCHE BAKTERIOLOGIE FÜR AERZTE UND STUDIERENDE. Von Dr. L. Paneth, Assistent am kgl. Institut "Robert Koch" in Berlin. Paper. Price, 8 marks. Pp. 158, with illustrations. Berlin: Urban & Schwarzenberg, 1919.

This is a brief manual describing laboratory technic for diagnosis of infectious diseases. In general it will be of little use for American physicians and laboratory workers, as many of the methods differ materially from those used in our laboratories. Where the methods are the same, descriptions are available in American publications.

Medicolegal

Treatment of Osteomyelitis—General and Special Employment

(*Nelson v. Farrish et al. (Minn.), 173 N. W. R. 715*)

The Supreme Court of Minnesota, which affirms a judgment in favor of the defendants who were sued for alleged malpractice in the treatment of a child afflicted with osteomyelitis in the radius, says that defendant Farrish was called, November 12, to treat the case. The disease grew worse, and, on the 18th, defendant Portmann was called. He attended with Dr. Farrish, examined the arm, and gave directions as to treatment. He did not take full charge of the case, was apparently not expected to return unless called, and, when he left, gave directions that if they "needed him any more to call him." On the 22d he was called again, and came. Dr. Farrish also was present. Dr. Portmann gave some directions as to treatment, but did not come, and apparently was not expected to come again without being called. Dr. Farrish continued to treat the arm. It continued to grow worse, and, December 2, Dr. Portmann was again sent for. He was not at home and, instead, his son came and the next day took the child to a hospital, where he and defendant Portmann performed an operation on the following day. Dr. Farrish's employment then ceased. In January the parents took the child to a hospital in St. Paul, where a surgeon performed an operation in the presence of defendant Portmann, and found it necessary to remove the radius, which was done.

It was conceded by all that the proper treatment for osteomyelitis was by operation, consisting in opening the shaft of the bone and affording drainage of the pus and removal of diseased tissue. The plaintiff charged that the defendants did not advise or suggest that treatment, and did not correctly diagnose the case until the disease had progressed so far that the bone was beyond treatment and the use of the arm virtually lost, whereas it might have been saved. The defendants, on the other hand, insisted that they did promptly diagnose the disease and advised the parents of its true nature, and seasonably advised operative relief, and that the parents objected to any operation, until it was too late to save the arm. The trial judge instructed the jury that if the defendants within a reasonable time made a correct diagnosis and clearly advised the parents of the nature

of the ailment, of the importance of an immediate surgical operation, and of the result likely to follow a refusal, and the parents refused to permit such operation, the verdict of the jury should be for the defendants; but that if the defendants failed to diagnose and treat the child with reasonable and ordinary skill, and such failure resulted in the injury complained of, then the defendants were liable for damages. The supreme court finds no error in this instruction, and holds that the evidence was such as to sustain a verdict for the defendants.

The plaintiff contended that defendant Portmann was employed generally to diagnose, treat and cure, and complained that the jury was instructed that he was called in consultation with Dr. Farrish; but, under the evidence, the supreme court thinks that the ruling was right. However, so far as concerned his liability for what occurred on the occasion of his visits, it was not very material in which capacity he was called. He was called as a physician and surgeon to diagnose the disease and prescribe or direct treatment for its cure, regardless of what Dr. Farrish had done. While he was there he owed the duty to employ reasonable professional skill. The court did not rule or instruct otherwise. There was no claim on his behalf that he had not ample opportunity to diagnose correctly the disease. He claimed that he did so, and advised the family of his diagnosis. In this connection it is pertinent to observe that there was no question but that Dr. Farrish's employment was general. Since the jury found in his favor, it is difficult to see how it could have found otherwise as to Dr. Portmann, whether his employment was general or as a consultant. In no possible view of the case could it be said that the obligation or liability of Dr. Portmann was greater than that of Dr. Farrish. The difference between general and special employment relates mainly to the obligation of the physician to continue his attention. If called generally he must give such continued attention and attendance as the condition of the patient requires. But if called specially and only for the occasion, he owes no duty to repeat his visits or continue his treatment. The court thinks it was the effect of the testimony of the plaintiff's witnesses that defendant Portmann was not expected to return, except when called, and that he owed no duty to do so, and could be held liable for only such damages as resulted from his connection with the case on the occasion of his visits.

Breach of Contract to Furnish Medical Services— Chronic Diseases—Prolapsus

(*Coffey v. Northwestern Hospital Association (Ore.)*, 183 Pac. R. 762)

The Supreme Court of Oregon, in affirming a judgment in favor of the plaintiff for \$1,500 damages, says that this was an action for breach of a contract to furnish the plaintiff medical and surgical services in case of illness. The contract stated that it did not cover chronic diseases. In reply to a letter which described fully the plaintiff's condition, the defendant said, in effect: "Your disease is chronic, and not subject to treatment under our contract; but come down, and if we find it is not chronic we will treat you." The reply was substantially a refusal to treat her under the contract for the disease from which she was suffering, on the ground that it was chronic, and therefore not within the contract. No person in the plaintiff's condition would have gone after having been informed that, if she had the sickness which she claimed to have, she would not be treated. If the trouble was, in fact, a chronic one, the defendant was justified; otherwise, its refusal was a breach of the contract which rendered it liable in damages.

The evidence introduced as to the disease from which the plaintiff was suffering indicated that in 1910 she suffered from prolapsus uteri, and that as a result of an operation she was completely cured of that trouble, and was in sound health when she became a party to the contract with the defendant; that this condition continued for about two and a half years; that later, when the plaintiff did hard work or lifting, she had temporary prolapsus, but that her condition always became normal on ceasing such work. The effect of the plaintiff's testimony was that she had frequent attacks or recurrences of the trouble at intervals, produced by over-

work or lifting, but that the trouble was not continuous. The evidence on behalf of the plaintiff indicated that she was much more susceptible to attacks of this character than the ordinary woman, but this fact alone did not render the disease chronic.

It is a fact well known, even to laymen, that there are persons whose bones are so brittle from disease or malnutrition that they are broken by blows or falls which would do no particular injury to a person whose bones are normal; but it does not follow that such persons have chronic broken arms or legs. Some persons are poisoned by the slightest contact with poison ivy, while others are not affected by it; but it does not follow that the susceptible person is afflicted with chronic ivy poisoning.

A chronic disease is one of long duration or characterized by slowly progressive symptoms. It appeared that the plaintiff's first attack was cured in three weeks by an operation; that she remained in good health for more than two years, and that subsequent attacks were cured by avoiding the causes which produced them. Whether the plaintiff's ailment was chronic was a question of fact for the jury, which was instructed, in substance, that the burden of proof was on the plaintiff to show that she was not suffering from a chronic ailment.

Lastly, it was a forced construction of the contract to say that it required the defendant to render services only in the city where it had a hospital, when three things were promised the members of the association: (1) free hospital service where a hospital was provided; (2) free medical treatment, without any specification as to where it was to be rendered, and (3) free surgical treatment under the same conditions.

Epilepsy Not Ground for Annulment of Marriage

(*Behsman v. Behsman (Minn.)*, 174 N. W. R. 611)

The Supreme Court of Minnesota, in affirming a judgment refusing to annul a marriage contract on the ground that one of the parties thereto was an epileptic at the time of the marriage, holds that proof that the defendant was an epileptic at the time of such marriage was not, in the absence of a showing of fraud on the part of the afflicted party in concealing the epileptic condition, sufficient to warrant a decree of annulment. It holds that, the legislature not having prescribed epilepsy as a ground for the annulment of marriage, and the courts of the state never having recognized that disease as a cause for nullifying a marriage contract, the judgment of the trial court denying such relief was justified, notwithstanding a finding of fact that the defendant was an epileptic at the time of the marriage. The findings of the trial court in this case were, in effect, that the parties were married in 1907; that the issue of such marriage was three children; that the defendant was and had been ever since she was 2 years of age an epileptic; that the disease continued to grow on her until Sept. 3, 1915, when she became insane and was committed to a hospital for the insane; that she was becoming more irrational and violent and was not expected to improve in her condition; that the plaintiff and the defendant lived together as husband and wife until shortly before the defendant became insane, and that the plaintiff did not know that the disease with which the defendant was afflicted was epilepsy until about Sept. 3, 1915. As conclusions of law, the court found that the plaintiff was not entitled to have the marriage annulled, but that he was entitled to the custody of the children, and the supreme court is of the opinion that the judgment should stand. Section 7090 of the General Statutes of Minnesota of 1915 provides that no marriage shall be contracted between persons either of whom is epileptic, feeble-minded or insane, and Section 7107 provides that when either party to a marriage is incapable of assenting thereto for want of age or understanding, or when the consent of either has been obtained by force or fraud, and there is no subsequent voluntary cohabitation of the parties, the marriage may be annulled; but the legislature has not prescribed epilepsy as a ground for annulment of marriage, nor have the courts of Minnesota recognized that disease as cause for nullifying the marriage contract.

Society Proceedings

COMING MEETINGS

American Association for Thoracic Surgery, New Orleans, May 1.
American Association of Physicians, Atlantic City, May 4-5.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Arkansas Medical Society, Eureka Springs, June 8-9.
Association of American Peroral Endoscopists, Boston, June 1.
California State Medical Society, Santa Barbara, May 11-13.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Massachusetts Medical Society, Boston, June 8-9.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson, May 11-12.
Nebraska State Medical Association, Omaha, May 24-26.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Hampshire Medical Society, Concord, May 12-13.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

MISSOURI STATE MEDICAL ASSOCIATION

Sixty-Third Annual Meeting, held at Jefferson City, April 6-8, 1920

Artificial Anus

DR. W. T. COUGHLIN, St. Louis: A preoperative explanation of the operation to the patient is advisable. The amount of relief to be expected varies with the indication for the operation. Not much benefit to the primary condition is to be expected when the operation is undertaken for cancer of the bowel below. The decision for or against the operation should be left to the patient except when the operation is performed for the relief of acute obstruction.

Autoplastic Repair of Ununited Fractures and Bony Defects

DR. ERNEST F. ROBINSON, Kansas City: Bone surgery has passed through many changes and contradictory phases, but we have at last arrived at a satisfactory rational method in the autoplastic repair of bone. Some fundamental facts have been deduced in reference to the autogenous repair of fractures: 1. Fractures in which good functional results may be secured by external means (and this number in recent years has been greatly increased by modern military splints and devices) should not be operated on. 2. In fractures which cannot be properly reduced and immobilized, autoplastic repair is usually the only safe procedure. All metal devices, Lane plates, nails, screws, clamps and all foreign bodies in bone fractures are a failure, and prevent rather than produce union. Autoplastic graft is resistant to infection. It is absorbed or becomes an integral part of the bone itself. Two methods of bone transplantation may be considered: (a) the bone inlay, as perfected by Albee, or (b) the dowel peg or intramedullary splint. In either or both we must have: (1) an aseptic operative wound; (2) a live transplant from the same individual—preferably with periosteum; (3) actual contact between graft and bone, and (4) perfect and complete immobilization. Usually there is complete absorption with bone organization. Occasionally, early absorption takes place because of specific ferments. My own preference is in favor of the medullary transplant over the bone inlay, as there is less likelihood of infection and no foreign substance (such as catgut or tendon sutures to be absorbed) is left in the wound. In the great percentage of cases, union with satisfactory results can be assured. Such operations are as uniformly successful as are any in surgery.

Traumatic Aneurysm

DR. HERBERT S. VALENTINE, Kansas City: In traumatic aneurysms, particular attention is called to the possibility of hemorrhage from one false aneurysm giving rise to one or even more secondary aneurysms. Couteaud's observations regarding the weakness of the pulse proximal to an arterial lesion may be of value, especially when other localizing symptoms are absent. Contrary to the commonly accepted ideas, it has been found by English surgeons that in many cases simultaneous ligation of vein and artery may be safer as regards both life and avoidance of gangrene, than is ligation of the artery alone.

Treatment of Dacryocystitis by Curettage and Rapid Dilatation

DR. JOHN GREEN, JR., St. Louis: Curettage of the sac and duct as a treatment for chronic dacryocystitis was proposed by Thompson in 1918. This method proved fairly successful in my hands, but some failures led me to supplement this procedure by immediate rapid dilatation of the lacrimonasal duct. The dilated duct thus affords adequate primary and secondary drainage. The operation is facilitated by the use of specially designed lacrimal sac burrs and lacrimal duct reamers.

Subconjunctival Injections in the Treatment of Ulcers and Infected Wounds of the Cornea

DR. W. H. SCHUTZ, Kansas City: The lack of any generally accepted method of treating corneal infections led me to try mercuric cyanid. Dr. E. L. Jones of Maryland for some time persisted in drawing attention to this method, and declares that it has proved the most reliable and effective means of treating the conditions described. The power and healing effects of the injections are thought to be due not to the specific drug itself but to some process in which the drug merely acts to increase the circulatory activities to distend and flush the lymph channels. The advantages of this method may be thus summed up: There is no destruction of corneal tissue; the site of the ulcer, the stage it is in, or the size or any other reserve, need not be considered. The healing is sure and rapid, the transparency of the cornea more marked and scar formation less evident. The influence of the treatment on the subjective symptoms is very evident and positive. Immediately after injection, the pain is more or less of a severe type, lasting from ten to thirty minutes, but made bearable by the application of hot compresses. When the postoperative pain has ceased, further suffering from the disease vanishes entirely in the majority of cases; and in the few instances in which it does not, the amelioration is so positive that the patient seldom fails to express words of gratitude.

The Present Status of Nitrous Oxid Anesthesia

DR. MORRIS H. CLARK, Kansas City: The failure of nitrous oxid to keep pace with ether and chloroform as a general anesthetic is due to difficulty in mechanically handling the gas, and failure to recognize that it is a selective anesthetic not applicable to all cases. It is an anesthetic of details. Nitrous oxid should never be given except in connection with oxygen. Modern apparatus should have these necessary requirements: reducing valves for both nitrous oxid and oxygen, and means of controlling the rate of flow, percentage of mixture and pressure in the breathing bag. Ether attachment should be present in case of need. Ether in small amounts may be used to bridge over more painful procedures, or for stimulation during shock. The amount need not be more than from 1 to 4 drams during the course of a long anesthetic. This small amount produces no harmful after-effects.

Cardiolysis for Chronic Mediastinopericarditis

DR. ELSWORTH S. SMITH, St. Louis: The condition may be recognized through the presence of chronic ascites not explainable in other ways, and physical signs of fixation of heart dulness, diastolic shock, retraction of interspaces about the apex and below the angle of the left scapula, and through fluoroscopic examination. Up to June, 1913, Sommers had collected data on only thirty-eight cases performed abroad

and none in this country, and since that date we have found only one in this country, so that the two cases here reported are the fourth and fifth cases recorded in this country. Among these forty-five reported cases there had been only nine failures, in four of which necropsies revealed errors in diagnosis.

The Actual Cautery in the Treatment of Superficial Cancers

DR. CHARLES F. SHERWIN, St. Louis: The only cure for cancer is a total destruction of all its pathologic cells. Any such cells not quickly destroyed by treatment gradually become more resistant and are often stimulated into increased rapidity of growth. Good cosmetic results are desirable, it is true, but quick and certain destruction of all tumor cells is absolutely imperative regardless of any cosmetic result, for cancer let alone or left behind will surely kill. In those types of superficial cancers variously known as rodent ulcers, and epidermoid or basal-cell carcinomas, which tend to remain localized, total extirpation of the affected area together with a strip of normal skin and underlying tissues afford the best possible chance of complete cure. This can be accomplished by clean excision with a scalpel; but if it accidentally cuts into cancer, it will scatter and implant it along any further line of the incision. The electric cautery loop at a dull red heat cannot thus transplant cells, but cuts skin readily, does not char, yet destroys cells 2 or 3 mm. beyond the incision line; controls practically all hemorrhage at once; blocks lymphatics; readily permits gross differentiation of normal and pathologic tissue; obtains the entire lesion at once for microscopic diagnosis, and, with properly regulated heat, is capable of exceedingly fine dissection about tendon sheaths, eyelids, etc. Local anesthesia makes the procedure painless; the postoperative pain is negligible unless bone is involved; the area granulates readily; the scar is often either unnoticeable or a slight smooth depression, or in extensive areas contracts into a raised line. The final result is limited only by the judgment of the operator as to the boundaries of the lesion, a factor likewise necessarily present in any form of treatment. We do not advocate cautery excision in squamous cell cancers in which adjacent lymphatics and glands early become involved, as lower lip, breast and similar types. Soldering irons at dull red heat or less are ideal for large lesions, or for temporary cleaning up of foul, ulcerated, incurable cases. Cauterizing bone is often necessary in far advanced cases, but causes considerably more pain, and is very slow to discharge the sequestrum and heal. Caustics act largely on the surface, are never subject to such accurate control as to depth and boundaries, cause great pain, more often stimulate the tumor to rapid growth, and usually cause an unsightly scar. Radium is often as painful as the cautery wound, never removes the cancer bearing area, requires weeks or months to effect the complete retrogression, occasionally stimulates more rapid growth, and often after apparent cure, nodules recur in the scar. However, it usually conserves adjacent tissues, and its cosmetic results are often equal to or occasionally better than the cautery scars.

Operative Treatment of Carcinoma of the Tongue

DR. V. P. BLAIR, St. Louis: The majority of carcinomas of the tongue are probably mildly malignant, the unsatisfactory results and the high mortality rate being due to late and inefficient operation. Some cases are highly malignant from the onset. Surgical intervention should be undertaken early, with complete elimination of all conditions which suggest the possibility of cancer. These operations may be only a wide local excision, but can be made as radical as can an operation on the breast. The preoperative and postoperative treatment of these patients is of the utmost importance. Careful attention to the details of these will permit of more extensive operations. Roentgen-ray and radium treatments of sufficient activity are helpful adjuvants to surgery.

Summer Diarrhea of Infants: A Study of the Pus Cells in the Stools

DR. JOHN ZAHORSKY, St. Louis: It has been found that the majority of cases of summer diarrhea show a great

increase in the cellular content of the stool. Our study indicates that most of the diarrheal diseases of summer are infectious processes. Adults are a common source of the virus that produces diarrhea. The method of conveyance is by contact, insects and, more frequently, by milk and ice cream.

Feeding of Athreptic Infants

DR. MAURICE J. LONSWAY, St. Louis: In athrepsia or marasmus it is necessary to give in large amount food which contains the elements necessary to nutrition and which does not cause gastro-intestinal disturbances. Whole lactic acid milk with the addition of glucose, dextrin and maltose, in the form of corn syrup as advocated by Marriott, meets these requirements. High percentages of carbohydrate can be given. It is not necessary usually to remove the fat. These babies begin to gain as soon as the caloric intake is sufficient. This is sometimes 200 or more calories per kilogram.

Interpretation of Bacteriologic Evidence in Influenza and Infections of Unknown Origin

DR. R. A. KINSELLA, St. Louis: The variety of reports published on the bacteriology of epidemic influenza leads to doubt as to the validity of our usual methods of investigating causes of infection. Furthermore, we are disturbed by the reflection that perhaps many of the bacteriologic reports bearing on the cause of infectious processes are fallacious. Obviously, there is need of adopting a central fundamental principle about which our studies can revolve. Such a principle is offered in the consideration that native bacteria, being both adaptable and adapted to their surroundings, do not cause epidemics. Conversely, the bacteria that cause epidemics cannot be those that are common inhabitants of human bodies, but must be unadapted and unadaptable invaders. This principle is effectively illustrated by contrasting adapted and unadapted members of the same group: namely, colon bacilli with typhoid bacilli; Group IV pneumococci with Group I pneumococci; diphtheroid bacilli with diphtheria bacilli, and green streptococci with hemolytic streptococci. Following such a principle, we shall not be misled into ascribing the etiology of influenza to such common varieties as green streptococci and the Pfeiffer bacillus. An analogous situation exists in the study of the so-called streptococcus infections. There is no doubt about the virulence of the hemolytic variety, or about its contagiousness. But we cannot intelligently attach etiologic importance to such ever-present, adapted bacteria as the green streptococci, when considering highly individualized disease processes. Such bacteria as green streptococci and Pfeiffer bacilli depend for their invading activities on a profound local lowering of resistance.

A Plea for a State General Hospital Articulated with County General and Other Hospitals, and the Completion of Medical Education in the University of Missouri

DR. FRANK G. NIFONG, Columbia: Modern medicine and the hospital idea in medical service are inseparable. Hospital and health service is one of the functions of the state for the promotion of the general welfare and it is also the business of the local communities and counties. This matter is not second in importance to education. The county general hospital is a crying need for our more populous counties, no less needed than in our cities. The obligation of the state to give its citizens higher and technical education is a well established principle. The general welfare can be promoted in no better way than by furnishing the best possible medical education to its citizens. We need a great medical center in Missouri University both for undergraduate and for graduate work. The medical department of the university should cooperate with the state board of health in all its activities. To accomplish the various purposes, the state medical department must have adequate clinics and hospitals. A state general hospital articulated with various county and other standardized hospitals would furnish exceptional and unique clinical facilities. This would bring all the people and profession of the state into intimate touch with all health matters and health service.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

March 1, 1920, 51, No. 2

- Blood Volume Studies. I. Experimental Control of a Dye Blood Volume Method.** C. W. Hooper, H. P. Smith, A. E. Belt, and G. H. Whipple, Berkeley, Calif.—p. 205.
- Blood Volume Studies. II. Repeated Determination of Blood Volume at Short Intervals by Means of the Dye Method.** H. P. Smith, San Francisco.—p. 221.
- Blood Volume Studies. III. Behavior of Large Series of Dyes Introduced into the Circulating Blood.** A. B. Dawson, H. M. Evans, and G. H. Whipple, Berkeley, Calif.—p. 232.
- Blood Volume Studies. IV. Blood Volume as Determined by Change in Refractivity of Serum Nonprotein Fraction After Injection of Certain Colloids into the Circulation.** I. McQuarrie and N. C. Davis, San Francisco.—p. 257.
- Influence of Splenic Extract on Number of Corpuscles in Circulating Blood.** A. W. Downs and N. B. Eddy, Montreal.—p. 279.
- Physiologic Changes Produced by Variations in Lung Distention. Efficiency of Pulmonary Circulation in Overcoming Obstruction.** F. P. Chillingworth and R. Hopkins, New Orleans.—p. 289.
- Experiments on Pathologic Physiology of Acute Phosgen Poisoning.** W. J. Meek and J. A. Eyster, Madison, Wis.—p. 303.
- What Extent are the Physiologic Effects of Carbon Dioxid Due to Hydrogen Ions?** M. H. Jacobs, Philadelphia.—p. 321.
- Gastric Response to Foods. Response of Normal Human Stomach to Vegetables Prepared in Different Ways.** R. J. Miller, H. L. Fowler, Olaf Bergeim, M. E. Reh fuss and Philip B. Hawk, Philadelphia.—p. 332.
- Relation of Suprenals to Certain Experimental Hyperglycemias (Ether and Asphyxia).** G. N. Stewart and J. M. Rogoff, Cleveland.—p. 366.
- Experimental Production of Edema as Related to Protein Deficiency.** E. A. Kohman, Chicago.—p. 378.

Dye Blood Volume Method.—A method is outlined by Smith in which the dye blood volume method is adapted to repeated determinations on the same animal at short intervals. The soundness of the method is demonstrated by controls done in vitro as well as repeated determinations performed in rapid succession on the same animal. The experimental error does not exceed 5 per cent. Fluctuations in blood volume greater than this are sometimes seen over long periods of time. These fluctuations arise from physiologic factors, the exact nature of which is not yet understood. The dye used is brilliant vital red.

Blood Volume Determinations After Injection of Certain Colloids into Circulation.—McQuarrie and Davis outline a method of determining blood volume which consists essentially in reading refractometrically the serum nonprotein increase after the intravenous injection of a known amount of acacia or gelatin solution, or a mixture of the two. By this method they have found in the dog an average of 9.76 c.c. blood per hundred grams body weight. In the rabbit an average of determinations using samples removed five minutes after injection of medium gives a volume of 6.49 c.c. per hundred grams body weight. Of great importance is the fact that hemolysis, lipemia and cholemia do not affect the accuracy of determinations by this method.

Influence of Splenic Extract on Number of Corpuscles in Circulating Blood.—Downs and Eddy found that the subcutaneous injection of protein-free splenic extract is followed immediately by a decrease in the number of erythrocytes in the circulating blood. The decrease is temporary. The decrease is probably the result of a direct hemolytic action of the splenic agent. The decrease is frequently accompanied by a very transient increase in the number of white corpuscles.

Pathologic Physiology of Acute Phosgen Poisoning.—A study was made by Meek and Eyster of the pathologic physiology of acute phosgen poisoning. The microscope and the roentgen ray both show an early injury to the linings of the deep respiratory passages. Irritation from this results in a certain amount of reflex cardiac inhibition and vasoconstriction. Coincident with these changes there is a direct action of the gas on the red blood cells, which causes them to agglomerate and obstruct the pulmonary capillaries. The removal of red blood cells from the active circulation

in this way results in a decreased hemoglobin percentage. The plugging of the capillaries throws a strain on the right heart and a right-sided cardiac dilatation is apparent. These are the chief characteristics of Stage 1. Even during Stage 1 the injury to the alveolar membranes and the increased pressure have initiated the transfusion of fluid from the blood into the tissue spaces and later into the air passages of the lungs. The rapid development of this edema is the chief characteristic of Stage 2. It results in hemoglobin concentration, reduction in blood volume and decrease in heart size, all three of which proceed to extreme degrees. Death ultimately results from decreased oxygenation of the pulmonary blood and from oxygen starvation of the tissues due to decreased blood volume, the latter, as Underhill states, being probably the more important.

Response of Normal Human Stomach to Vegetables Prepared in Different Ways.—A study was made by the authors of the response of the normal human stomach to thirty different kinds of vegetables prepared in different ways. The evacuation times and acid responses of the stomach were determined and physical and chemical changes in the ingested food noted. In general, raw vegetables low in protein, such as carrots, celery, tomatoes, cabbage, lettuce and cucumbers, leave the stomach rapidly, develop moderately high free acidities but little combined acidity and leave the stomach without great change. Boiled vegetables show much more rapid and complete disintegration. Vegetables high in starch, such as potatoes, show very considerable starch digestion before leaving the stomach. In certain cases hardly any starch reaction could be obtained toward the end of digestion.

Experimental Production of Edema as Related to Protein Deficiency.—The findings obtained by Kohman from experimental study she believes warrant the general conclusion that if it is necessary to limit the amount of protein in a diseased condition or in a period of national economic stress (as was necessary in some of the European countries during the recent war), it is advisable to administer the low protein diet in a form free from excess of water and any acid producing foods. Symptoms of developing edema must be looked for and adequate protein supplied immediately to effect a cure.

American Review of Tuberculosis, Baltimore

March, 1920, 4, No. 1

- Tuberculosis Problems of To-day: Doctrines, Conditions and Needs.** D. A. Stewart, Ninette, Manitoba.—p. 1.
- Tuberculosis Problem in San Francisco.** G. H. Evans, San Francisco.—p. 12.
- Prevention of Tuberculosis: What We Should Teach To-day.** W. J. Dobbie, Weston, Ontario.—p. 23.
- Experiment in Sanitary Education.** H. R. M. Landis, Philadelphia.—p. 32.

Boston Medical and Surgical Journal

April 8, 1920, 182, No. 15

- Medical Aspect of Dental Irritation.** W. A. Lurie, New Orleans.—p. 359.
- Ileostomy for Postoperative Obstruction Following Appendectomy.** E. P. Richardson, Boston.—p. 362.
- Surgical Treatment of Acute Empyema by Valve Drainage. Provided by Flap of Skin, Fascia, and Muscle, under Local and Paravertebral Anesthesia.** W. R. Morrison, Boston.—p. 366.
- Chest Conditions Resulting from War Wounds and Their Surgical Treatment.** B. H. Alton, Worcester, Mass.—p. 369.
- Severe Case of Gas Bacillus Infection with Recovery.** D. S. Adams, Worcester.—p. 373.

Treatment of Intestinal Obstruction.—In the consideration of the treatment of obstruction, Richardson says a distinction should be made between obstruction occurring shortly after operation and obstruction occurring from spontaneous causes, or long enough after operation for adhesions to cicatrize. The place of enterostomy is distinctly different in these two classes of cases. In the first class, its place as an evil occasionally necessary is clear. In the second class, obstruction by recent adhesions, it may be both palliative and curative. Good results depend on operation being undertaken early, and it is far better to operate on an occasional case unnecessarily than to postpone operation until the latter stages of obstruction have developed.

Gas Bacillus Infection and Recovery.—A patient who received a gunshot wound of the leg developed gas gangrene

extending up to his perineum and groin within thirty-six hours. It was rapid in its advance, and yet was controlled by amputation through, and not above, the active process. The case appeared hopeless, but to give the man the benefit of the doubt, Adams performed a guillotine amputation about mid-thigh, with preservation of skin flaps. Dichloramine-T dressings were applied to the raw surface. During the operation 800 c.c. of fresh blood was given, followed by 1,500 c.c. of physiologic sodium chlorid solution containing 2 per cent. sodium bicarbonate. The result was excellent.

Medical Record, New York

April 10, 1920, 97, No. 15

- Study of Certain Bands in Right Upper Abdominal Quadrant. W. S. Bainbridge, New York.—p. 593.
Observations After Severe Gunshot Fractures of Long Bones. C. W. Perkins, New York.—p. 598.
Case of Bilocular Uterus with Carcinoma in Left Horn. O. C. Melson, Rochester, Minn.—p. 604.
*Differential Diagnosis Between Pains of Tabes Dorsalis and Those of Focal Infection. A. M. Crance, Bay City, Mich.—p. 606.
Mon-Arsone in Treatment of Syphilis. B. L. Wright and L. A. Kennell, U. S. Navy, and L. M. Hussey.—p. 607.
Cases of Sudden Canities in History. C. G. Cumston, Geneva, Switzerland.—p. 609.
Bronchial Asthma. E. Zugsmith, Pittsburgh.—p. 611.

Differential Diagnosis Between Tabes and Focal Infection.—Crance cites a case diagnosed as tabes, the patient being treated unsuccessfully for syphilis, in which complete relief from symptoms followed the extraction of abscessed teeth. All the physical signs were suggestive of tabes, but intense antisyphilitic treatment for nine years failed to give relief to the patient. Wassermann tests had always been negative, but the lightning pains were typical. Romberg's sign was slightly positive and there was a suggestion of an ataxic gait. Three weeks after the extraction of all abscessed teeth, the patient was completely relieved of all his symptoms, nor had any of them returned within two months, when he was last seen.

New York Medical Journal

April 3, 1920, 111, No. 14

- *Study of Effects of Alcohol from a New Angle. C. S. Potts, Philadelphia.—p. 573.
*Alcohol a Nerve Stimulator. W. H. Porter, New York.—p. 579.
Chemical Aspects of Wood Alcohol Problem. C. Baskerville, New York.—p. 580.
Lesions in Wood Alcohol Poisoning. C. Norris, New York.—p. 583.
Wood Alcohol and the Eyes. C. W. Cutler, New York.—p. 585.
Wood Alcohol Poisoning. A. Comora, New York.—p. 588.
Narcotic Drugs and State Legislation. A. D. Greenfield, New York.—p. 588.
Management of Empyema. A. McGlannan, Baltimore.—p. 590.

Effects of Alcohol.—While not attempting to say anything good of the use of alcohol as a beverage, Potts endeavors to show that statements of its bad effects on the human race are exaggerated. He also protests against allowing hysteria, hypocrisy and cowardice to influence the settlement of medical questions. It has long seemed to him that if alcohol was nearly as potent a factor in causing mental and physical deterioration as is claimed by many, by this time the world should be peopled almost entirely with physical and mental weaklings. Therefore, the world, instead of progressing as it has, should have gone backward, and the average length of life should be much less in spite of the increase in knowledge and skill in the treatment of disease. Potts believes that most of the indictments of alcohol are based on the results of laboratory work and the study of statistics, and that such evidence is often fallacious and not consistent with actual experience. Potts gives biblical, historical and biographic references to prove his point that alcohol does not cause mental and physical deterioration. Speaking on the effects of alcohol in those who do not use it and do not wish any one else to do so, Potts claims that many such are undoubtedly mentally peculiar. They exhibit a form of bolshevism in that they want to rule or ruin. They alone are right. In furtherance of their views they believe in false statement, vilification, and slander of those who do not agree with them. They refuse to believe conclusive evidence (which according to an old definition means insanity). They advocate confiscation and destruction of legally owned property,

illegal exercise of police power, and they tempt people to do the things they protest against, so that they can show how wicked the world is. Potts is of the opinion that this incoherent exhibition of superiority deliberately shown by the extreme section is based on a form of egoism; it is a consequence of a psychologic self-gratulation and self-esteem which borders on an obsession and is regarded by some authorities as pathologic. The burthen of Potts' paper is summarized as follows: That alcohol is not necessarily deterrent to good work and to the attainment of greatness; that the world is not going backward in spite of its long continued use of alcohol, and so far as its use is concerned is in no danger of doing so; that every one who uses alcoholic beverages is not per se a drunkard and unable to do his share of the world's work. Potts does not dispute that alcohol may be a cause of harm, both from the medical and social point of view, but it also, from the former point of view, may be an agent for good. He believes that legislation influencing my perversion of facts, hysteria, hypocrisy and cowardice is of more danger to the country than alcohol. There never was a time when common sense was more needed and never a time when it was less prevalent.

Alcohol a Nerve Stimulator.—Clinical observation has convinced Porter that many lives have been saved by the proper use of alcohol. He considered it to be a great mistake to drop so valuable an agent from the pharmacopeia—an agent whose action is so definitely known.

Porto Rico Medical Association Bulletin, San Juan

March, 1920, 14, No. 125

- *Rapid Staining Technic for Malaria Plasmodium. P. Gutiérrez Igarravidez.—p. 1.
*Garlic as Condiment and Drug. F. del Valle Atilas.—p. 5.
Precautions with Roentgen-Ray Work. J. Barreiro Lago.—p. 10.

Staining Technic for Malaria Plasmodium.—Gutiérrez describes experiences with the different staining methods in vogue to decide which method is the most practicable and reliable. His final conclusion is in favor of the Tiedman technic, slightly modified. A 1 per cent. solution of methylene blue in methyl alcohol is made, and a similar solution of eosin, and these are kept in dark colored vials. When ready to use, 10 gm. of each solution and 10 gm. of methyl alcohol are mixed, and 10 or 15 drops of the reagent mixture are poured on the smear of blood dried in the air. Then 20 or 30 drops of neutral, filtered water are added immediately, and the slide is tilted to insure the complete blending of the stain and the water. In one and one-half minutes—counting from the moment the stain had been dropped on the specimen—the preparation is rinsed rapidly with water and dried with blotting paper, when it is ready for examination under the microscope. The water used does not have to be distilled water but it must be neutral; he prefers rain water for the purpose. Filtered water from any source can be used, provided that it is neutral. He tests for this by adding a small amount of pulverized hematoxylin to a test tube containing 100 c.c. of the water and agitating gently. If the water turns yellow, this shows acidity, while a deep violet tint indicates that it is alkaline. A light violet tint indicates that the water is neutral and suitable to use. By adding a few drops of a 1 per cent. solution of sodium bicarbonate to the water and then a little more hematoxylin comparing the tint with a control tube, the neutral reaction can soon be realized. This staining technic shows up all the forms of the plasmodium of malaria and other parasites of the blood, and it is excellent also for the differential leukocyte count. In conclusion he emphasizes that with this simple and reliable technic any practitioner can examine blood specimens, himself, without expensive equipment or relying on a distant laboratory.

Garlic as a Drug.—Del Valle Atilas discusses the therapeutic effects of garlic as reported in the literature, and urges further study in this line as tradition has long credited *Allium sativa* with medicinal virtues. The records of comparatively recent years show that garlic has been advocated in whooping cough in adults, in tuberculosis, in infantile diarrhea, in typhoid, in treating wasp stings, as a stimulant of secretions and as a vermicide, diuretic, anticatarrhal, etc.

Surgery, Gynecology and Obstetrics, Chicago

April, 1920. 30, No. 4

- *Localization or Elimination of Cerebral Tumors by Ventriculography. W. E. Dandy, Baltimore.—p. 329.
- *Experimental Study of Ureteral Ligation; Demonstration of Late Results to Ureter and Kidney. J. R. Caulk and R. F. Fischer, St. Louis.—p. 343.
- Abnormalities Resulting from Remains of Omphalomesenteric Duct. Report of Two Cases. M. Barron, Minneapolis.—p. 350.
- Gangrene of Ectopic Kidney from Twisted Pedicle. J. L. Ransohoff, Cincinnati.—p. 356.
- *Toxic Goiter Following Influenza. C. A. Roeder, Omaha.—p. 357.
- Diverticulum of Descending Colon Causing Hydronephrosis. G. F. Straub, Honolulu.—p. 359.
- *Narcosis Tremor and its Treatment. T. Rietz, Västervik, Sweden.—p. 361.
- Unreliability of Temperature in Otitis of Infants and Children as an Indication for Mastoid Operation. F. Whiting, New York.—p. 364.
- *Wassermann Reaction and Miscarriages. H. Goodman, New York.—p. 368.
- *Use of Potassium Mercuric Iodid for Skin Disinfection. W. F. McKenna and H. A. Fisher, Brooklyn.—p. 370.
- *Study of Arteries Supplying Stomach and Duodenum and Their Relation to Ulcer. T. B. Reeves, Rochester, Minn.—p. 374.
- Pneumoperitoneum. B. H. Orndoff, Chicago.—p. 386.
- Gas Cysts of Intestine: Report of Case. H. G. Sloan, Cleveland.—p. 389.
- Rhinophyma. M. G. Seelig, St. Louis.—p. 394.
- Abdominal Surgery in Casualty Clearing Station and Evacuation Hospital. W. M. Thompson, Chicago.—p. 398.
- *Utilization of Transposed Uterus for Cure of Extensive Vesicovaginal Fistula. Report of Case. C. E. Dowman, Atlanta.—p. 403.
- *Skin Grafting by Means of Freezing with Ethyl Chlorid. G. Torrance, Birmingham.—p. 405.
- Murphy Button Retained Four Years; Complicated by Ulcer at Site of Gastro-Enterostomy. A. F. Tyler, Omaha.—p. 406.
- Amputation Stump Retractor. P. W. Sweet, Rochester, Minn.—p. 407.
- Facility in Closure of the Paramedian Upper Abdominal Incision. C. A. Pannett, London, England.—p. 408.
- Enucleation of Eyeball and its Substitute Operations. J. E. Weeks, New York and Allen Greenwood, Boston.—p. 410.

Ventriculography.—Ventriculography has been done by Dandy in more than seventy-five cases. The majority of these patients had hydrocephalus: in many cases ventricular dilation was suspected and the injection of air made the diagnosis certain. In many others, the injection was made in order to determine whether the disease was progressive or stationary, in other words, as a means to determine whether or not operative treatment should be instituted. In many cases, Dandy says, the localization of the growth can easily be determined by signs and symptoms and in such instances he has at present no intention of instituting ventriculography, although he feels that eventually this method may be important in differentiating the type of tumor and determining the kind of operative treatment which is necessary. This possibility is strongly suggested by two of the cases described. Five cases are described, each representing entirely different findings and showing the range of usefulness of this procedure when tumors of the cerebral hemisphere are suspected. In all but one of these, the ventriculogram was the only means by which a positive localization could be made. One tumor occluded a lateral ventricle and dislocated both lateral ventricles. Another tumor altered the size and shape of one lateral ventricle. In a third case a cerebral tumor, though suspected, was eliminated by the hydrocephalus. In a fourth case a unilateral hydrocephalus was demonstrated.

Ureteral Ligation.—Faced with the difficulties of deligating a ureter, such as reopening an abdominal wound and searching for a small tie in a pelvis imbedded with plastic exudate, and the ureter incorporated with the uterine vessels, with the consequent danger of hemorrhage and the possibility of cutting the ureter with a resulting fistula—certainly a much more serious operation than a double nephrostomy—and with the same difficulty attending a ureterovesical anastomosis (with the exception of hemorrhage), Caulk and Fischer are of the firm belief that the safest method of protecting the individual is an immediate double or single nephrostomy. If a woman has undergone a pelvic operation complains of pain in the kidney, which is usually about the third day, and this kidney is found to be enlarged and palpable, not having been so beforehand, such symptoms are highly suggestive of ureteral ligation. If the patient's condition would warrant it, a ureterogram would clinch the diagnosis. It is then for the

surgeon to decide whether it is better for the patient to allow the kidney to die or to try to protect it. The danger of a unilateral nephrostomy should be extremely slight, as it can be done under local anesthesia and certainly quickly under gas.

Toxic Goiter.—Eight cases are cited by Roeder. Of these, three had adenomas which suddenly became very toxic. Five cases of hyperthyroidism had their onset definitely following influenza.

Narcotic Tremor.—Thirty-three cases of narcosis tremor have been studied by Rietz. With two exceptions only, the patients were men. Most of the patients were between the ages of 25 and 40. Neither the hospital records nor the objective examination of the patient has afforded any exact means of determining the factors which may possibly be considered as favoring the appearance of the spasms. Neither the technic used in administering the anesthetic nor the anesthetic seem to make any difference nor does the position of the head, etc. The part of the body on which the operation was performed was irrelevant to the appearance of the tremor. On the hypothesis that narcosis tremor is the result of an abnormal irritation of the brain produced by the anesthetic which is conducted thither by the blood, Rietz has endeavored to overcome this phenomenon. To eliminate, at least for a moment, the influence of the irritated motor centers, during an operation on a boy, aged 16, he pressed, for a few seconds, on the neck in the fossa carotica. The result was evident at once; the narcosis tremor disappeared as by magic. It appeared again, however, when the pressure was removed. Renewed experiments had precisely the same effect. When pressure was again applied for a somewhat longer period (about one-quarter minute), the spasms ceased definitely. Although on some occasions the maneuver had doubtful results or none at all, continued observations still showed that the measure was of value. In the thirty-three cases mentioned the measure was used twenty-nine times; four patients had short spasms which ceased of themselves and did not call for treatment. The other twenty-nine cases fall into three groups as follows: In Group 1, the effect was certain in nineteen cases; in Group 2, the effect was uncertain in five cases; in Group 3 the effect was nil in five cases. In no way does the result vary so far as the degree of unconsciousness is concerned nor does the result bear any relation to the duration of the narcosis. It is easier to apply pressure in this region if one stands at one side of the patient and turns his head over toward the other side. The pressure is applied either with the thumb or the four fingers together.

Wassermann Reaction and Miscarriages.—Goodman found that among 1,320 pregnant women, 87 per cent. were Wassermann negative. Only 6.7 per cent. gave a 4 plus positive reaction, and in 2 per cent. more of the cases, the Wassermann was 3 plus positive. Of the Wassermann negative multiparas, 37 per cent. had suffered one or more miscarriages as compared to 52 per cent. of the 4 plus positive cases. Only one woman among the 1,320 gave a history of having been known to be infected with syphilis, although approximately one woman out of each eleven gave a strongly positive Wassermann reaction, indicating in all probability a syphilitic infection.

Potassium Mercuric Iodid Skin Disinfection.—The results obtained by McKenna and Fisher in their experimental work show conclusively that solutions of potassium mercuric iodid or tincture of iodine in dilutions free from any harmful action, are efficacious in killing bacteria on and in the skin, and, therefore, must be considered as having a definite value in lessening the possibilities of bacterial infection in surgical operations as well as in the treatment of traumatic wounds. These experiments also show that potassium mercuric iodid, in a concentration of 1:100 in acetone, or in 70 per cent. alcoholic solution is more efficient for this purpose than is the official tincture of iodine. The greater penetration of the potassium mercuric iodid in acetone and the more rapid evaporation of this solvent make this solution the most desirable one for use. Furthermore, solutions of this double iodid do not stain, and produce no irritation or blistering of the

skin. In these respects, therefore, potassium mercuric iodid, in a strength of 1 per cent. in 70 per cent. alcohol—or better, in acetone—is preferable to iodine for disinfecting the skin.

Relation Between Ulcer and Arterial Supply of Stomach.

—The investigation reported on by Reeves shows that the anatomic arrangements of the arteries along the lesser curvature of the stomach and throughout the first inch of the duodenum are such that the arteries are predisposed to thrombosis. The plexus of vessels in the submucosa on the lesser curvature is made up of much smaller and longer arteries without as free anastomoses as in other regions of the stomach. The branches from this plexus run a very tortuous course to enter the mucosa. The resistance offered the blood stream is constantly greater and, as a result, the blood current is slower as it enters the small arteries of the mucosa. The submucous plexus of arteries in the first inch of the duodenum is made up of relatively few vessels in comparison with other parts of the duodenum. They are small and do not anastomose freely; they give off branches to the mucosa some of which simulate the gastric type of spiral artery. The rather limited blood supply and the gastric type of artery predispose to thrombosis. Since the vessels are more liable to be occluded by emboli, it is reasonable to suppose that they are an important factor in the production of ulcer by hematogenous infections. Reeves submits the hypothesis that possibly slight deviation from the normal may contribute to peptic ulcer.

Transplanting Uterus in Vesicovaginal Fistula.—In the case reported by Dowman a most extensive vesico-utero-vaginal fistula resulted from the pressure of the child's head. She had been attended by a midwife who had allowed her to remain in labor for six days. A physician was then called and removed a dead child by means of forceps. Following this delivery the patient had a constant dripping of urine from the vagina, and no longer voided in the normal way. On examination, Dowman found complete destruction of almost the entire posterior wall of the bladder. This defect was filled in by making use of the uterus. The uterus was freed from all its attachments and was then placed in an extreme anteverted position so that the posterior wall of the fundus could be utilized as the posterior wall of the reconstructed bladder. That part of the bladder wall which was thus accessible through the abdominal opening was sutured to the posterior surface of the uterus by means of chromic catgut sutures, in such a manner as to bring the mucous membrane of the bladder in contact with and approximated to the peritoneal covering of the uterus. The patient was last seen six years after the operation and seemed healthy in all respects. Her bladder had given her no further trouble.

Skin Grafting with Aid of Ethyl Chlorid.—In the method used by Torrance, the thigh is shaved and cleaned with ether and alcohol; and an area on the top of the thigh about the size of a silver dollar is frozen and is cut out with a sharp razor just within the frozen area going well down into the fatty layer. The grafts are applied immediately to the granulation surface and when they become "thawed out" they will be found to be firmly glued to the granulation surface. They very rarely show a tendency to separate if the granulations are in good condition when the grafts are applied and if care is taken not to rub them off. A dry dressing is applied and is changed every day if there is any discharge from the surrounding granulations.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 6, 1920, 1, No. 3088

*Dyspeptic and Other Referred Symptoms Associated with Disease of Gallbladder and Appendix. H. Rolleston.—p. 317.

*Tumors Complicating Pregnancy, Labor, and Puerperium: Cancer of Uterus. H. R. Spencer.—p. 320.

Therapeutic Value of Oxygen in Pulmonary Lesions. J. C. Meakins.—p. 324.

*Cutaneous Manifestations in Case of Branchial Fistula. A. Eddowes.—p. 326.

Referred Symptoms in Disease of Gallbladder and Appendix.—The question how morbid changes in the gallbladder and appendix induce symptoms in other viscera and distant parts is gone into to some length by Rolleston, although nothing new is brought forward. The various mechanisms that may be at work in different cases are tabulated as (1) reflex, (2) mechanical, (3) toxic and (4) infective. Reflex: Irritation in the appendix or gallbladder may cause hypertonus of the stomach and spasm of, or failure to relax on the part of, the pyloric or ileocecal sphincter, leading to gastric or ileal stasis and so to excess of acid or to toxemia. Very often the appendix when removed shows little macroscopic change to correspond with the prominent symptoms that then disappear; microscopic examination may be necessary to reveal the evidence of past inflammation in its walls, especially fibrosis in the submucous coat, and often the changes are very slight. Mechanical: Pericholecystitic adhesions may embarrass the movements of the stomach, interfere with the passage of food through the pylorus, or even lead to an hour-glass stomach. Though often the legacy left by cholecystitis, these adhesions may be due to duodenal or gastric ulcer. Periappendicular adhesions may cause intestinal stasis and so toxemia, and the same result, only in a more marked degree, may be produced by an appendix adherent across the lower part of the ileum. Toxic: Absorption of bacterial toxins from the gallbladder or appendix may set up general toxemia, cause myocarditis, and damage the mucous membrane of the stomach and intestines, thus giving rise to hemorrhage. Infective: Micro-organisms from the appendix or gallbladder may infect the kidneys, especially the right. Infection of the gallbladder is prone to spread to the pancreas, and local thrombophlebitis of branches of the iliac veins, secondary to appendicitis, may give rise to small pulmonary emboli and pleurisy; malignant endocarditis has been found to be associated with gallbladder infection and with appendicitis. The differential diagnosis of appendix and gallbladder dyspepsia from gastric and duodenal ulcer presents considerable difficulties, but roentgen-ray bismuth or barium meal may give valuable assistance in differentiation. Other conditions mentioned as being caused by disease of the gallbladder and appendix are: chronic colitis; glycosuria and diabetes; cardiac symptoms; pyelitis and pyelonephritis; synovitis and arthritis.

Cancer of Uterus and Pregnancy.—Figures quoted by Spencer indicate that in the child-bearing period of life cancer not combined with pregnancy is at its maximum in patients over 40, but when combined with pregnancy, under 40; and that below 30 the frequency of cancer is six times as great in the pregnant as in the nonpregnant. Spencer's youngest patient was 26 years of age. He has had ten cases in all. Three patients are alive twenty-five, twenty-two and nineteen years after operation, respectively. Each one of the ten patients was a multipara.

Skin Symptoms in Branchial Fistula.—Falling of the hair of the scalp and eyebrows, some loss of eyelashes, skin dry and rather scaly were the cutaneous symptoms in Eddowes' case of branchial fistula. The patient's grandmother had a similar condition.

Edinburgh Medical Journal

March, 1920, 24, No. 3

*Treatment of Fracture of Mandible. W. Guy.—p. 138.

Transfusion of Blood for Hemorrhage. J. M. Graham.—p. 142.

Artificial Rotation of Head in Persistent Occipito-Posterior Positions. J. L. Lackie.—p. 168.

Tuberculosis in One Division of English Navy. C. J. Campbell.—p. 173.

Case of Diffuse Hypertrophy of Breasts. B. S. Simpson.—p. 176.

Treatment of Fracture of Mandible.—Guy maintains that in the vast majority of cases of fractured mandible, immobilization is not only not necessary, but inadvisable, or even prejudicial to a successful issue. The aim of treatment should be reestablishment of function at the earliest possible moment. It is of importance that the fracture should at the termination of treatment be united; it is of still greater importance that the patient should have a lower jaw which is functional, which, in short, he can use. Immobilization in many instances defeats the attainment of this result.

Japan Medical World, Tokyo

Feb. 28, 1920, 10, No. 9

- Anthropometry of Civilized Man. Arthur MacDonald.—p. 185.
Action of Epinephrin and Hydrochloric Acid Against Tetanus Toxin.
R. Kobayashi.—p. 185.
Toxin and Antitoxin of Bacillus Influenzae. Y. Watanabe.—p. 186.

Lancet, London

March 20, 1920, 1, No. 5038

- Hunter, Gaskell and Evolution of Nervous System. W. L. Brown.
—p. 641.
Heat Hyperpyrexia. W. H. Willcox.—p. 648.
Syphilis at a Venereal Clinic. E. F. Skinner.—p. 650.
Later History of Four Cases of Total Laryngectomy for Malignant
Growths. C. Symonds.—p. 652.
Intravenous Injection of Tartar Emetic in Guinea-Worm Infections.
J. W. S. Macfie.—p. 654.
Case of Abnormal Descent of Testicle. J. A. C. Macewen.—p. 655.
Syphilitic Spondylitis: Negative Wassermann Reaction. S. C. Evans
and C. F. Marshall.—p. 656.

Heat Hyperpyrexia.—Cases of illness due to exposure to high atmospheric temperature are analyzed by Willcox. The clinical types were: (1) heat exhaustion (mild type); (2) gastric type; (3) choleraic or gastro-intestinal type; (4) heat hyperpyrexia (sunstroke). In types 1, 2 and 3 heat hyperpyrexia may suddenly develop unless great care be taken in the removal of patients from a hot atmosphere. Types 2, 3 and 4 are all dangerous, and in them the prognosis is grave. Of eighty severe cases of effects of heat, thirteen (16.2 per cent.) were of the gastric type, nine (11.2 per cent.) of the choleraic, and fifty-eight (72.5 per cent.) were hyperpyrexial. The onset was often quite sudden. Heat hyperpyrexia frequently occurred in the very hot weather in hospital patients suffering from another disease. In them the temperature would often suddenly rise to 110 F., coma and convulsions supervening. Frequency of micturition is a characteristic early symptom, and is sometimes associated with urethral pain. The temperature is somewhat raised, from 100 to 102 F. or so, and the skin is hot and dry. These preliminary symptoms usually last for a few hours, sometimes as long as forty-eight, after which mental excitement and delirium supervene and the temperature rapidly rises to about 110 F. Marked cardiac dilatation, often associated with a systolic murmur, occurs in the severe cases. On examining the urine, indican was found present in excess in all of six acute cases in which a special examination was made. Acetone and diacetic acid were found present in small amount in one out of eight acute cases specially tested. Albumin was detected in small amount in three out of eight acute cases. No casts were seen. Of nervous symptoms, restlessness and delirium occur with the onset of hyperpyrexia, and are quickly followed by stupor and coma, with incontinence of urine and feces. Muscular twitching and convulsions are very common with the high temperature. The knee-jerk is almost always absent in the pure heat-stroke cases during the acute stage. In severe cases the knee-jerk does not return for three or four weeks, in milder cases it returns earlier. The presence of knee-jerks is a valuable prognostic sign, for when they have returned there appears to be much less risk of a relapse, and the patient may then be evacuated with safety. Many of the severe cases after the hyperpyrexia has subsided show a pyrexia, the temperature remaining for several days about 102 or 103 F. For the gastric type of case removal to a cool atmosphere, sodium bicarbonate in frequent full doses by the mouth, and free purgation give the best results. The choleraic type of case is treated on similar lines to cholera. Heat hyperpyrexia demands treatment with sprays of ice-cold water and fans, quinin dihydrochlorid being given intravenously or intramuscularly if there is the slightest suspicion of malaria. Convulsions are treated by venesection, or morphin or chloroform inhalations.

Syphilis in Women.—Skinner presents his analysis of 354 cases of syphilis seen in the course of one year. A few observations are specially emphasized. For instance primary cases are still in a grave minority of admissions. Women do not seek advice in the primary stage, and steps should be taken to disseminate knowledge of the dangers of venereal disease and the advantages of the clinics amongst the female population. Continuity of treatment is essential for cure, and

discontinuity a possible danger. Only where treatment is commenced before the Wassermann reaction has become positive can a cure be definitely promised.

Results of Laryngectomy for Cancer.—Symonds' patients have lived in comfort and happiness, and done useful work for eight, twelve, fifteen and a half, and twenty-two years, respectively. One patient died of old age; here was the most extensive of all the operations.

Tartar Emetic in Guinea-Worm Infections.—Ten cases of guinea-worm infection in various stages were treated by Macfie at Accra by means of intravenous injections of tartar emetic. In five of the ten cases the whole guinea-worm was still in the body at the time when treatment was begun. In two, the sore healed under treatment and the worm did not come away; one of these patients was seen a month and one a week after the cessation of treatment, and appeared to be cured. In one, part of the worm was pulled out and broken off during treatment; this case, nevertheless, did well and was apparently cured. In one the sore closed temporarily, but reopened, and the worm was eventually wound out. One was lost sight of at an early stage. In five of the cases part of the guinea-worm had been pulled out and broken off before treatment was begun; all these cases showed signs of acute inflammation of the affected limb. The inflammation subsided and the guinea-worm sore healed in three of these cases, the portions of the worm which had not been pulled out remaining in the body but causing no inconvenience. One was complicated by the presence of a suppurating wound, so that the effect of treatment was not clear. And one was lost sight of at an early stage. In all but one of the cases treated intravenous injections of tartar emetic, even in the small doses given (3.5 to 9 grams), appeared to have a beneficial action. They appeared to relieve the inflammation caused by the breaking of the worm, to effect the healing of the sore without the previous removal of the worm, and to shorten the duration of the affection. In most of the cases it was impossible to continue the injections as long as had been intended, either because the patients had left Accra or because they themselves had concluded, perhaps prematurely, that they were cured and in no need of further treatment. In the cases which were longest under observation it appeared as if the antimony had killed the guinea-worm in the body and allowed it to be absorbed.

Syphilitic Spondylitis.—The case Evans and Marshall report resembles Fournier's in affecting the same vertebrae, but differs in the absence of cavitation of the vertebrae, abscess formation, and muscular atrophy. The process of new bone formation predominated over bony destruction. This is characteristic of most cases of syphilitic spondylitis and distinguished them from tuberculous disease. Noteworthy features of this case are the rarity of the lesion, its occurrence in spite of treatment, and the persistently negative Wassermann reaction, the first test being made when the vertebral lesions were in active development. This case would therefore appear to serve as a warning against placing too much reliance on the Wassermann reaction, both as regards diagnosis and prognosis.

Medical Journal of South Africa, Johannesburg

January, 1920, 15, No. 6

- Experimental Determination of Vertebrate Hosts of Some South
African Cercariae from the Mollusks *Physopsis Africana* and *Lim-
naea Natalensis*. A. Porter.—p. 128.
Injury to Eye by Contents of Golf Ball. R. C. J. Meyer.—p. 133.
Case of Purpura Hemorrhagica. J. J. Levin.—p. 135.

South Africa Medical Record, Cape Town

Feb. 28, 1920, 18, No. 4

- Some Impressions of Surgical Work in France. H. A. Moffat.—p. 63.
Some Cases of Encephalitis (Lethargic?). H. A. Loeser.—p. 66.
Surgical Treatment of Cancer of Uterine Cervix; Nineteen Cases.
R. Sharp.—p. 68.
Case of Rupture of Bladder. L. Gordon.—p. 72.
Case of Convulsions in a Child, Lasting 24 Hours and Terminating
Fatally. C. Sand.—p. 73.

Traumatic Rupture of Bladder.—An unusual feature in Gordon's case, one of traumatic intraperitoneal rupture of the bladder was the obtaining of urine in considerable quan-

tities after catheterizing the patient. The patient had been kicked on the lower abdomen. The house surgeon, suspecting an injury to the bladder, passed a catheter and obtained about 10 ounces of blood-stained urine. Eight hours later 16 ounces of urine were drawn off. The bladder was washed out with boric solution, the amount of solution returned being apparently the same in quantity as was injected. About thirty-six hours later Gordon saw the patient. He suspected an intraperitoneal rupture of the bladder, but as the chief sign in these cases, that with the inability to urinate no urine is obtained on catheterization, was absent, the diagnosis seemed unlikely; still, it was made, and it appeared probable there was a laceration involving the inner coats chiefly with a small leak setting up peritoneal irritation. On opening the abdomen, the peritoneal cavity was found to contain urine, and a large tear the size of a half-crown piece, circular and ragged in outline, was discovered on the posterior wall of the bladder, an inch above the trigone, immediately behind and in line with the urethra. The bladder contained no urine. The conclusion was that on each occasion the catheter had been passed, the point had passed through the rent in the bladder wall and had tapped the urine from the peritoneal cavity. The laceration was closed. The point which seems emphasized in this case is that the possibility of a rupture of the bladder when urine is returned in large quantities after a catheter is passed must not be ignored, and further, that the diagnostic method of injecting a measured quantity of fluid into the bladder and observing the quantity returned cannot always give helpful information.

Bulletin de l'Académie de Médecine, Paris

Feb. 10, 1920, 83, No. 6

- *Fever Whips Up the Kidneys. G. Etienne and R. Druesne.—p. 127.
*The Schick Diphtherin Reaction. J. Renault.—p. 130.
Is Ambidexterity Desirable? F. Regnault.—p. 132.

Kidney Functioning During Fever.—Etienne and Druesne found an unusually low ureosecretory index by the Ambard formula in 43 febrile patients with pneumonia, typhoid, acute rheumatism, tuberculosis or other disease. The output of urine was satisfactory and the kidneys were presumably normal in all but 5. The Ambard constant was within normal range only in 6, but in the 5 with diseased kidneys, the constant was much above the normal. With sound kidneys, the urea content of the blood was normal. These and other findings testify that the fever whips up the kidneys to extra functioning, just as it whips up the heart and the lungs to a more rapid rate. The acceleration of the heart beat drives the blood faster through the kidneys, and they eliminate waste faster and more thoroughly as long as they are adequate to the task. When they fail, or when the kidneys become too congested to keep up the work, then the Ambard constant runs up. Their figures show that the fever may whip up the kidneys to accomplish 200 per cent. of their former work.

The Schick Diphtherin Reaction.—Renault reports application of the Schick test to 281 children during a recent epidemic of diphtheria. None of those giving a negative reaction contracted the disease. Those with a positive reaction did not always develop the disease, even when diphtheria bacilli were found in the throat. The Schick test does not preclude the search for carriers, as children in both the positive and negative groups may be carriers.

Bulletin Médical, Paris

Feb. 28, 1920, 34, No. 12

- *Confusional Mental States: The Toxic-Infectious. A. Delmas and H. Beaudouin.—p. 189; The Post-Traumatic. P. Juquelier.—p. 193; Accompanying Psychoses, Neuroses and Organic Nervous Disease. L. Marchand and A. Barbé.—p. 197; Treatment. J. Roubinovitch and R. Dupouy.—p. 201.

March 6, 1920, 34, No. 13

- The Humoral Reactions with Vaccination and Their Connection with Allergy. P. Gastinel.—p. 219.

Confusional Mental States.—This entire issue of the *Bulletin* is devoted to this subject. The first article describes the toxic-infectious types. Headache is the capital symptom; insomnia, tremor, contractures, digestive and urinary dis-

turbance and low blood pressure are also suggestive. Juquelier discusses posttraumatic mental confusion. Usually it entails gaps in the memory and grooves in the nails showing the nutritional upset. Marchand and Barbé discuss confusional states in relation to psychoses, neuroses and organic disease of the nervous system. Roubinovitch and Dupouy review the field of treatment with special regard to the general and the general condition, and organotherapy as indicated. Experiments on cats have demonstrated the gravity of thyroid insufficiency in gravid animals, and this is confirmed by the benefit from thyroid treatment in pregnancy disturbances. It may be useful also as preliminary to ovarian treatment at the menopause, at puberty and during lactation. Symptomatic measures alone are not enough; the cause of the confusional condition must be discovered, and during convalescence psychotherapy is indispensable to aid in restoring mental balance.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 30, 1920, 44, No. 4

- Myoclonic Epidemic Encephalitis. Sicard and Kudelski.—p. 1.
Idem with Paresis.—p. 123.
*Ascending Myoclonus. P. Carnot and C. Gardin.—p. 125.
*Paget's Disease of Bone. De Massary and Lechelle.—p. 134.
*Congenital Cyanosis. Variot and Bouquier.—p. 137.
*Rupture of Abdominal Aorta. E. Duhot and others.—p. 143.
*Herpes Zoster of the Ear. A. Souques.—p. 146.
Typhoid Meningitis. G. Laroche and Peju.—p. 150.
*Polyglandular Syndrome with Tardy Epilepsy. G. Etienne and Richard.—p. 154.
Primary Tricuspid Endocarditis. Rémond and Minvielle.—p. 158.
Amyotrophy with Abnormal Course. A. Rémond.—p. 159.

Ascending Myoclonia.—Carnot and Gardin found lesions in the nerve cells of the cortex and medulla and thrombosis of the veins in the meninges at necropsy of a young man who died the seventeenth day after the onset of ascending paramyoclonus. It started in the legs and spread up to the abdomen, arms and face, with fever and delirium. They also report a case of acute chorea in a young woman, five months pregnant, with a purpuric eruption and slight fever, with death in less than a week. They do not know how to classify these two cases, but incline to label them influenza. Oettinger recalled that during the 1889-1890 epidemic of influenza, Leyden and Guttmann reported some cases with narcolepsy (*schlafsucht*) with a fatal outcome in some of the cases. In the discussion that followed, Sainton recalled Dubini's description in 1846 of what he called electric chorea. The description fits some of these cases of epidemic encephalitis. The jerking of the muscles, he said, is like that from an electric current, and it may be accompanied with paralysis or atony of the muscles innervated by the radialis. In Dubini's description of his thirty-six cases of epidemic electric chorea, there is no reference to any other forms characterized by somnolency.

Paget's Disease of the Bone.—The disease was restricted to one femur and developed at the age of 45.

Congenital Cyanosis.—Variot and Bouquier state that within a recent ten days four newly born infants with congenital cyanosis died when they were from 10 to 15 days old, and necropsy showed a widely patent arterial canal with congestion of the lungs and emphysema, as with death from asphyxia.

Spontaneous Rupture of Abdominal Aorta.—The rupture occurred in consequence of acute insufficiency of the kidneys in a syphilitic man of 32, after recovery from a long suppurating war wound compelling amputation.

Herpes Zoster of the Ear.—The herpes zoster involved the outer ear and front part of the tongue, and there were also facial paralysis and deafness—the whole forming what might be called the syndrome of the geniculate ganglion.

Polyglandular Syndrome with Tardy Epilepsy.—Etienne and Richard report a third case in which symptoms of endocrine insufficiency accompanied epilepsy developing after 20 or 30, and in which notable improvement was realized under thyroid plus ovarian treatment. The seizures stopped at once after this organotherapy was begun and pushed, although there were certain equivalents at each menstrual period for two or three months. The phenomena in the case confirmed

the assumption that the brain disturbance was of vascular origin, spasm of the arteries explaining the symptoms, and this could be traced to insufficient functioning of both the thyroid and ovaries.

Journal de Médecine de Bordeaux

March 10, 1920, 91, No. 5

- *Subarachnoid Meningeal Hemorrhage. P. Mauriac and E. Ferré.—p. 111.
Gas Phlegmon in Abdominal Wall Containing Needle Migrating from Intestine. R. Villar.—p. 114.
Anomalies of Arteries of the Kidney. G. Jeanneney and L. Massé.—p. 117.
Management of Watering Places. Cornet.—p. 120.

Subarachnoid Meningeal Hemorrhage.—In one of three cases described—all in young men—no cause for the sudden meningeal hemorrhage could be discovered, and after blood had been released by lumbar puncture, recovery was complete in two weeks. In the second case the hemorrhage followed the pulling of several teeth. The third case was diagnosed as uremia with convulsions, as the urine contained albumin. But lumbar puncture revealed the hemorrhage. Complete recovery followed in each case. The writers warn that too much fluid must not be released at one time by lumbar puncture, or the hemorrhage may be started anew.

Lyon Chirurgical

September-October, 1919, 16, No. 5

- *Volvulus of the Sigmoid Flexure. R. Ingebrigtsen.—p. 469.
*Traumatic Shock. J. Bosquette and P. Moulonguet.—p. 478.
*Recent Fractures of Neck of Femur. P. Santy.—p. 495.
*Pseudocoxalgia in Relation to Phimosis. J. Veyrassat.—p. 513.
*Intermittent Ascent and Descent of Testicle. J. Murard.—p. 519.
*Umbilical Ecchymosis a Symptom of Wounds of Liver. P. Bonnet.—p. 524.
*Resection of Scapula in Treatment of Fistulas. Bosquette.—p. 527.
*Causalgia. R. Leriche.—p. 531.

Volvulus of the Sigmoid Flexure.—As the preferable treatment for volvulus of the sigmoid flexure, Ingebrigtsen recommends resection of the loop as this, he says, is the only means to prevent recurrence. If the intestine is no longer viable, resection is the only recourse. Resection in two stages is the procedure recommended if the intestine has not sufficient vitality for an operation at one sitting, for in that case the general condition of the patient will be bad. As the first step, an artificial anus is made, which is closed later. This is done even though the sigmoid flexure does not show signs of gangrene. Primary enterorrhaphy follows the resection if the general condition of the patient permits.

Clinical Notes on Traumatic Shock.—Bosquette and Moulonguet confess to their inability to explain the origin of shock, but they have reached some definite conclusions in regard to it. They regard shock as a morbid entity. Its evolution is independent of the nature of the wounds received, and also of infectious complications and surgical intervention. When it passes off, the change is brought about suddenly and is not ordinarily associated with any event in the history of the case nor with any form of medication. The prognosis in shock cases is less favorable if a tourniquet has been applied for a long time, but there is no evident relation between the type of wound and the shock that may or may not accompany it: both legs may be crushed without any sign of shock. It seems as if there must be some individual predisposition to shock as the intangible factor common to so many unlike cases.

Delbet Treatment of Recent Fractures of Neck of Femur.—Santy, desiring to try Delbet's method of treating fractures of the neck of the femur (which consists essentially in first reducing the fracture as perfectly as possible and then passing a metal screw through the greater trochanter and lengthwise through the neck into the head of the femur), but not having at hand the special instruments recommended by Delbet, decided to use such simple tools as he had at hand. With these he was able to perform the operation in a satisfactory manner. He describes his simplified technic, thinking thus to encourage others who are not supplied with special instruments to try the Delbet method. He bored the hole for the screw with an ordinary gimlet, 10 cm. long,

and used an ordinary screw from 8 to 10 cm. long and 6 mm. average diameter. He gives roentgenograms from seven cases.

Pseudocoxalgia in Relation to Phimosis.—Confirming the conclusions of Adams (*THE JOURNAL*, June 4, 1887, p. 631) and Reverdin, Veyrassat cites a case of his own to show that intermittent coxalgia and pseudocoxalgia may be associated with phimosis, and that circumcision will relieve the trouble, just as it often does hysteria and neurasthenia.

Sudden, Intermittent, Abdominal Migration of the Testicle.—Murard reports what he regards as a rare case of migration of the testicle; in fact, he has been able to find in the literature only one analogous case, that of Sébilleau and Descomps. A boy, aged 14, after a hard day's work, although characterized by no violent effort, suddenly felt a severe pain in the region of the left groin. The pain was so severe that he almost lost consciousness. Then he noticed that the left testicle had disappeared. After five days it reappeared in place, and this was accompanied by the same severe pain as before. This continued to occur about every month, the testicle remaining away for about five days. Sudden and severe pain always accompanied its coming and going. The patient presented himself at the hospital at the age of 16. The last attack had occurred two weeks previously, but since then the testicle had not reappeared as usual, except for half a day. The testicle could not be palpated and an incision was made lengthwise of the inguinal canal. The cord was in place, but there was no testicle at its extremity. While the palpating finger was searching in vain for the testicle, the traction on the cord caused it to suddenly emerge from a sac formed by the vaginalis and peritoneum. The testicle was found to have no ligament attaching it to the scrotum or the neighboring parts. It was of normal size, though it had no epididymis. The vas deferens terminated a little below the inguinal ring. With the idea of attempting an anastomosis, the vas deferens was cut into at three different points, but was found to be impermeable, for which reason it was decided to perform orchidopexy, which was done by the Walther method. Murard left this service two days later, and while he heard a month later that the fixation had held, he is unable to give further details of the end-result.

Umbilical Ecchymosis as a Symptom of Wounds of Liver.—Bonnet reports a case of thoraco-abdominal injury, associated with wounds of the lung and the convex surface of the liver, in which an ecchymosis in the upper half of the umbilicus appeared, as a secondary symptom of the injury of the liver. He offers the case as a contribution to the study of the symptomatic influence of wounds of the convex surface of the liver affecting the suspensory ligament.

Resection of the Scapula in Treatment of Thoracic Fistulas.—Bosquette thinks that partial resection of the scapula should be regarded as the routine treatment in certain cases of thoracic fistula. If a thoracic fistula does not yield readily to treatment, there is a lesion at the base of the tract or there is a foreign body keeping up the suppuration. Accordingly, a cure will be effected by the suppression of the causal lesion if the walls of the tract are not so rigid and immobile as to prevent approximation. In the latter case Bosquette recommends resection of the scapula as very efficacious and points out two advantages of the method: it suppresses a rigid portion of the wall which maintains a dead space and constant suppuration, and, furthermore, it furnishes in the muscle and periosteum strips that are thereby liberated, very useful plastic material for the filling in of gaping wounds. There are two principal indications for the resection of the scapula: (1) when it forms the rigid roof of an intercosto-scapular bullet track, and (2) when the scapula extends like a cliff over one of the borders of the fistulous wound and thus prevents the walls of the fistulous tract from coming together.

Causalgia.—Leriche remarks that causalgia was born with the war and is disappearing with it. As Weir Mitchell pointed out, the atrocious pain finally subsides in all cases. Leriche here explains the causes, the mechanism, and the technic for curing this vasomotor disturbance by perivascular sympathectomy, as repeatedly described in these columns.

Lyon MédicalFeb. 25, 1920, **129**, No. 4

Citrate Method of Blood Transfusion. Murard and Wertheimer.—p. 161.

Médecine, ParisFebruary, 1920, **1**, No. 5

- French Neurology of the Last Five Years. Laignel-Lavastine.—p. 261.
 *Motor Disturbances After Influenza and Epidemic Encephalitis. P. Marie and G. Lévy.—p. 270.
 Loss of Tendon Reflexes after Skull Wounds. A. Souques.—p. 274.
 *Neuralgia Persisting After Herpes Zoster. J. A. Sicard.—p. 278.
 *The Pilomotor Reflex. A. Thomas.—p. 283.
 *Epilepsy and Syphilis. L. Babonneix.—p. 286.
 *Signs of Sciatica. G. Roussy and L. Cornil.—p. 290.
 Diagnosis and Surgery for Spinal Cord Tumors. T. de Martel.—p. 292.
 Toxic Factors in Psychoses. A. Barbé.—p. 297.
 Nervous and Mental Complications of Influenza. P. Courbon.—p. 301.
 *Atechnia. Laignel-Lavastine.—p. 303.
 *Arsphenamin in General Paresis. Laignel-Lavastine.—p. 309.
 The General Practitioner and the Insane. P. Courbon.—p. 309.

Motor Disturbances Following Influenza and Epidemic Encephalitis.—Marie and Lévy have encountered since the fall of 1918 a number of cases with involuntary movements, choreiform or rhythmic swaying of the limbs or trunk, or tremor, or masklike expression, or twisting of the trunk interrupting the gait. The patients were all comparatively young, and all but one had passed through a febrile disease, presumably influenza or epidemic encephalitis, from two to two and a half months before. In all, the motor phenomena gradually became attenuated in the course of a year, but never disappeared completely. In one case the slowness and stiffness of motion seem to be increasing. These motor phenomena, they say, do not fit into the frame of any known disease.

Neuralgia After Herpes Zoster.—Sicard explains that lymphocytosis in the spinal fluid is often found after herpes zoster, and it testifies to the reaction on the part of the ganglia, nerve roots and meninges in the region involved, as has been confirmed at necropsy. This segment is the cross-road where the pains meet, and in certain cases the pains pass into a chronic stage, and operative treatment offers the only chance for success. His experiences on the cadaver seem to show that traction to tear out the nerve (Franke), is useless and dangerous; severing the posterior root alone (Guleke), is liable to entail motor paralysis. Sicard prefers excision of the spinal ganglion and resection of the two adjacent posterior and anterior roots. The ligature includes both roots between the dura and the ganglion, and then the ganglion is torn out. This gangliectomy has to be repeated on four segments of roots. This extradural procedure causes comparatively little trauma, and is all under direct inspection. Intradural section of the posterior roots entails loss of spinal fluid. He applied this latter method also in two cases, successfully in one, but the other patient died. In three cases the extradural gangliectomy cured two of the patients immediately, but the pains persisted in the other case. One patient with chronic neuralgia after herpes zoster, involving the ophthalmic and superior maxillary nerves, died after gasserectomy.

The Pilomotor Reflex.—Thomas explains the difference between the goose-flesh reflex and the pilomotor reflex, and their diagnostic importance as evidence of functioning of the sympathetic system.

Treatment of Epilepsy.—Babonneix says "Cherchez l'héredo-syphilis" in epileptics and, on the least suspicion of it, give specific treatment at once, striking hard and fast and perseveringly. "When syphilis is a factor, anything is possible, even the impossible, sometimes."

Motor Signs of Sciatica.—Roussy warns that true sciatica may be accompanied by inability to bend the trunk toward the side of the lesion as the patient stands. Another test is to flex suddenly the foot on the leg, the limb extended to the utmost. As this stretches the nerve and induces pain, the nerve is drawn up, flexing the thigh on the pelvis, the leg at the knee. The sharpest pain with this is felt in the calf or back of the thigh. A similar effect is realized when the

tip of the foot is twisted inward, a rotation on the anterior posterior axis of the foot. This induces such pain that the patient usually flexes the limb. These three tests have proved instructive in the three years of experience with neuralgia after war wounds involving the sciatic.

Loss of Technical Skill.—To express this, Laignel-Lavastine has coined the term "atechnia," meaning by this loss of the skill acquired by training in any line. It includes aphasia, amusia, apraxia and similar conditions of acquired incapacity.

Arsenic in General Paresis.—Laignel-Lavastine asserts that as paresis is supposed to be incurable, we are justified in attacking it vigorously, but treatment should begin before the phase of actual dementia is reached. He advises arsphenamin treatment to ward it off if the characteristic meningeal reaction is evident four years after the primary infection. The lumbar puncture fluid reveals in this that the individual is a candidate for parietic dementia long before any clinical symptoms become manifest, and vigorous treatment then offers many chances for permanently warding it off.

Paris MédicalFeb. 21, 1920, **10**, No. 8

- *Technic for Operations on Diaphragm Region. A. Schwartz and J. Quénu.—p. 149.
 *Epidemic Hemeralopia. R. Tricoire.—p. 152.
 *Adhesion of the Soft Palate. J. Rouget.—p. 155.
 Amebiasis of the Liver. P. Hornus.—p. 157.
 Streptococci in War Wounds. P. Pruvost.—p. 159.

Operations in Diaphragm Region.—Schwartz and Quénu give a further illustrated description of what they call a thoraco-phreno-laparotomy, the main features of which were summarized in an abstract on page 1315, Oct. 25, 1919. They expatiate on the ample access it affords to the spleen and to all organs in the hypochondrium, the cardia, ligation of the coronaries, etc.

Epidemic Hemeralopia.—Tricoire encountered 320 cases of night blindness among soldiers. He ascribes it to lack of vitamins, as all the men threw it off promptly under cod liver oil.

Adherent Palate.—Rouget reports three cases of adhesion of the soft palate to the pharynx wall after an operation for adenoids or tonsils. The parents are inclined to incriminate the surgeon, but Rouget presents evidence that inherited syphilis is probably responsible for the postoperative conditions which entailed the synechia. In two of the cases described the Wassermann reaction was positive, and the third child had a brother with iridochoroiditis. Marfan regards inherited syphilis as the cause of adenoids in the majority of cases.

Presse Médicale, ParisFeb. 21, 1920, **28**, No. 15

- Mode of Reaction of Blood to Extravascular Causes for Loss of Balance. A. Pruche.—p. 141.
 *Lengthening the Achilles Tendon. R. Toupet.—p. 143.

To Lengthen the Achilles Tendon.—Toupet slits the tendon lengthwise from side to side and cuts the flaps across so that they overlap. The tendon flaps are then slipped along on each other until the tendon is of the desired length. Nine illustrations accompany the article.

Progrès Médical, ParisFeb. 14, 1920, **35**, No. 7

- *Mechanism of Acute Retention of Prostatic Origin. F. Legueu.—p. 67.
 Familial Psychosis in Native Congo Family. E. Terrien and R. Saquet.—p. 72.

Acute Retention of Urine of Prostatic Origin.—Legueu presents evidence that the retention with hypertrophied prostate is due more to nervous influences on the sphincter than to the size of the prostate.

Feb. 21, 1920, **35**, No. 8

- *Chronic Inflammation of the Omentum. A. Aimes.—p. 79.
 Angina Pectoris. Chauffard.—p. 83.

Chronic Inflammation of the Omentum.—Aimes emphasizes the importance of seeking for epiploitis in all inflammatory processes in the abdomen. It may even simulate cancer by the debility and emaciation it may induce and the immobility of the inflamed mass. Bakes resected the adherent transverse colon in one case which proved to be merely an inflammatory tumor that had developed around three ligature threads. The posterior aspect of the omentum should be examined at operations, and all damaged portions should be resected.

Revue Médicale de la Suisse Romande, Geneva

February, 1920, 40, No. 2

- *Care of the Feet. Roux.—p. 61.
- *Exploration of Stomach Functioning. E. Cottin and M. C. Saloz.—p. 83. Cont'n.
- Prophylaxis of Venereal Disease. Ch. Morin.—p. 92.
- Legislation Against Alcohol. H. Preisig.—p. 104.
- Hypothyroidism in Course of Tuberculosis. T. Stephani.—p. 108.
- Partial Resection of Cervical Sympathetic for Right Hyperhidrosis. A. Kotzareff.—p. 111.

Care of the Feet.—Roux implanted a piece of fat, about 0.5 cm. thick, under the head of the fifth metatarsal bone through a lateral incision, and thus cured the pains resulting from the lack of the normal cushion of tissues at this point. In another case, after correcting hallux valgus, he implanted a pad of fat under the head of each first metatarsal bone. The fat was taken from the lumbar region. The woman had long been hobbling on account of pains from her feet, but these procedures restored clinically normal conditions persisting during the year to date. He says of high heels that a foot pointing downward from a nearly 4-inch heel forces the big toe into the tip of the shoe, and the foot rests exclusively on the heads of the metatarsal bones. The wearer is thus preparing for herself hallux valgus and pain under the heads of the metatarsal bones, all of which may be aggravated by arthritis, exostosis or bursitis. Correction of these conditions requires an operation and tedious treatment, and the correction persists only if the precautions are taken which should have been taken in the beginning. The various operative methods are analyzed. "Their results demonstrate," he says, "the wisdom of avoiding hallux valgus." The steep streets of his Swiss city seem to be particularly injurious in this respect. He adds that the interned soldiers, "walking with their feet parallel, using all their ten toes, have taught the advantages of the American army shoe. It would be perfect if it were not so ugly—*disgracieux à faire retourner les passants*. . . . By Americanizing the Swiss shoe, planting the feet parallel, and using all the toes in walking, we can ward off flat foot, pain under the heads of the metatarsal bones, hallux valgus, and the surgeon—all at one stroke."

Schweizerische medizinische Wochenschrift, Basel

Feb. 26, 1920, 50, No. 9

- *Silver Sodium Salvarsan. O. Nägeli.—p. 161.
- *The So-Called Epicondylitis Humeri. J. Dubs. Conc'd in No. 10, page 187.
- Testing Vision for Railway Service. A. Erb.—p. 169.

Silver Sodium Salvarsan.—Nägeli has injected this drug 800 times and regards it as progress in the treatment of syphilis. The first batch he received induced by-effects of an angioneurotic character more frequently than with nearsphenamin, but with later batches these disturbances were less pronounced and less frequent.

Epicondylitis Humeri.—Dubs' analysis of the literature and personal experience with nine cases have confirmed that tennis elbow and the Vulliet-Franke epicondylitis humeri are identical. It develops after athletic or industrial use of the elbow or a single trauma of the epicondyle. But, in both conditions, the trouble is in the capsule of the elbow joint, not in the epicondyle itself. The course is usually over several months, refractory to treatment, but final recovery is the rule.

March 4, 1920, 50, No. 10

- Prevention of Roentgen-Ray Injuries. H. Hopf.—p. 181; Idem. E. Wölflin.—p. 186.
- The Railroad Medical Service. J. Michalski.—p. 191.

March 11, 1920, 50, No. 11

- *Epidemic Encephalomyelitis. R. Stahelin.—p. 201; Idem. H. Reich.—p. 207.
- Goiter in Relation to Height. H. Hunziker.—p. 209.
- *Epilepsy and Inherited Anosmia. M. Alikhan.—p. 211.

Epidemic Encephalomyelitis.—Stahelin insists that this is the proper name for what is being called lethargic encephalitis, as the pathologic anatomic findings are the same in all cases while the clinical manifestations may differ widely. In some of his seventeen cases the necropsy findings first cleared up the diagnosis, the symptoms having been rudimentary or atypical. In some cases they seemed to indicate cerebral hemorrhage. In four cases the epidemic encephalomyelitis was confirmed by necropsy, but in each it had developed consecutive to influenza, and necropsy revealed accompanying lesions of influenzal pneumonia. From the records to date it seems that about 33 per cent. of the typical severe cases terminate fatally and numerous others are left with chronic sequelae. He does not know of any convincing testimony on treatment with hexamethylenamin, iodine or lumbar puncture, or as to transmission of the disease by direct contact or by carriers.

Reich says that the disease seems to be appearing all over Switzerland and reports ten cases personally studied. Necropsy in one showed besides the typical lesions of the epidemic encephalomyelitis, findings in the lungs such as are typical of the hemorrhagic lobular influenzal pneumonia. One lad of 17 developed the disease two days after his father.

Anosmia and Epilepsy.—Alikhan gives the tree of a family of thirty members in four generations, eleven of whom have no sense of smell and four very little, while two members of the later generation are epileptics. The anosmia was transmitted through the women, none of the male descendants having married. The transmission occurred the same through the descendants from a second marriage of the great grandmother. This connection between anosmia and epilepsy should suggest study of the hippocampus major in epileptics and in those with anosmia.

Chirurgia degli Organi di Movimento, Bologna

February, 1920, 4, No. 1

- *Arthrodesis of Shoulder. G. Serafini.—p. 1.
- *Lesions of Sesamoid Bone of Big Toe. G. Serafini.—p. 7.
- *Radial Neuritis. G. Vernoni.—p. 29.
- Recurring Radial Paralysis. V. Putti.—p. 45.
- *Motor Plastic Operations: Cinematization. I. Scalzone.—p. 50.
- *Rotary Movements in Cinematization. V. Putti.—p. 65.
- Huge Lymphangioma of the Thigh. G. Pirotti.—p. 87.
- Reconstruction of Crucial Ligaments. V. Putti.—p. 96.
- Glue in Artificial Limbs. A. Landini.—p. 102.
- *The Anatomic Artificial Leg. C. Ghillini.—p. 121.

Arthrodesis of the Shoulder.—The paralysis of the arm, of spinal origin, in the eight months' infant was followed by spontaneous fracture of the humerus about two years later, and the arm hung limp. Serafini describes the operation with two wire sutures which restored the use of the arm to a certain extent, although the humerus is still elastic and frail. Functional use will correct this, it is hoped.

Trauma of Sesamoid Bone of Big Toe.—Serafini has encountered two cases and summarizes from the literature twenty-two cases of alleged fracture and three of lateral dislocation, and refers to the many cases of inflammatory lesions in the sesamoid bone of the big toe. In his own cases the bone had fractured during a long march or from a fall, and a complete cure followed its removal in one case; improvement is progressing in the other under medical measures.

Radial Neuritis.—The girl was healthy until, at 13, right radial paralysis developed, without pain. It subsided under the usual measures in three months, but bluish patches were noticed on the arm afterward for some time. A year later the paralysis returned as also the purpura in the radial territory. No relief was obtained by any measures, and after three months there was intense pain in the upper arm. A large bluish patch ulcerated, and the disturbances kept up until the radial trunk was exposed and adhesions separated, physiologic saline injected around the nerve, and the nerve wrapped in a segment of artery from a dog. A few months

later the paralysis returned, and it has persisted for three years to date. Bacteriologic examination of the blood the second year disclosed a pathogenic hemorrhagic pseudodiphtheria bacillus. This may have been responsible for the apoplectiform neuritis. Reexamination ten months later was negative, and the serum showed no agglutinating power for this bacillus, but guinea-pigs inoculated with it developed hemorrhages in the skin and, in one animal, in the sheath of a nerve. In the course of six years the girl has thus had four attacks of right and three of left radial paralysis, and at present the radial paralysis is bilateral.

Cinematization of the Arm.—Scalone's illustrations show the tunnel in the stump, traversing the whole mass of the muscle. The end of the stump can be flexed and extended with the entire force of the muscles. A rod passed through the tunnel can be swung to and fro, each end able to describe an arc of over 90 degrees, and exerting great force as it moves an instrument to and fro or up and down.

The Rotation Method for Cinematization of the Arm.—Putti slits the end of the stump for nearly 10 cm., separates the bones, and sutures the skin to make two sausage-like prongs of the end of the stump. Objects can be held between these prongs as between two fingers and, by rotating the arm, an object can be turned with considerable force. These natural prongs have proved particularly useful in one case illustrated in which the man had lost not only both hands, but also his eyesight. With his prong stump he can feed himself, etc., and he has trained the other stump so he can palpate and thus read the raised Braille letters. He is thus saved from the necessity of prosthetic appliances. In this case the prong stump can be rotated for very nearly 165 degrees.

The Anatomic Artificial Leg.—Ghillini made the skeleton frame for the leg exactly to correspond to the human skeleton, the wooden femur, tibia and fibula reproducing the natural curves and valgus, with sponge rubber artificial muscles. In the case described, this anatomic leg has given the very best results in functioning and appearance, and Ghillini declares that the prosthetic appliances of the future will certainly be on the basis of anatomy instead of the old system of straight pegs, etc.

Pediatria, Naples

March, 1920, 28, No. 5

*Children of Women Doing Gainful Work at Home. C. Carmagnano.—p. 209.

Syringomyelia in Two Children. G. Di Giorgio.—p. 226.

*Encephalomeningocele. A. Versari.—p. 230.

The Children of Women Doing Wage-Earning or Piece Work at Home.—Carmagnano's investigations showed more unfavorable conditions for the children of women of this class than for any other industrial workers. He urges that the legal measures to protect prospective and nursing mothers should be applied to this class as well as to factory workers.

Encephalomeningocele.—Versari reviews the literature on hernia of the brain and meningocele, and reports the successful removal of an occipital meningocele which contained an extension of brain tissue. The bottle-fed infant was only 5 days old at the time, and it died a few months later, but had never presented any appreciable nervous disturbances.

Policlinico, Rome

Feb. 16, 1920, 27, No. 7

*Paraplegia in Malaria. F. Sabatucci.—p. 193.

*Intraspinal Anesthesia. G. Trogu.—p. 198.

*Seasickness. G. Dragotti.—p. 200.

Paraplegia in Malaria.—Sabatucci reports two cases in soldiers. After a period of weakness in the limbs, followed by intermittent claudication and rectovesical sphincter incompetency, a spinal cord "stroke" followed, entailing paraplegia and retention of urine and stools, with bed-sores in one case. The paraplegia was lax at first but finally became spastic and gradually improved under quinin. One still has slight spastic paraparesis and the other the same accompanied by sphincter incontinence. The spinal cord *ictus* developed after a long march or other effort.

General Anesthesia by Intraspinal Route.—Trogu urges the more general adoption in suitable cases of the Schlimpert-Kehrer method of high sacral anesthesia, and of the intraspinal general anesthesia by Riche's lumbar technic. The latter method is particularly useful for long tedious operations on much debilitated patients. In a recent case the patient required a gallstone operation early in convalescence from typhoid. The 8 per cent. solution of procain was injected by the lumbar route, 1 cc. of the procain to each 5 kg. of body weight, a total of 0.095 gm., withdrawing a total of 10 c.c. of spinal fluid, and mixing it with the anesthetic in the syringe as the injection proceeded. The anesthesia was complete up to the thorax, and the suppurating gallbladder with numerous stones was removed without pain or mishap; a large abscess in the margin of the liver was evacuated at the same time.

Seasickness.—Dragotti recalls that all movements of the body liable to sway the lymph in the semicircular canals may induce symptoms like those of seasickness. A cold or hot douche of the ear may not only produce the same symptoms, but may arrest them when they have been brought on by the movement of the ship. Infants escape seasickness as their semicircular canals and the endolymph are not completely developed. Prevention and treatment of seasickness can aim, he says, only to reduce the excitability of the semicircular canal system, as we are unable to prevent the endolymph from being swung about. The bromids therefore, he declares, are the most effectual means in prevention, and strontium bromid irritates the stomach least of the various salts. Small doses are best, 1 gm. three times a day, beginning a week before going on board the ship and keeping it up during the entire voyage. Other sedatives might also be used. The labyrinth in time loses its extreme excitability. The same effect might be realized on land with the revolving chair or other means to train the semicircular canals to bear the swinging of the endolymph without reaction.

Riforma Medica, Naples

Jan. 31, 1920, 36, No. 5

*Bacteriology of Epidemic Encephalitis. Maggiora, Mantovani and Tombolato.—p. 114. Bocculari and Panini.—p. 126.

Antigenococcus Vaccine by the Mouth. M. Giorgis.—p. 114.

Epidemic Diseases on Northern Front. U. Carpi.—p. 117.

Walking Case of Epidemic Encephalitis. A. Abbruzzetti.—p. 120.

Prosthetic Appliances for Reconstruction of the Face. B. De Vecchis.—p. 121.

Intraspinal General Anesthesia. I. Di Pace.—p. 125.

Present Status of Intestinal Lambliosis. G. Molinari.—p. 126.

Bacteriologic Findings in Epidemic Encephalitis.—Maggiora and his co-workers report that they isolated from the blood in three cases of severe lethargic encephalitis a gram-positive diplococcus which reproduced in guinea-pigs a fatal disease with torpor, paresis and jerking of muscles, and punctiform hemorrhages in the gray matter of the brain. The diplococcus is a facultative anaerobe and passage through animals seemed to enhance its virulence. Bocculari and Panini report the finding of a gram-negative diplococcus in the blood of patients with lethargic encephalitis and from the blood from the heart in one fatal case. Guinea-pigs inoculated with it developed a diffuse diplococcemia.

Annaes Paulistas de Med. e Cir., S. Paulo

December, 1919, 10, No. 12

Removal of Large Ranula. Alvaro Camera.—p. 265.

Luargol in Treatment of Inherited Syphilis and Leishmaniasis. Rezende Puech.—p. 268.

Model Death-Certificates. Rezende Puech.—p. 277.

Archivos Brasileiros de Medicina, Rio de Janeiro

December, 1919, 9, No. 12

*Cysticercosis of the Brain. J. Santa Cecilia.—p. 881.

Psychoanalysis. A. Medeiros E. Albuquerque.—p. 887.

Cerebral Cysticercosis.—In the case reported by Santa Cecilia, the patient was a syphilitic man of 20, and the cerebral symptoms were ascribed to a probable gumma, but no benefit was derived from systematic treatment on this basis. He died during a second attack of convulsions, and necropsy disclosed cysticercosis of the brain. There had been no focal symptoms, merely headache and bilateral choked disk.

Brazil-Medico, Rio de Janeiro

Jan. 31, 1920, 34, No. 5

*Pains in the Stomach. J. Rocha Vaz. Commenced in No. 3, p. 33.
New Species of Sarcophaga. W. Belfort Mattos.—p. 66.

Pains in the Stomach.—Rocha Vaz agrees with those who think that the sensations of heat and cold experienced when fluids are ingested do not proceed from the stomach but from the lower end of the esophagus. Even an excess of hydrochloric acid is not directly responsible for pain.

Crónica Médica, Lima, Peru

December, 1919, 36, No. 678

Comparison of Influenza Epidemics. E. Odriozola.—p. 403.
Relapsing Fever in Peru. Eleodoro del Prado.—p. 408.
*Anatomy in Ancient Peru. F. Quesada.—p. 415.
Recent Progress in Gynecologic Instruments. C. E. Roe.—p. 430.

Relapsing Fever in Peru.—Del Prado relates that epidemics of mixed typhus and relapsing fever have long been known in Peru, although the two diseases have often been confused. It is a current saying that relapsing fever paves the way for typhus. Not until 1917 was the differential diagnosis of relapsing fever made with precision in Peru and the spirochete discovered, and effectual measures of prophylaxis undertaken against it. Del Prado had charge of the campaign against relapsing fever in the two provinces most ravaged by it in 1918. The disease is endemic in the mountainous districts and appears only sporadically in the coast provinces. Some of the principal endemic foci are in cold regions, on the brow of the mountains. The disease spreads thence to the coast. The hemorrhagic forms have been most prevalent in the epidemics of the last two years.

Anatomy in Prehistoric Peru.—Quesada does not agree with those who regard the evidences of trephining found in the tombs of the period of the Incas as testifying to a knowledge of anatomy. The trephining was probably done for some religious rite or purpose and shows no knowledge of anatomy, and neither does the evidence of setting of fractures or embalming of the bodies. But the ancient Indian language has a number of words corresponding to stomach, pharynx, esophagus, liver, gallbladder, bile, pancreas, intestines, peritoneum, heart, etc., but he thinks that they probably were applied only to animals, not to man. At the same time, the numerous portrait heads made of clay showed a knowledge of the superficial anatomy of the face.

Semana Médica, Buenos Aires

Nov. 27, 1919, 26, No. 48

Extraperitoneal Cesarean Section and the Indications for It. T. A. Chamorro.—p. 661.
Dental Clinics for School Children. E. Zawels.—p. 694.

Dec. 4, 1919, 26, No. 49

The Physical Laws of Cardiac Insufficiency. L. J. Facio.—p. 699.
*Water Worm Kills Mosquito Larvae. A. Bianchi Lischetti.—p. 702.
Syphilis Complicating Gonococcus Processes. C. A. Castaño.—p. 704.
Paroxysmal Hemoglobinuria. H. L. Caretti.—p. 706.
Preventorium Dispensary and Consultorium in Prophylaxis of Tuberculosis. J. S. Picado.—p. 710.
*Biologic Reactions in Diagnosis of Tuberculosis. F. Jauregui and N. Lettieri.—p. 714.
Case of Syphilitic Facial Diplegia. N. Ragusin.—p. 718.
Case of Epidemic Meningitis. A. B. D'Atri.—p. 720.
The Hydrocephalus Cry. G. Giacobini.—p. 722.
Sexual Hygiene. L. Mathé.—p. 723.
Vaccine Treatment of Diphtheria. C. E. Pico.—p. 726.

Worm Enemy of Mosquitoes.—Bianchi relates that he found that the larvae of mosquitoes disappeared from aquariums and jars when the water contained a certain worm of the planaria genus. In the course of four hours, in one test, six of the planaria specimens devoured a total of 106 larvae, only two extra large ones being left of the 108 that had been placed in the water in small lots during the four hours. The same planaria specimens were then transferred to a jar containing 200 larvae, and in twelve hours no larvae were left alive, the smaller ones having been devoured, and the others eviscerated by the planaria. The author is professor of comparative anatomy and physiology at the University of Buenos Aires.

Biologic Tests for Tuberculosis.—The article describes a number of biologic reactions which can be utilized for the diagnosis and prognosis of tuberculosis, according to Maragliano's biologic method. For example: The normal human serum does not contain lecithin. When it is found in the serum the probabilities are in favor of tuberculosis being responsible for this. Tests for nucleins, albumin, precipitins, toxi-albumins, kinetoxins, thermoprecipitins, immune serum and analysis of the urine, applying the Russo, diazo and Weiss-Moritz tests—all these form a basis of data on which can be built an accurate estimate of the case and its outlook.

Siglo Médico, Madrid

Jan. 17, 1920, 67, No. 3449

Public Health Questions in Spain. Francos Rodríguez.—p. 35.
*Incontinence of Urine in Children. F. González Aguilar.—p. 37.
Conc'n.

Incontinence of Urine.—Reviewed on page 988.

Jan. 24, 1920, 67, No. 3450

Practical Index for Attacks of Hysteria. E. Fernández Sanz.—p. 49.
*Critical Review of Cataract Operations. I. Barraquer y Barraquer.—p. 51. Begun in No. 3449, p. 33.

Cataract Operations.—Barraquer explains how his method of vacuum extraction of cataract in the capsule avoids the risks of other technics. He has now a record of over 1,000 operations of the kind and has a set of films showing the technic in moving pictures.

Deutsches Archiv für klinische Medizin, Leipzig

Jan. 27, 1919, 128, No. 3-4

*Use of Digitalis. L. Krehl.—p. 165.
*Elimination of Water by the Kidneys. R. Siebeck.—p. 173.
The Participation of the Kidneys in Influenza. Kuczynski.—p. 184.
*The Pathologic Physiology of the Innervation of the Stomach. P. Klee.—p. 204.
*Origin of Gallstones. Aufrecht.—p. 242.
*Ochronosis. O. Gross.—p. 249.

Technic for Administering Digitalis.—Krehl remarks that nowadays he scarcely ever meets any case of heart disease of any kind that has not been stuffed with digitalis. It is administered hit or miss, while in his own practice he tries to modify the circulation without giving digitalis unless it is strictly indicated. He has had cases in which the edema subsided without drugs under bed rest alone, even with valvular disease of all kinds, syphilitic myopathies, or cardiac insufficiency from chronic nephritis; it is immaterial whether the pulse is permanently irregular, fast or slow, or whether there are extrasystoles. He never knew strict bed rest fail to benefit when the diet was restricted to 1 or 1.5 liters milk in the twenty-four hours. The amount of milk that can be allowed, the necessity to drop salt, and the length of time these restrictions have to be kept up, gage the severity of the case. And the same individual gage is found in each recurring attack. It is possible, he says, that the Karell cure might prove equally beneficial with rice and fruit, scanty salt and measured water intake being the main principle involved. It has been his experience that the outlook was more favorable the greater the rise in the specific gravity of the urine as diuresis increased. Water may pass off likewise in sweat or be eliminated by the lungs. He urges further study of the factors which modify the insensible perspiration in these cases. If the relief from casting off the excess of water does not restore clinically normal conditions in the circulation, then we have digitalis to fall back on. This seems to increase the amount of blood pumped by the heart per second, besides its influence in improving the strength of the beat. He gives digitalis at once or not according as the patient has been getting digitalis and is suffering much and the circulation is much hampered.

Elimination of Water by the Kidneys.—Siebeck reports experiences which show that when a given amount of water is ingested, its elimination within a given period depends on whether much or little water has been ingested during the preceding period. When used to test kidney functioning, the outcome may be misleading unless it is known whether the tissues are already saturated with water or are avid for

water. The "water drinking test" seems to act not only on the kidneys but on the water economy of the body in general.

Innervation of the Stomach.—Klee devotes nearly forty pages to his research on the vomiting reflex. He studied it in decerebrated cats by stimulation of the vagus in the neck. The act began always with the persistent closure of the pylorus.

Origin of Gallstones.—Aufrecht has sometimes found at necropsies that the bile in the biliary passages contained such numbers of fine blackish concretions that it felt sandy. This and other findings sustain the assumption that with stagnation of bile the pigments in the liver cells may form concretions which may become the nucleus for gallstones.

Ochronosis.—Gross states that cartilage placed in homogentisic acid turns brown exactly as in clinical ochronosis. This throws light on alkaptonuric arthritis, as there seems to be something in normal blood which destroys homogentisic acid, while this substance is lacking in the blood with alkaptonuria.

Deutsche medizinische Wochenschrift, Berlin

Dec. 11, 1919, 45, No. 50

*Treatment of Eclampsia. R. T. von Jaschke.—p. 1377.

*Diabetes Under War Conditions. A. Magnus-Levy.—p. 1379.

Pathologic Physiology of Human Body Temperature. Mayer.—p. 1382.
Friedmann's Tuberculosis Treatment in Orthopedic Cases. J. Elsner.—p. 1384. To be cont'd.

*Treatment of Lupus. L. Freund.—p. 1386.

Nitrobenzene Poisoning. K. Bohland.—p. 1388.

State Insurance in Relation to Aid to Mothers During Confinement. M. Hodann.—p. 1389.

Emigration of Physicians to Latin America. Mühlens.—p. 1389.

Combined Treatment of Eclampsia.—Von Jaschke gives a detailed account of his management of eclampsia cases. He begins his treatment with a subcutaneous injection of 0.015 gm. of morphin hydrochlorid. The sick-room is darkened and the patient is carefully protected against all outside noises. After a fifteen minute interval a superficial ether narcosis is instituted, during which the urine is drawn and a digital examination made to determine the condition of the fetus, followed by venesection. Without the narcosis, exploration or the mere use of the catheter might precipitate a convulsion. The urine should be examined for albumin, and the character of the sediment and quantity of the urine should be carefully noted, as the latter has an important bearing on the prognosis and may affect the therapy. If the child is living, the os fully dilated and the head low in the pelvis the narcosis should be deepened and the child extracted with forceps. The birth should not be forced unless the development of the organs in question and the position of the child permit such a procedure without undue risk. The withdrawal of less than 500 c.c. of blood is useless. More than 500 c.c. should not be drawn until it is seen how much blood is lost at delivery. If eclampsia occurs postpartum, which is rare, venesection can be dispensed with provided the patient has lost a half liter or more of blood during the expulsion of the placenta. After venesection the Stroganoff narcotic chloral treatment is instituted. In severe cases with frequent convulsions it is well to give also, subcutaneously or intravenously, 500 c.c. of Ringer's solution (usually two doses in a twenty-four hour period). Throughout the course of the eclampsia he warns to beware of allowing conditions favoring aspiration pneumonia and biting of the tongue. (The Stroganoff method was described in THE JOURNAL, Feb. 12, 1916, p. 530.)

Diabetes Under War Conditions.—Magnus-Levy cites the mortality rate among the civil population of Berlin in support of the now quite generally known fact that diabetes decreased quite perceptibly in Germany during the war period. Before the war, during the 1900-1914 period, there was a gradual increase of mortality from diabetes, the number of deaths, annually, rising from 245 to 444. During the 1915-1918 period, on the other hand, there was an uninterrupted decrease in the annual number of fatal cases down to 202. Before the war, Magnus-Levy had been inclined to ascribe the increase in diabetes of the previous half century to the nerve-racking age of machinery and the rapid pace at which all classes of people lived, as compared with former

years. He has been compelled to change his view, for diabetes has decreased in spite of the fact that the war brought with it a vastly greater strain on the nervous system than was known during peace times. He now thinks that the former increase was due mainly to overeating and the more luxurious mode of living.

Combined Treatment for Lupus.—Freund describes the method of treating lupus that gives the best results of the many that he has tried during his twenty-three years' experience. He has been using this method routinely for some time. If a given case is adapted to this treatment, that is to say, if the focus of the disease is circumscribed and neighboring mucosae are not invaded, the field of operation is cleansed and iodinated and a local anesthetic is applied. Then, at a distance of 1 cm. from the edge of the diseased tissue, a circular incision, the knife held perpendicular, is made in the healthy tissue just deep enough to cut through the layers of skin. The area thus circumscribed is then dissected off in such a manner as to remove all the diseased tissue in the skin and in the underlying tissue layers. Hemorrhage is controlled by compression, torsion and, if need be, by ligatures. The defect is covered with sterile gauze and bandaged. In a day or two the bandage is removed and the defect exposed to an erythema dose of roentgen rays. The raying is continued daily for seven or eight days, six minutes at a time; the tubes of 4-5 Benoist or Bauer hardness; the secondary current 1 milliamperere, and the focal distance from the skin, 20 cm. After the irradiation, fresh petrolatum bandages are applied to the wound, which heals promptly in from eight to twenty-six days, according to the size. Freund has applied this treatment in lupus tumidus et exulcerans of the forehead, the eyelids, the nose, the cheeks, neck, ear, chin, heel, back and buttocks, with areas up to 15 cm. in diameter. With one exception (lupus of the heel) excellent cosmetic results were secured.

Wiener klinische Wochenschrift, Vienna

Dec. 11, 1919, 32, No. 50

*Theories in Regard to Death by Scalding. H. Pfeiffer.—p. 1195.

*Microscopic Studies of the Skin. H. Schur.—p. 1201.

Permeability of the Blood Vessels. J. Bauer and Aschner.—p. 1204.
War in Relation to Paresis. E. Herzog.—p. 1207.

Various Theories in Regard to Death by Scalding.—After a careful study of the phenomena and symptoms in connection with death by scalding, Pfeiffer rejects the shock theory and reaches the conclusion that scalding is only a special type of a large group of pathologic conditions from the action of heat. Autointoxication of the organism by the waste products of protein metabolism is characteristic of the whole group. Whenever, through the destruction of large quantities of body protein, waste products are formed in large quantities and are retained in the system, thus causing the physiologic defensive system to break down; and, for this or other reasons, the circulation is overloaded with protein degenerative products, the now well known and characteristic picture of protein-waste toxicosis is sure to develop. Pfeiffer thinks that this working hypothesis will explain many hitherto obscure pathologic processes besides those from burns.

Microscopic Studies of the Skin.—Schur approves Lombard's method of microscopic study of the skin in the living organism, and suggests some modifications by way of improvement. The technic, as he describes it, is very simple. The portion of the skin to be examined is moistened with a drop of oil or glycerin (Schur prefers liquid petrolatum), whereby it becomes transparent and is thus more readily examined by the naked eye, magnifying glass or microscope. But as the reflex light is often disturbing, Schur recommends that a cover-glass (10 by 10 mm.) be placed over the oiled spot. In this way a picture is obtained that compares favorably with any histologic preparation. Schur follows the custom of making a general survey of the field with the magnifying glass, noting thus quickly the spots that he desires to examine later with the microscope. The light must fall on the object from nearby, at an angle of about 45 degrees. The Osram light is easily attached to the micro-

scope. The difficulties of the examination lie not in the technic, he exclaims, but in the anatomic interpretation of the picture seen, as from lack of experience we scarcely know what we may normally expect to see.

Zeitschrift für Urologie, Berlin

November, 1919, 13, No. 11

- *Physiology of Ureters and Kidneys. E. Pflaumer.—p. 407.
- Bladder Disturbance in Soldiers on Active Service. V. Blum.—p. 449.
- Technic for Pyclography. C. Hammesfahr.—p. 452.

Physiology of Ureters and Kidneys.—Pflaumer concludes his report of experiments of different kinds on the urinary apparatus of about 100 dogs under cystoscopic control. A number of physiologic features were thus detected which impressed him with their efficiency for the purpose designed, such as the arrest in secretion of urine when there is stasis in the ureter or distention of the bladder. He remarks that the fact that urine spurts synchronously from both ureter mouths suggests a central control. Mechanical stimulation of the ureter mucosa does not affect its contractions or the secretion of urine. With a pressure on the kidney of 60 mm. mercury, the secretion of urine is arrested, but change of position has an immediate effect on production of urine. The erect position reduces it, while raising the pelvis increases it.

His results encourage raising of the pelvis in treatment of oliguria, as it facilitates the outflow from the veins and thus promotes production of urine. Another practical lesson from his data is that the polyuria sometimes observed with retention of urine from hypertrophy of the prostate, etc., is not of reflex origin but is a sign that normal conditions no longer prevail in the kidney, as otherwise the stasis in the bladder would check urine production. The polyuria is thus an early sign of kidney disease and warns to clear away at once the obstruction to the flow of urine.

Zentralblatt für Chirurgie, Leipzig

Feb. 28, 1920, 47, No. 9

- *Treatment of Harelip. R. Drachter.—p. 194.
- *Marking Site for Incision. E. König.—p. 197.
- To Reduce Pain with Local Anesthesia. O. Stracker.—p. 199.

Correction of Harelip Apart from the Median Line.—Drachter's illustrations show how he cuts a diamond out of the upper lip, the side angles at the junction of the red lip with the skin on each side. The angles left by excision of the diamond must be about 150 or 160 degrees. The raw edges are drawn together and sutured, the lip flaps meeting evenly. He operates under local anesthesia, and waits until the child is several months old, but the operation can be successfully done when the infant is only 6 or 8 weeks old if in good condition otherwise. The child should not be weaned for the purpose. No dressing is necessary after the suture.

Marking the Site for the Incision Beforehand.—König mentions among the advantages of the practice that the operator does not have to palpate anew for the guiding points after he has disinfected his hands for the operation. It is also a great help in plastic operations to decide the exact path for the knife. Another advantage is that the changes in the tissues from local anesthesia will not mislead as to the location of the gland or tumor below.

Zentralblatt für Gynäkologie, Leipzig

March 6, 1920, 44, No. 10

- *Sign of Impending Parturition. Momm.—p. 233.
- *Spinal Cord Tumors in the Pregnant. C. Meyer.—p. 238.
- *Construction of Artificial Vagina. H. Brossmann.—p. 240.

Sign of Impending Parturition.—Momm states that the decrease in weight of pregnant women on the third from the last day of pregnancy, considered along with other data, will often be found a useful means for determining approximately the completion of term. From the two hundred and seventy-first to the two hundred and seventy-eighth day of pregnancy the weight of the patient increases regularly and quite uniformly, the daily increase averaging 56 gm. Beginning with the third day from the last, up till the onset of labor, there

is a sharp decline in weight; during the last forty-eight hours the patient loses 690 gm. on an average. He tabulates the weight findings in the last ten days, day by day, in twenty women. In every instance, the sudden drop in the weight was followed by the onset of labor in two or three days.

Spinal Cord Tumors in the Pregnant.—Meyer gives a case report of a sarcoma involving the spinal cord, first noticed early in the pregnancy, and emphasizes the necessity for the differential diagnosis as operative removal may ward off danger. Otherwise, spinal cord tumors are liable to be mistaken for myelitis and allowed to progress to a fatal outcome, or they may be classed as pregnancy toxicoses not treated early enough by interruption of the pregnancy.

Construction of Artificial Vagina.—Brossmann gives an account of two cases in which he made an artificial vagina. Both operations were successful. In the first case he used the Baldwin method, as it appeared simpler, and because in most of the cases described in the literature the Baldwin method had been used. In the second case he used the Schubert method and found it more satisfactory. With the Baldwin operation, there seemed to be danger of gangrene in the sutured intestinal loop, followed by septic peritonitis, as described by Guggisberg and Pitha. With the Schubert operation, laparotomy was dispensed with, and the whole operation took place outside the peritoneum; furthermore, the newly formed vagina was more spacious. The only danger that he could see in the Schubert method was that if the sigmoid flexure should, in a given case, be too short and the proximal end of the rectum could not be drawn down to the sphincter without undue stretching, gangrene at the end of the rectum might supervene. It might be well to avoid such a contingency by assuring oneself of the condition of the sigmoid flexure in advance by digital examination.

Zentralblatt für innere Medizin, Leipzig

Feb. 28, 1920, 41, No. 9

- *Present Status of Treatment of Syphilis. W. Hesse, Berlin.—p. 153.

Treatment of Syphilis.—Hesse draws the balance sheet for treatment of the different stages of syphilis from thirty-four articles published in German literature, mostly during 1919. He states that mercury has been almost universally abandoned in treatment of general paresis on account of injury therefrom, and he adds that the capricious course of this disease renders difficult any estimate of the effect of treatment.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 24, 1920, 1, No. 4

- The Fight Against Venereal Disease. T. M. van Leeuwen.—p. 285.
- *Prophylaxis of Diabetes. W. Hoogslag.—p. 295.
- *Diphtheria Bacilli Carriers. G. J. Huet.—p. 303.
- *The Neck Reflex in Prognosis. D. J. Jonkhoff.—p. 307.
- Case of Aplasia of Female Genitals. J. G. de Graaff.—p. 309.

Prophylaxis of Diabetes.—Hoogslag relates that during the period when the populace of the Hague was on war rations, 600 diabetics applied for cards entitling them to certain privileges in the rationing. He assumes that this proportion of 600 diabetics in a population of 350,000 probably extends throughout the country. If this is the case, there are 11,000 diabetics among the total 6,500,000 inhabitants of the Netherlands. He calculates further that these 11,000 diabetics average daily 25,000 liters of urine, with an average of 2 per cent. of sugar. This totals 500 kg. of sugar, and, he declares, a loss of this amount of sugar every day cannot be regarded with indifference these days. The loss in earning capacity and the personal sufferings of the diabetics render it imperative to keep them in the most favorable possible condition. Statistics confirm the increasing prevalence of diabetes, and that the moderate cases with only from 0.5 to 1.5 per cent. sugar, are the ones that in the course of years develop the severer complications. In six recent cases of the kind, the men of 52 to 61 had had from 0.3 to 1 per cent. sugar in the urine for six, eight or twelve years, but paid no heed to the doctor's advice about dieting, as they felt well and strong. Two of them died suddenly in a street car or at a picnic; another developed hemiplegia, bed

sores, and furunculosis, and died in coma; another, gangrene and fatal coma; and another developed headache after a strenuous day, and coma proved fatal the next day. Only one of the group had 4 per cent. sugar, but his robust health persisted for four years, when a furuncle developed in the neck after a local trauma and he died in coma in three days. Several in the group held important positions, and if they had dieted to keep their urine free from sugar, they might have had many more years of useful service. The dietetic restrictions might have become less severe in time, as tolerance is increased by keeping the urine free from sugar. He tabulates the details of the diet which cleared the urine of sugar after an average of 5 per cent. or 2.5 per cent. had long been voided in two cases. In conclusion he urges the family physician to have the urine examined once a year of every member of a family in which there is a diabetic, and he appeals to the life insurance companies to provide for examination once a year of the urine of each policy holder without expense to the latter. Thirty patients have been treated with the Allen-Joslin fasting method, with most encouraging results. He commends Joslin's work to Netherlands physicians, saying, "There can be no question of humbug about it," and adding, "American medical science is taking such excellent advantage of the unlimited financial resources at its disposal that it is to be anticipated that ere long it will become of preeminent importance."

Diphtheria Bacilli Carriers.—Huet declares that the ground is still unstable under our feet in this matter of healthy carriers. They are more common than generally assumed, and how long they can harbor the bacilli is still a question. Twenty children who had been exposed to diphtheria were inoculated with sheep antitoxin, and only one developed diphtheria, but all but four of the others had the bacilli in throat or nose during the following month and two of the children, for two months. By mistake, two smears were taken from one child the twenty-ninth day; the first proved negative, the second positive. Three diphtheria bacilli carriers were found among twenty-five newly admitted inmates of the institution, a sanatorium for children.

The Neck Reflex.—In Jonkhoff's case of status epilepticus the head was twisted to the right and when it was passively turned around to the left, the right arm, which was in extreme extension, became flexed, while the left arm, which had been flexed, straightened out. This neck reflex could be elicited only during the coma. There was also at times a reflex action in the legs and in the eyes from turning the head, but it was inconstant and weak. Necropsy after nine days of coma disclosed extensive hemorrhage in the central convolutions and right ventricle. These neck reflexes were described by Magnus and others, and eight cases have been reported in which they were found in meningitis, hydrocephalus, apoplexy, or idiocy.

Jan. 31, 1920, 1, No. 5

*To Repress the Spread of Venereal Disease. T. M. van Leeuwen.—p. 365.

*The Physician's Duty in Prophylaxis of Venereal Disease. G. van Rijnberk.—p. 367.

*Large Families and Child Mortality. Floris Hers.—p. 371.
Organization of First-Aid Service in Large Cities. C. J. Mijnlief.—p. 391.

Case of Rupture of Spleen. J. F. O. Huese.—p. 401.

Prophylaxis of Venereal Disease.—Van Leeuwen insists that it is necessary to arrange graduate courses on the diagnosis and treatment of venereal diseases, easily accessible to general practitioners. This is important for the early recognition of these diseases and prevention of infection of others. The necessity for ample facilities for treatment is generally recognized, but the importance of persevering in the treatment as long as it is needed must be emphasized more. By cooperation of the national, state and municipal public health services with the sickness insurance companies and enlightenment of the public much can be accomplished, and efforts in all these lines are now under way in the Netherlands. He reiterates that the burden of repressing the spread of venereal disease rests on the general practitioner, with specialists only as consultants, except in the larger medical centers.

The Physician's Duty in Prevention of Venereal Disease.—Van Rijnberk comments on a recent article by van Leeuwen in which, while urging the importance of individual preventive measures, and discussing how they should be applied, he had exclaimed: "But I, for my part, shall never regard it as my duty to hold myself in readiness at every hour of the day or night to disinfect any and everyone that applies for this purpose." Van Rijnberk protests that this view is the result of nonmedical considerations. "One might as well refuse to cauterize the wound from the bite of a dog if one knew that the man had been tormenting the dog. What physician would say, 'I do not regard it as my duty to take any steps to ward off rabies from a man that torments dogs.' Wherever danger lurks that the physician can ward off, and he is called on to ward it off, he should never refuse. But he can protect himself against being routed out at all hours of the night, to apply preventive measures, by raising his fees. Those who expose themselves repeatedly to infection will be deterred from applying to him if he charges much for his services, when demanded at untimely hours. But he should give his services whenever they are demanded. It would certainly impress outsiders very strangely to see the physician later welcome and treat the syphilitic patient when, if it had not been for his refusal to apply the preventive measures, the syphilis would not have developed."

Large Families and the Death Rate Among the Children.—Hers records conditions in these lines in a certain district in Holland, giving twenty-one pages of statistics and tables from 1,385 families. They seem to demonstrate that five children is the limit that the mother can bear and rear. The other children in large families die off, from 20 to 50 per cent. dying under the age of 2.

Norsk Magazin for Lægevidenskaben, Christiania

March, 1920, 81, No. 3

*Erosions in Stomach Mucosa. K. Nicolaysen.—p. 225.

*Bandl's Ring Impedes Delivery. K. Brandt.—p. 241.

*Case of Acanthosis Nigricans. J. H. Bidekap.—p. 245.

*Transfusion in Pernicious Anemia. O. Scheel and O. Bang.—p. 250.
Disappointing Results with Convalescents' Serum in Treatment of Influenza Pneumonia. O. Bang.—p. 255.

Growth of Children in Summer. K. Zeiner-Henriksen.—p. 262.

Mammary Cancer: Eighty Cases. S. F. Holst.—p. 272.

Erosions in Gastric Mucosa from Stimulation of the Vagus.—Nicolaysen relates that in ten cadavers he found hemorrhagic erosions in the stomach or duodenum or both; in nine, death had occurred from some lesion such as meningitis or chest disease in which the vagus had undoubtedly been irritated. This confirms the results of his research on twenty-five rabbits injected with pilocarpin; they all developed similar erosions in the stomach. Some of the animals displayed marked vagotony, but the erosions healed rapidly. When the rabbits were given sodium bicarbonate to neutralize the hydrochloric acid, no erosion—that is, no loss of substance—developed in the gastric mucosa. Stimulation of the vagus can thus induce these erosions, but whether they are always due to this is another question.

Bandl's Ring Impedes Delivery.—Brandt describes his third case in which contraction of the lower limit of the contractile portion of the uterus prevented delivery. Only one of the three children escaped with its life.

Acanthosis Nigricans.—There were no papillary growths and the pigmentation subsided after a two months' course in the young man with dementia praecox, otherwise physically sound.

Blood Transfusion in Pernicious Anemia.—Scheel and Bang tabulate the daily findings in regard to the blood and urobilinemia after transfusion of 900 c.c. of blood drawn into 120 c.c. of a 2 per cent. solution of sodium citrate. The patient was a man of 33 with pernicious anemia, his third attack. In two weeks the erythrocytes had increased from 850,000 to 3,118,000; the hemoglobin from 19 to 66 per cent.; the bile pigment in the blood serum had dropped from 45 to 7, and the urobilin figure from 875 (4,500 the second day after the infusion) to 42. The improvement progressed for a time, but the man returned about four months later in his fourth attack, the erythrocytes having dropped to 1,382,000 and the hemoglobin to 28.

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CLEARNESS IN MEDICAL SPEECH *

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When Polonius asked Hamlet, "What do you read, my lord?" Hamlet replied, "Words, words, words." Any one who has served for five years as an officer of this section cannot fail to recall a great deal that was brilliantly conceived and skilfully presented; but if his memory is good he will not have forgotten the occasional paper which, because of its structure and the manner of its presentation, represented to the audience little more than words.

I wonder, then, whether the section will permit, as a sort of swan song, an attempt at constructive criticism on the way in which our work is presented. It must be understood, however, that I dare not offer my own as an example lest I be regarded in the same light as the teacher who advised his pupils that "a preposition is not a good word to end a sentence *with*." I come rather as the man who, though himself no musician, enjoys good music when he hears it.

ESSENTIALS OF A GOOD PAPER

There can be but one valid reason for reading a paper before this section. The author should have something worth hearing. To measure up to this criterion it has been agreed that he must tell of carefully planned original investigation, must be able to establish definitely new facts or principles, or must give such a complete summary in some particular field as will justify deductions of value. And yet, the fulfillment of even these requirements is insufficient to gain for him an appreciative audience; for in addition his material should be presented in a clear, agreeable form, requiring the least degree of effort on the part of his hearers. Unfortunately, we encounter at times papers which are lacking in these particulars. How much better it would be for the high standards of the section if the prospective author, with these requirements constantly before him, would subject his own work to the closest scrutiny.

The writer should be brief. He should bear in mind both in the preparation of his paper and in its presentation that he is being given a hearing before a group of busy men and that time is precious. The time limit for papers is being gradually shortened, for it has been demonstrated that the careful writer can present in a well planned communication an amazing amount of material in a wonderfully brief space of time. This ability can be cultivated. Based on experience as a

listener, I venture to make three pertinent suggestions: Come directly to the point with as few preliminaries as possible; omit every unnecessary detail, and avoid repetition.

He should be able to awaken interest in his subject, else it will be difficult to follow him, his facts will not be widely understood, and his conclusions will soon be forgotten. As an illustration, I have in mind a paper from the pen of a well known physician with an intimate and comprehensive knowledge of his subject, which, because of its rambling paragraphs and poorly constructed sentences, was unconvincing and most difficult to follow. The result was that his ideas were understood by few and remembered by none. A few months later a second paper from the same pen produced quite another effect, the difference being due to the evident care with which this paper was written.

Medical literature, to be followed with sustained interest, requires that we avoid ornateness and superabundance of detail, while striving for unity, proper emphasis, coherence, and clearness of thought.

For the sake then of unity, so often violated, the topic should be limited definitely to such aspects as can be covered clearly within the allotted time; each part should be held to a single point until it is clearly understood, and at the end we should be able to grasp the whole as a single concept. Proper emphasis is served when each part of the communication is spaced according to its value and the whole is given a strong ending. Coherence demands such an orderly sequence of ideas and of paragraphs as will make the entire presentation easy to follow. Clearness in composition depends first of all on clearness in thought, then on precision in the choice of words and care in the construction of sentences and paragraphs. No matter how meritorious the work, it cannot achieve full success unless these principles of English composition are observed.

For fear of being misunderstood, I hesitate to liken the successful medical author to the ad writer, and yet the legitimate aims of the two for a certain distance run parallel. The object of each is to say a great deal in few words, to adhere consistently to the main idea, to emphasize the right point, to hold the reader's interest, and to be readily understood.

We often wonder why the literature of some of our English colleagues is so much more readable than our own. I think I know the reason. Is it not that, having little or no conscience for good English, we do not try? In this connection I might repeat the oft quoted statement that genius is an infinite capacity for taking pains. Careful prevision of composition and paragraphs, and repeated revision of sentences is essential to the production of readable English. It is said that a good writer never ceases to revise his sentences, and

* Chairman's address, read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

that the lines which appear easiest are often the result of greatest effort. To go over it all time and again, to see to it that compound sentences are well balanced, to put the important word at the end of the sentence, and to avoid redundancy—this is the price one must pay for a sympathetic hearing and a lasting impression.

A summary embodying the author's conclusions is always of advantage. It enables the audience to grasp in one concept all that has been said; and when the paper is published, it has the additional advantage of telling the busy reader whether or not the article contains the thing for which he seeks.

After the summary has been written, should come the choice of a title. It should be accurate, expressive and brief. It should not be necessary, as is sometimes the case, for the reader to analyze the title with scrutiny in order to determine the real subject.

Even the most carefully prepared paper dealing with the most brilliant work may fail to elicit interest because of the manner of its presentation. Poor enunciation and rapidity of speech are deadly faults; but still more fatal to interest is the speaker who talks into his manuscript rather than to his audience. The custom adopted in the smaller special societies of speaking rather than reading a communication should be encouraged.

Sometimes, too, it is apparent in the reading of a paper that the author is not thoroughly familiar with its contents; he stumbles and hesitates—a thing that can be avoided if he takes sufficient pains beforehand to be certain of what he is going to say and of how he is going to say it. Thorough and intimate familiarity with one's subject creates a certain infectious enthusiasm which cannot fail to enlist the attention of the audience.

Illustrations by means of charts or lantern slides add greatly to the interest of a paper, for, when visualized, a thing becomes easier to grasp and is more readily fixed in the memory. Even here thought and care are necessary, for illustrations should be graphic and well arranged, and every unnecessary detail should be omitted. When it is advisable to include varying details in one table, like data should be included in vertical columns, and each column should be clearly marked. It is a mistake to attempt too much in one chart, for it should be possible to grasp almost at a glance the information conveyed by a single table. Complicated charts that convey a great mass of unrelated facts are difficult to read and should be avoided.

THE DISCUSSIONS

Finally, still in the rôle of critic, may I speak of our discussions? We were taught long ago that we should discuss an individual paper only once; but nothing has ever been said, at least publicly, of the number of times we may with propriety appear on the floor at a single session. However enthusiastic we may be and how genuinely interested in the entire field of medicine, unless we have some pertinent message to convey it would be well to limit ourselves at any one session to a discussion of two or, at most, three papers. It is of advantage to an individual, as well as to his audience, not to speak too often or too much. The audience then is likely to find him more interesting, and his words will carry greater weight.

Again, the suggestion might be offered that the speaker strive to come directly to the point with as little introduction as possible. He should know exactly

what he wishes to say, taking care to omit all extraneous matter, and when he has said it he should quit. We sometimes hear a man who, through embarrassment, doesn't know how to stop, and in seeking a suitable conclusion he repeats over and over again and wanders on. Another man gets half way through a sentence or paragraph and, realizing that it is poor rhetoric or bad grammar, tries to go back and revise it. When once started it is far better as a rule to plunge ahead. Prevision in speaking is good, but revision is impossible.

The object of the discussion, I take it, is not alone to elicit new facts but chiefly to reveal varying points of view. The glimpse we get of the different ways in which these men of varying mental types react toward the same fact is not only interesting but also of much value. It broadens us and helps us to mold our own manner of thinking. In a discussion the speaker should adhere definitely to a consideration of the material presented, and should not attempt to drag into view the far-fetched details of his own work. I recall vividly the instance of a physician whose paper could not be placed on the program, but who was asked to open a discussion dealing with a similar topic. Giving scant consideration to the article just read, he immediately launched into a narration of his own independent studies without attempt at comparison or correlation, and the audience heard, as it were, simply a second paper. The section is naturally interested in hearing a Fellow tell of his own work in its bearing on the subject in hand, but the connection should not be too remote nor the details too elaborate.

The physicians who read papers before this section are in possession of facts and conclusions of infinite importance. How necessary, then, that knowledge of such inestimable value be presented through a medium which is worthy of the subject! A poor lens in a microscope will obscure and distort the object we desire to study; in like manner will imperfections in the expression of our ideas mar and obscure and nullify the thoughts we wish to convey.

930 South Twentieth Street.

TREATMENT OF MALIGNANT TUMORS OF THE ANTRUM*

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ROCHESTER, MINN.

The usual treatment of malignant tumors of the antrum has been the resection of the upper jaw. The results have been operative mortality, very frequent early recurrences, and a small percentage of cures. By the use of the cautery and radium in the treatment of these conditions, I believe that two advances have been accomplished: first, the elimination of an operative mortality, and second, a marked decrease in the percentage of cases showing recurrences. The number of cures in the treatment of these patients by this method cannot yet be determined, but the present results are very encouraging. The cautery has been employed in the treatment of malignant tumors for many years. At the Mayo Clinic for the last three years, malignant tumors of the antrum have been treated by the use

* From the Section on Laryngology, Oral and Plastic Surgery, Mayo Clinic.

* Read before the Southern Section of the American Laryngological, Rhinological and Otological Society, Cincinnati, Feb. 21, 1920.

of heat in the form of a soldering iron followed by radium treatment, and we believe that the immediate results are much better than when resection of the jaw was performed.

During the two and one-half years from Jan. 1, 1917, to July 1, 1919, thirty-three malignant tumors of the antrum were examined at the Mayo Clinic; fifteen of

of all malignant tumors of the antrum. The figures in Table 2 seem to indicate that almost two thirds of the malignant tumors of the antrum occur in males.

SYMPTOMS

As a rule, the diagnosis of malignancy of the antrum is not made until the condition has become self-evident by the bulging cheek or palate, or the involvement of the floor of the orbit or the nose. The earliest symptom of malignancy of the antrum usually is pain. At first, it may be only a burning or an itching sensation over the cheek due to irritation of the fifth nerve. Later the pain is dull and is frequently referred to the

TABLE 2.—RELATIVE FREQUENCY OF TUMORS IN MALES AND FEMALES

	Cases		
	Inoperable	Operable	Total
Male.....	8	13	21
Female.....	7	5	12
Total.....	15	18	33

teeth; it is usually relieved when the tumor perforates the wall of the antrum into the mouth or cheek. In some cases, the first complaint is nasal obstruction, and in others the increased nasal discharge brings the patient for an examination. In one of our cases the patient's only complaint was a burning sensation over the cheek. He had no external signs of any neoplasm, nor increased nasal discharge. The antrum was dark on transillumination, and on exploration it was found



Fig. 1.—Water cooled retractor in place on diseased side; soldering iron going in above the alveolar process. The antrum is opened through this route in cases in which the cheek is involved.

this group were so far advanced that we did not believe that any form of treatment would prove of benefit. Eighteen cases were treated by the use of the cautery and radium, although in many of these the lesion was

TABLE 1.—INCIDENCE OF TYPES OF TUMORS OF THE ANTRUM

	Cases		
	Inoperable	Operable	Total
Squamous-cell epithelioma.....	11	8	19
Sarcoma.....	2	6	8
Malignant (no microscopic examination of tissue).....	2	..	2
Malignant (type of cell not determined).....	..	1	1
Epithelioma (mixed-tumor type).....	..	1	1
Basal-cell epithelioma.....	..	1	1
Fibromyxoma (malignant).....	..	1	1
Total.....	15	18	33

so extensive that a resection of the jaw would not have been indicated. Since more than half of the patients whom we have examined were treated, the group cannot be called a selected group. The giant-cell tumor and adamantinoma are not included in this list, as they are not true malignant tumors. Of the eighteen cases treated, sixteen were primary tumors of the antrum, and in two the antrum was secondarily involved by a direct extension from the upper jaw.

INCIDENCE OF TYPES OF TUMORS

The data in Table 1 show that squamous-cell epithelioma of the antrum is more than twice as frequent as sarcoma and that it represents more than one half

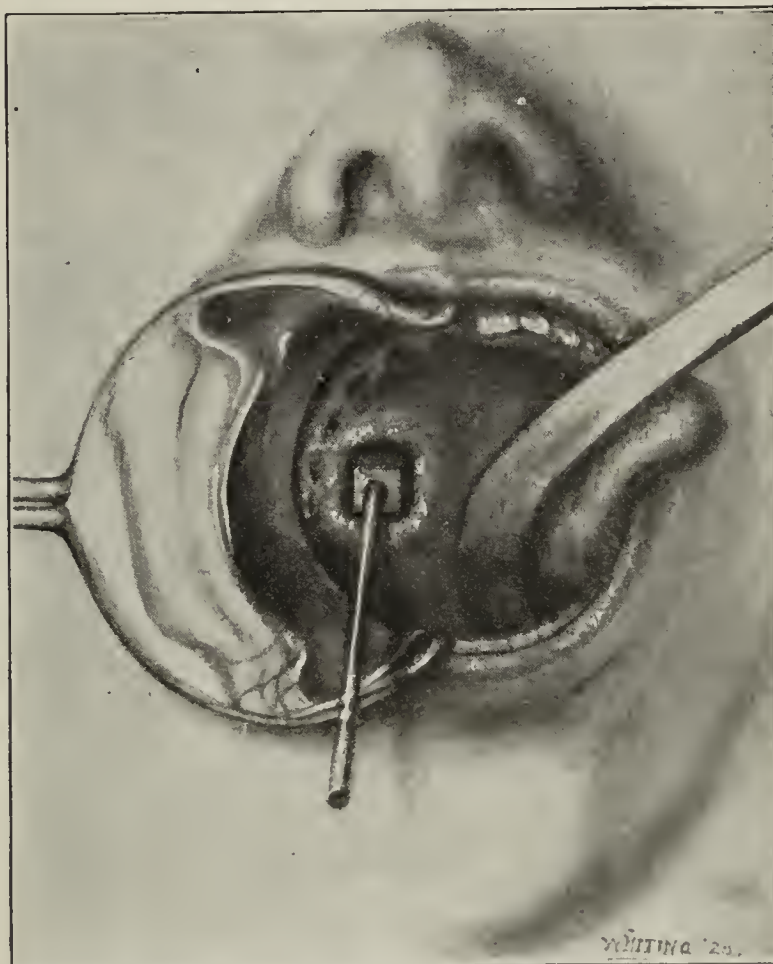


Fig. 2.—Method of opening into the antrum in cases in which the palate is involved.

to be filled with squamous-cell carcinoma. The nose may be obstructed or the cheek floor of the orbit or palate may bulge as the condition becomes more extensive. Frequently the antrum is irrigated from time to time and later repeatedly curetted until the external signs of malignancy develop, and the diagnosis is made, often when it is too late for radical treatment.

SELECTION OF CASES TO BE TREATED

In the selection of cases to be treated, the type of malignancy as well as the extent of the tumor has to



Fig. 3 (Case 13).—Sarcoma of the left antrum of two and one-half months' duration, in a patient aged 63.

be considered. A rapidly growing lymphosarcoma or round-cell sarcoma may be very extensive and still be treated by the cautery and radium, but it would be hopeless to attempt treatment for a squamous-cell epithelioma of similar size. The age of the patient and the length of the history of the condition are impor-

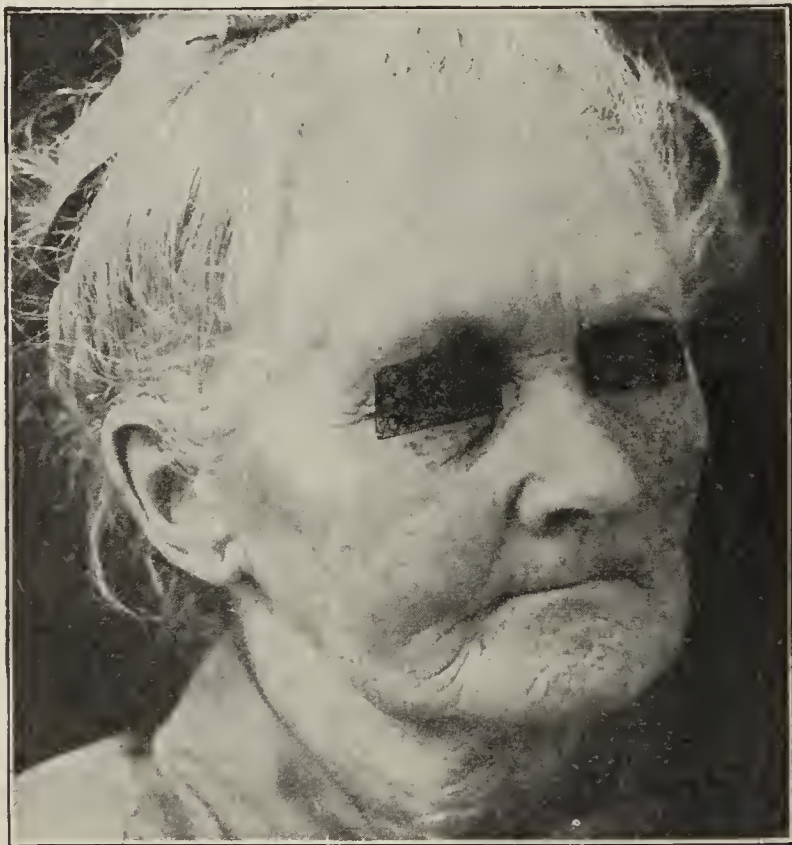


Fig. 4 (Case 13).—Same patient as in Figure 3 four months after operation. No recurrence after nineteen months.

tant factors. Involvement of the nose and sinuses or floor of the orbit makes the prognosis grave, although it does not exclude the possibility of help from treatment. Glandular involvement occurs late in malig-

nancy of the antrum and may be in the parotid, submaxillary or cervical regions: when it is present, the possibility of helping the patient is very slight. No patients with glandular involvement were selected for treatment.

TREATMENT

The usual treatment of malignant disease of the antrum, resection of the upper jaw by means of the Fergusson incision or some modification of this, has not produced a large percentage of cures on account of the difficulty of entirely removing the tumor. The operative mortality, following resection of the jaw, given in the literature from the European clinics, is from 12 to 30 per cent. Kocher,¹ speaking of the results in resection of the upper jaw for malignant tumors, says that recurrence is the rule because removal of all diseased tissue is not certain by our present methods. Schley² says that the average operative mortality of resection of the upper jaw in recent years in America has been from 12 to 13 per cent., that this has been accomplished by almost complete control of sepsis and

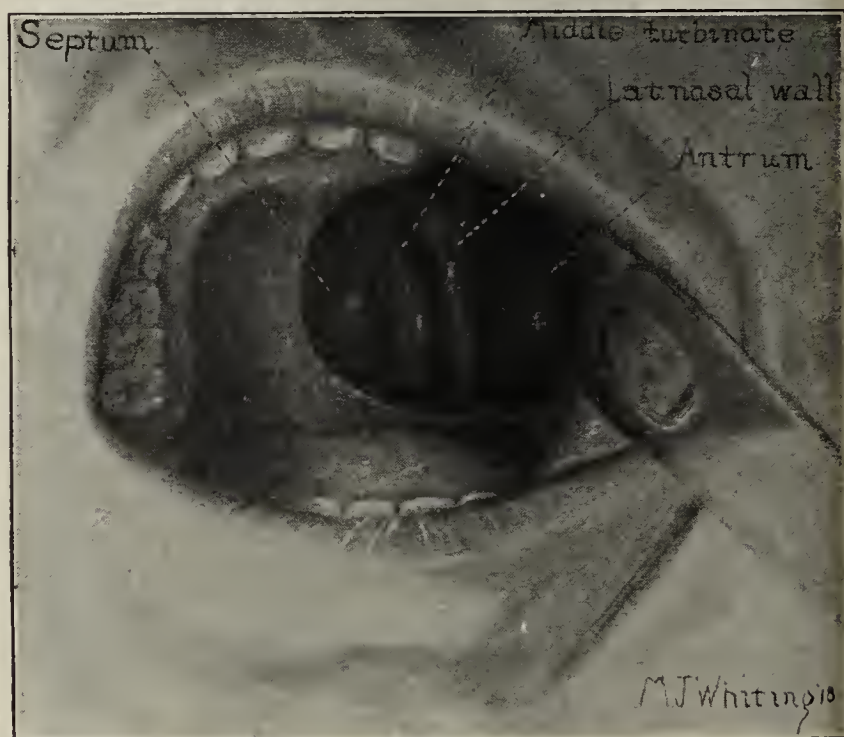


Fig. 5 (Case 7).—Fibromyxoma (malignant) of the left antrum, after operation.

hemorrhage, and that pneumonia should be no more frequent after this operation than after the average operation. During the operation for resection of the jaw for malignancy of the antrum, a definite portion of the bone is removed; and usually on account of the bleeding, it is impossible thoroughly to inspect the wound for any pieces of growth that may have been left.

The realization of the value of the use of slow heat in contrast to any cutting operation in malignant disease is by no means new, especially in cases in which it is difficult to determine the exact limits of the growth. The great value of the heat is that it penetrates far beyond the point at which it is applied.

In the treatment of malignant growths of the antrum, the patient is anesthetized with ether by the drop method. The mask is removed after he is asleep. The head of the table is lowered to prevent any secretion in the pharynx from draining into the trachea. A

1. Kocher, T.: *Operative Surgery*, London, Adam and Blac, 1911, pp. 394-398.

2. Schley, W. S.: *The Surgical Treatment of Cancer of the Superior Maxilla*, *Ann. Surg.* 69: 8-11 (Jan.) 1919.

mouth gag is inserted on the side opposite the growth, and a water cooled retractor is inserted on the diseased side; a curved retractor holds the tongue out of the way. This gives good exposure and prevents burning the lips or cheeks when the cautery is used. The growth is attacked at the point at which it appears in the mouth, either through the palate or from above the alveolar process (Fig. 1). If the growth has not bulged the cheek or palate, the opening into the antrum is made above the alveolar process, as in the Denker operation. If both the cheek and the palate are involved, a large area of the palate and the jaw is removed with the cautery (Fig. 2). The soldering iron is used as a cautery at a dull heat; a red iron carbonizes and prevents the penetration of heat. The electric cautery has such a large heating element in the handle that it prevents a good view of the cautery point. The soldering iron is carried up gradually into the antrum, and the entire growth is thoroughly cooked for from thirty to forty-five minutes. The limits of the growth

entirely to eradicate the growth at the time of the first treatment by the use of thorough cauterization followed by radium.

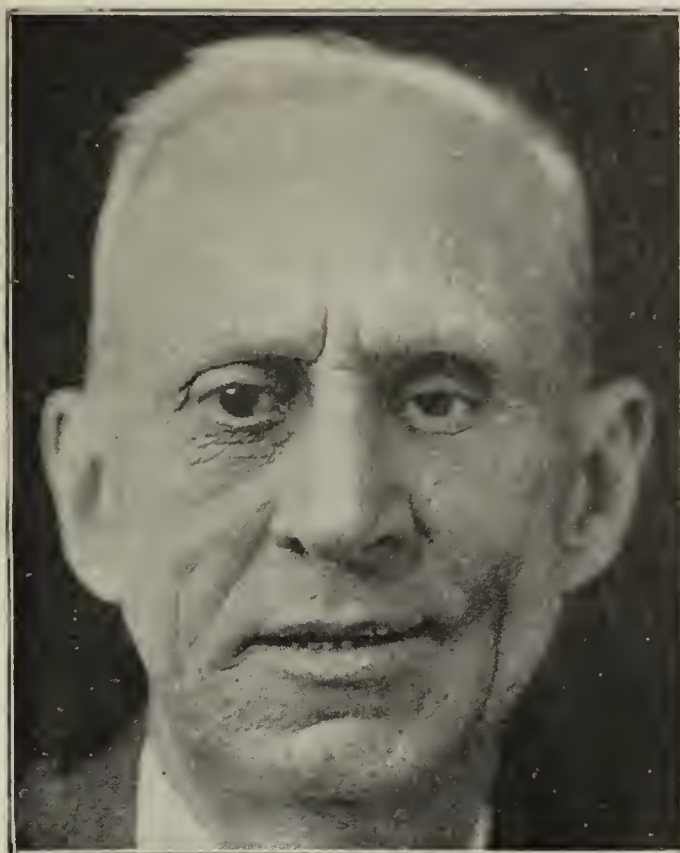


Fig. 7 (Case 15).—Postoperative appearance of patient with extensive epithelioma of the left antrum. The left eye was lost from reaction; the glass eye is in place and the cheek is slightly deformed. No recurrence in seventeen months.



Fig. 6 (Case 7).—Postoperative appearance of patient. Note the slight deformity of the left cheek. No recurrence in twenty-eight months.

are known from the clinical examination, and the cautery is used at the location in the antrum cavity at which it is most needed. Since there is practically no bleeding with this treatment, the walls of the antrum may be inspected to determine whether or not the growth has been thoroughly removed. As the patient begins to wake up from the anesthetic, the irons are removed, the mask is applied to the face, and the patient again put to sleep with ether. This may have to be repeated two or three times before the cauterization is completed.

A knowledge of the pathology of the different types of malignancy is essential in determining the treatment. The rapidly growing sarcomas respond well to radium treatment so that it is not so essential that in this group of cases such thorough cauterization be given as is needed in cases of squamous-cell epithelioma of the antrum, which is a most malignant type of tumor. The mixed tumor type of epithelioma or the cylindroma is of rather low grade malignancy and does not require such radical treatment. The aim of the treatment is

Bloodgood³ uses the cautery in the treatment of malignant disease of the jaws and antrum, but recommends that the growth be removed in stages under local or chloroform anesthesia. He attacks the growth through an external incision in the cheek. It has been my experience that it is best to cauterize the growths very radically at the first operation, since this gives the patient the best chance of recovery, rather than removing portions at successive operations. I also believe



Fig. 8 (Case 15).—Postoperative opening into the left antrum.

that the deformity is less and sufficient exposure is obtained by going in through the palate or above the alveolar process than by making an external incision.

3. Bloodgood, J. C.: Treatment of Tumors of the Upper Jaw with the Cautery: A Preliminary Report, *South. M. J.* 12: 248-256 (May) 1919.

Ether anesthesia has been employed with no untoward results in these cases.

We have used the radium salts or the emanations in tubes directly introduced into the antrum at the point at which it seemed most needed, either at the time of the operation or from ten days to two weeks later, after some of the slough had cleaned up. We use 100 or 200 mg. for from twelve to twenty-four hours inside the antrum, besides giving radium treatment outside the cheek with screening and distance. The radium is frequently used by means of multiple needles inserted into the wall of the antrum from the inside. The dosage in all cases depends on the type of malignancy, its duration, and extent. The radium treatment may be repeated in three weeks, if indicated. The patients are kept under observation; they return every month or six weeks so that if any recurrence takes place they may have immediate care, since this is very essential in order to control early recurrences. Following the treatment, most of the inside of the antrum comes away as a sequestrum in two months' time, and large openings are left in the palate; but they may be readily closed by prosthetic appliances. There is little inconvenience if the opening has been made above the alveolar process.

RESULTS

Cautery and radium treatment of malignant tumors of the antrum have been followed by no operative mortality and no postoperative chest complications. Two of the patients lost the eye on the side involved from the reaction from the cautery and radium, but in both

three cases, data regarding the present condition of the patient were not obtained. The ten patients who are well cannot yet be considered cured, but their cases should be classified as having been without recurrences for a period of months or years. The results of the

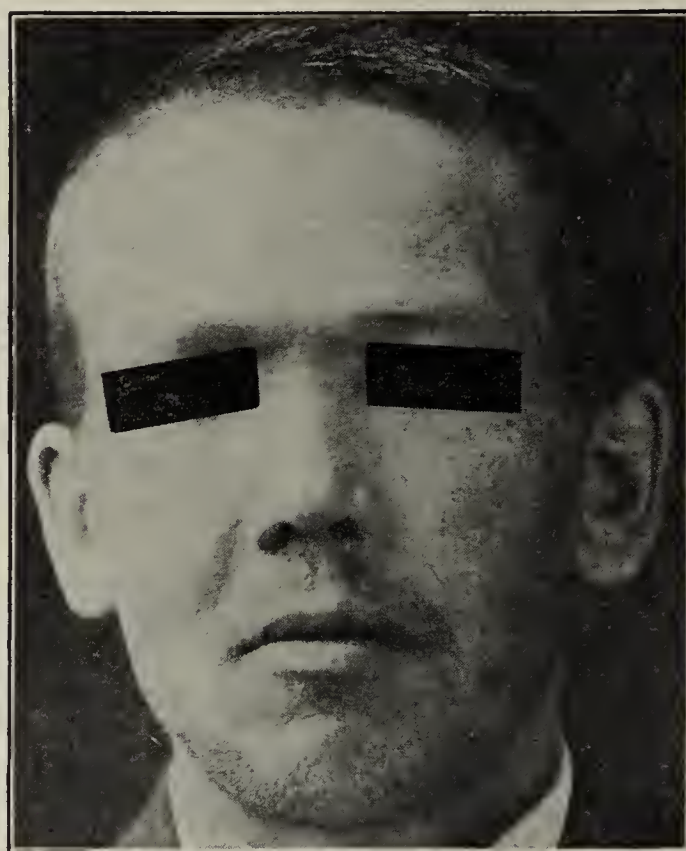


Fig. 10 (Case 17).—Lack of deformity of the face after operation. Large postoperative opening in the antrum, shown in Figure 10.

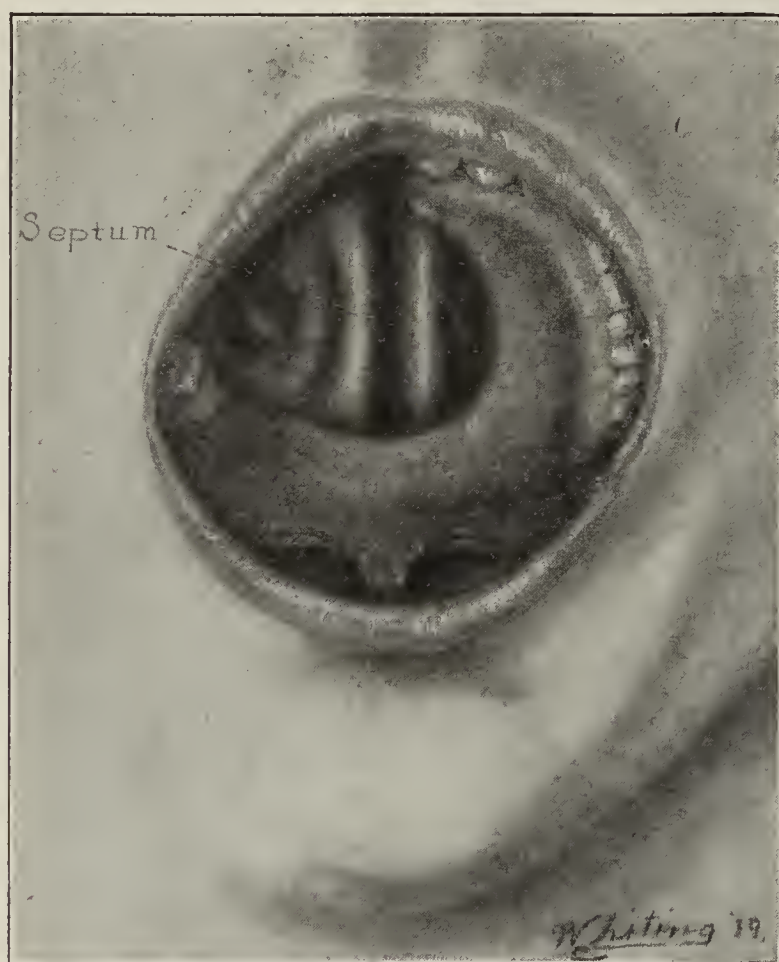


Fig. 9 (Case 17).—Epithelioma of the mixed tumor type of the right antrum after operation.

cases the floor of the antrum was involved. Of the eighteen patients with malignant tumors of the antrum who were treated, three are dead, two have extensive recurrences, and ten are well and have had no recurrences over a period of from eight to twenty-eight months. In seven of these ten cases, there has been no recurrence after more than one year (Table 3). In

treatment of malignant tumors of the antrum, by the use of the cautery and radium, seem to indicate that the operative mortality that usually accompanies the

TABLE 3.—RESULTS IN EIGHTEEN CASES OF MALIGNANT TUMORS OF THE ANTRUM TREATED BY CAUTERY AND RADIUM

Number	Age	Sex*	Duration of Lesion Before Operation	Pathologic Diagnosis	Length of Time Since Last Operation	Present Condition, Result
1	65024	62 ♂	6 months	Malignant	7 months	Dead
2	109408	38 ♀	Recurring; first operation in 1914	Epithelioma	15 months	No recurrence
3	207005	28 ♂	2 years	Lymphosarcoma	26 months	Data not obtainable
4	207386	56 ♂	6 months	Squamous-cell epithelioma	27 months	Hopeless recurrence
5	207662	62 ♂	19 months	Squamous-cell epithelioma	27 months	Data not obtainable
6	208388	58 ♀	16 months	Basal-cell epithelioma	27 months	Data not obtainable
7	210487	19 ♂	3 years	Fibromyxoma (malignant)	28 months	No recurrence
8	229112	38 ♂	1 year	Lymphosarcoma	22 months	No recurrence
9	231539	39 ♀	15 months	Squamous-cell epithelioma	12 months	Dead
10	235481	17 ♂	3 years	Fibrosarcoma	8 months	No recurrence
11	235903	47 ♂	3 years	Epithelioma	20 months	Recurrence
12	238077	47 ♂	3 months	Squamous-cell epithelioma	12 months	Dead
13	239838	63 ♀	2½ months	Sarcoma	19 months	No recurrence
14	244630	39 ♂	5 months	Squamous-cell epithelioma	13 months	No recurrence
15	245402	57 ♂	6 months	Squamous-cell epithelioma	17 months	No recurrence
16	250256	15 ♂	5 months	Sarcoma	15 months	No recurrence
17	262797	35 ♂	16 months	Epithelioma (mixed tumor type)	8 months	No recurrence
18	272557	12 ♀	?	Sarcoma	9 months	No recurrence

* In this column, male is indicated by ♂ and female by ♀.

surgical treatment of these conditions has been eliminated, and the immediate results have been improved markedly (Figs. 3 to 10).

THE IMMEDIATE STERILIZATION AND CLOSURE OF CHRONIC INFECTED WOUNDS

A NEW METHOD APPLICABLE TO WOUNDS OF BONES AND SOFT TISSUES *

W. WAYNE BABCOCK, M.D.
PHILADELPHIA

With the mass of the chronic infections of the war, the aim of the Carrel-Dakin treatment—the early closure of the wound—has not been attained. Few of the soft tissue wounds, and I dare say less than 1 per cent. of the thousands of bone infections returned from overseas, have been brought to an aseptic suture. Despite the widespread use of surgical solution of chlorinated soda (Dakin's solution) and the presence of medical officers especially trained in its use, some of our large army hospitals could not up to May 1, 1919, show even a single case of aseptic operative closure for osteomyelitis.

A treatment successful in the hands of highly skilled enthusiasts may fail in routine use when it exacts infinite care as to detail over prolonged periods of time, and when it is adapted only to selected cases and requires repeated operations and multiple and, at times, exceedingly painful dressings. The average surgeon is not constituted to stand on tiptoe all the time, his technic is not invariably perfect, and his soul rebels against the constant infliction of pain. It is not strange, therefore, that he has so often failed in his Carrel-Dakin treatment.

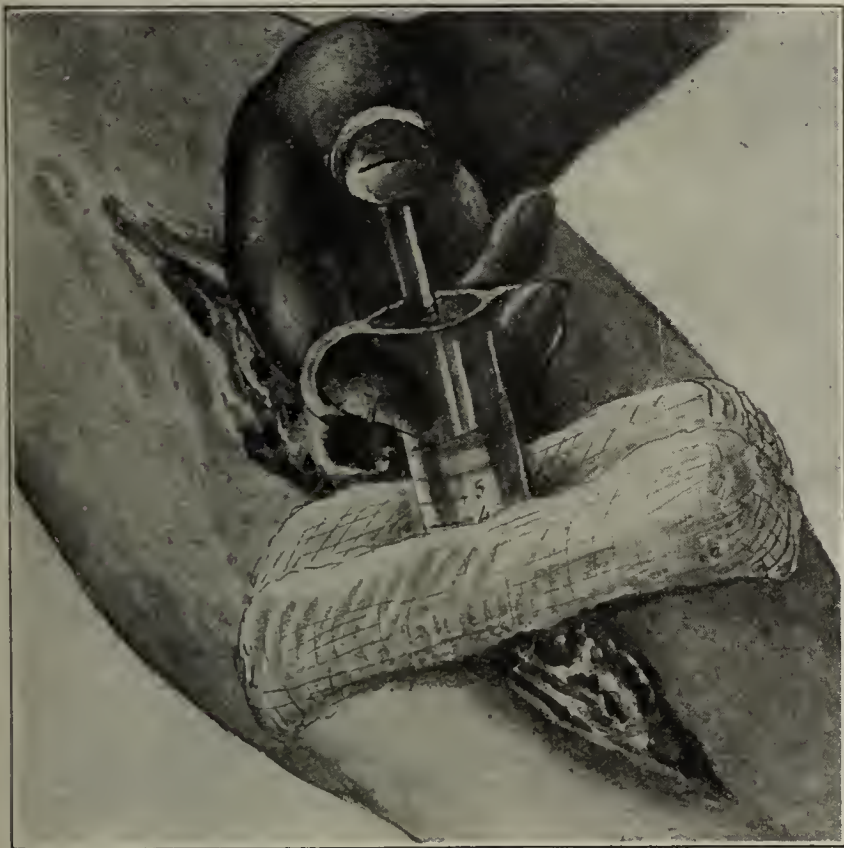


Fig. 1.—Injection of osteomyelitic sinus with saturated solution of zinc chlorid. Gauze is applied to prevent the solution from spurring over bystanders. Forcible injection into sinuses should not be made without protecting the general circulation with a tourniquet. For the pelvis and other bones when a tourniquet cannot be used, the cavity is thoroughly packed with small pledgets of cotton soaked with zinc chlorid.

* From U. S. General Hospital No. 6, Fort McPherson, Atlanta, Ga., Col. T. S. Bratton commanding.

* Owing to lack of space, this article has been abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the reprints, a copy of which may be obtained on application to the author.

We have sought an agent for chronic pyogenic infections that would do rapidly, under adverse conditions and in one operation, what the Carrel-Dakin treatment does so slowly under the most favorable circumstances and with two or more operations. This is the

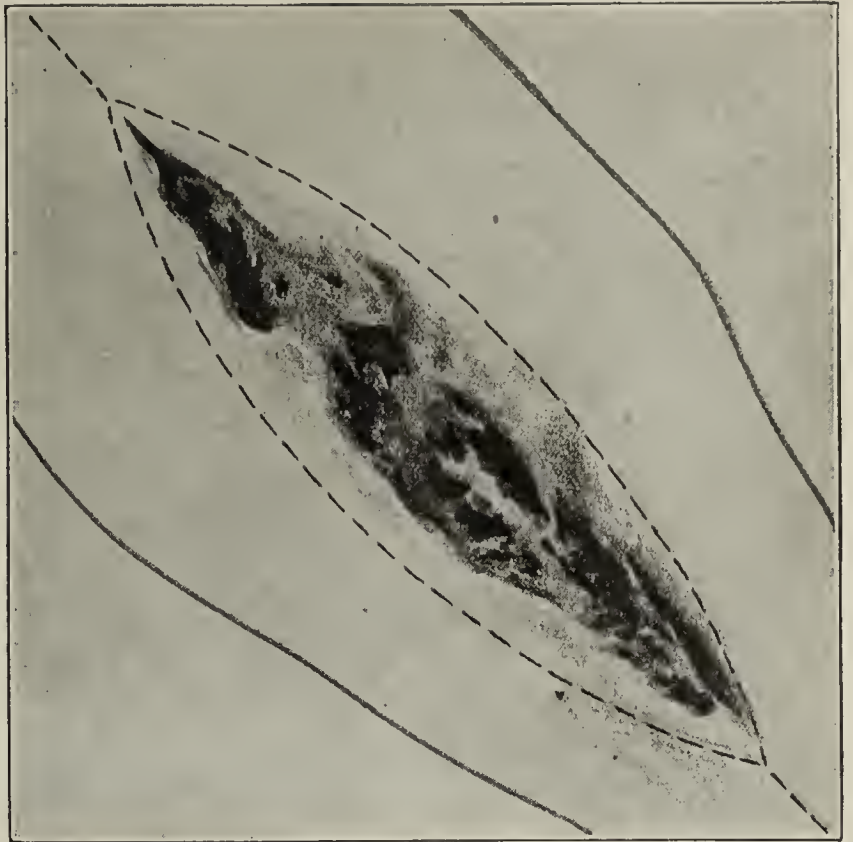


Fig. 2.—Plan of skin incision for the excision of scar and sinuses. A long incision with free exposure of the bone is essential.

apology for presenting a new method for the immediate disinfection and closure of chronic infected wounds. As to its value in acute infections and against the specific granulomas, we cannot at this time say. We have used the method in closing more than 100 chronic wounds of soft tissue, and in about 250 cases of chronic osteomyelitis.

The soft tissue infections were chiefly granulating areas associated with gunshot injuries of nerves, and the method obviated the necessity of waiting the routine three months after the wound had healed before operating on the damaged nerve. A number of chronic ulcers, some of which previously had been treated by skin grafting, and several infected hernia wounds, also healed primarily after the sterilization, excision and suture. The bone infection cases were unselected, had a variety of infecting micro-organisms, and included the worst cases the ward surgeons could find at Fort McPherson. So far as we know, in only one was the bacterial count below infinity. All had from one to nine sinuses, and had had from two to eight previous operations. Some had multiple sequestrums, complete fracture, associated abscesses, and joint or peritoneal complications. The duration of the disease had been from seven months to more than a year, during part of which time, in most cases, there had been weeks or months of Dakin treatment. A few lacked skin preparation when brought to the operating room, and had purulent crusts, pustules or skin abrasions. It was our desire to determine what results could be obtained under unfavorable conditions.

The osteomyelitis most frequently involved the tibia and femur, but the pelvis, humerus, fibula, radius, tarsus and metatarsus, ribs, clavicle, scapula and mandible were also treated. In two pelvic cases the peri-

toneum was opened, while the hip joint and the knee joint were each invaded five times, from a previously purulent field.

As to the final percentage results, it is too early to speak positively except in regard to soft tissue wounds

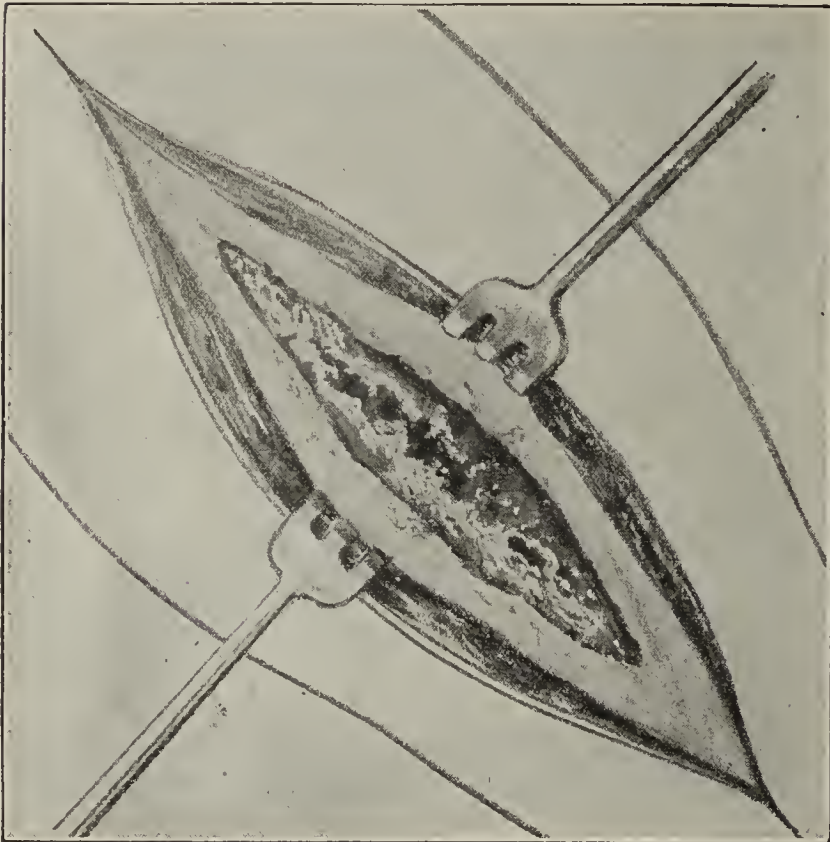


Fig. 3.—Freeing of skin and periosteum by retraction with sharp retractors.

which, as a rule, are easily and satisfactorily handled by the method.

With the bone infections, devitalized and insufficient soft tissue, multiple and often closely adjacent scars, complicated sinuses and hemostasis have presented difficulties not found in the usual operation. As a consequence, the operative results could not be judged as after the usual aseptic operation. Tightly sutured wound edges not infrequently showed a limited necrosis. Accumulated secretions from the enormous wound surface often escaped through stitch holes or between sutures. Stitch abscesses and spreading phlegmons were very rare, and usually all openings were closed and the wound firmly healed at the end of six weeks. Of the first 100 cases only four have required reoperation, none of the older healed cases have relapsed, and our present evidence is that a good technician should be able to overcome from 70 to 95 per cent. of his chronic bone infections by a single operation, the percentage varying with the location, extent of the lesion, amount of viable soft tissue remaining, and thoroughness of the operation.

In our 350 cases, there was one death attributable to the operation. This occurred before the danger of injecting zinc chlorid without a tourniquet was appreciated.

TECHNIC

The method consists of four procedures carried out in one operation under anesthesia:

1. Chemical sterilization of all sinuses and wound surfaces by the injection and application of a saturated solution of zinc chlorid.

2. Delineation of infected areas by the injection or application of an alkaline ethereal solution of methylene blue.

3. Mass excision of the entire area of infection.

4. Wound closure with the obliteration of all dead spaces.

Skin Preparation.—If possible, the wound area should be prepared by daily shaving, washing with soap and water, removal of all scabs and crusts, and the application of a 2 per cent. yellow mercuric oxid in zinc oxid ointment for three days preceding the operation. If possible, to reduce the area of skin excised, adjacent skin lesions, pustules, excoriations and eczematous areas should have healed before the operation.

Wound Sterilization.—On the operating table, under local or general anesthesia, the skin is (a) thoroughly scrubbed with "B" solution (compound solution of cresol, 2; turpentine, 10, and gasoline, 88 parts); (b) painted with 3 per cent. solution of tincture of iodine, and (c) sterilized by a saturated solution of zinc chlorid which is thoroughly injected under pressure or packed with small moistened pledgets into all sinuses and cavities, applied to all unhealed and granulating surfaces, and rubbed very carefully over the scar and skin adjacent to the wound. Five minutes are allowed for the penetration of the zinc solution, and great care is taken that every recess of the wound is reached. If injected under pressure, the general circulation must always be protected by a tourniquet. Obviously, the injection will not be made into fistulas connecting with the bladder, intestine or any other important viscus, nor will this method be used in the presence of erysipelas or other acute spreading infection, or before the normal tissue barriers to sepsis have been erected.

Color Delineation.—The antiseptic staining solution, the composition of which is given herewith, is then

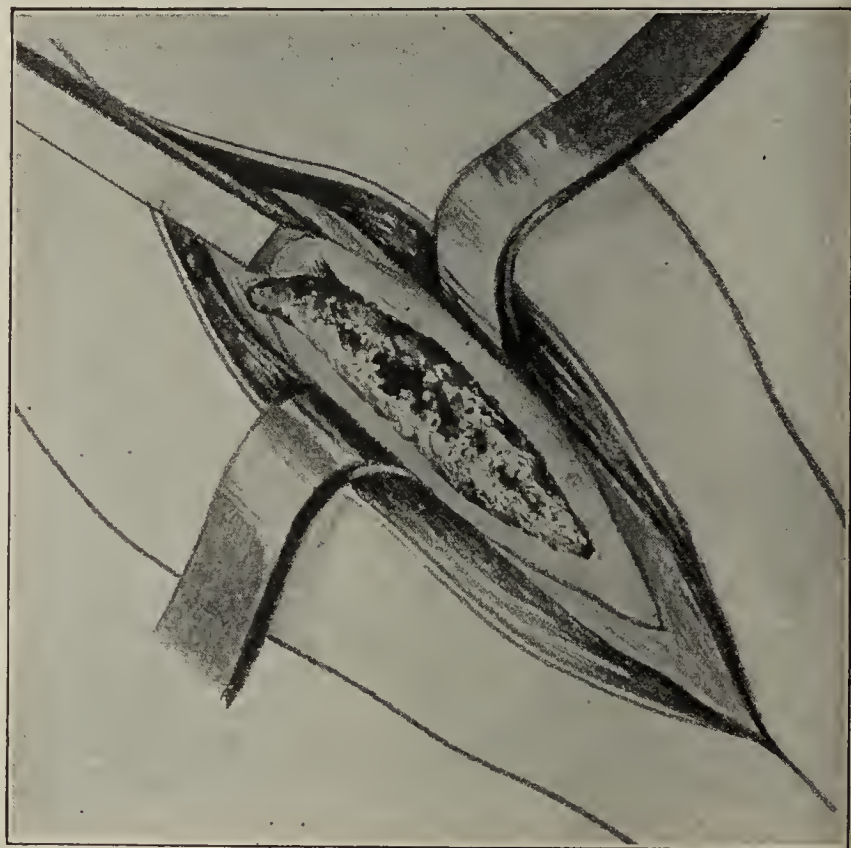


Fig. 4.—Removal of diseased bone, sinuses and attached overlying skin and scar en masse. The protection of the skin margins and soft tissues by towels and gauze is not shown.

thoroughly applied to all eroded surfaces and injected under pressure or packed with cotton pledgets into all cavities and sinuses. As soon as this solution has evaporated, the exposed granulating surfaces are left dark blue-black, dry, bloodless on manipulation, and

sterile. If a section is made through the sinus, it will be found that the coloring has penetrated to a depth of from 1 to 3 mm. Outside this is a much wider zone of avascular, grayish white tissue that has been sterilized and devitalized by the zinc chlorid. Some of the sequestrums removed after the treatment from deep bone cavities have produced no growth on culture mediums.

ANTISEPTIC STAINING SOLUTION

	Gm. or C.c.
Saturated alcoholic solution of methylene blue....	20
Caustic potash	3
Phenol	5
Ether	to make 100

Excision of Infected Area.—The entire field is again painted with tincture of iodine, and a very free skin incision made, so planned as to permit later closure and to surround and be well outside of all scars and sinuses, which are to be excised as near as possible *en bloc*. The instruments are now changed, the skin margins well separated from the adherent underlying tissues by traction with sharp retractors, and dry towels or gauze clipped in position to isolate the wound. The incision is now deepened to the bone, the periosteum is freely incised and retracted from the entire

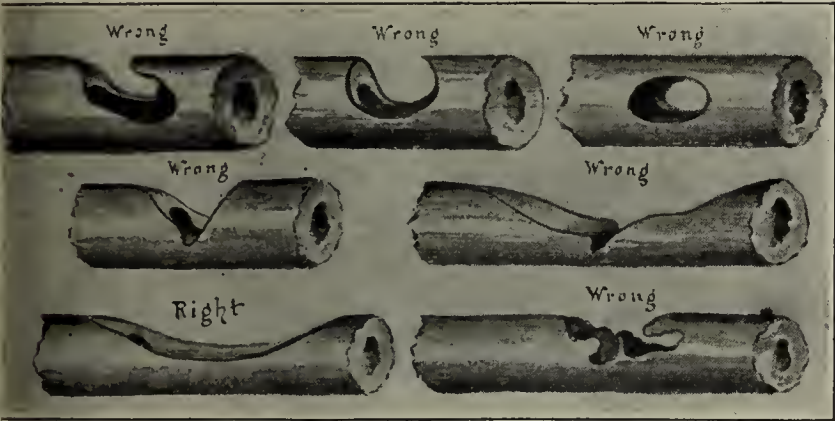


Fig. 5.—General plan of bone resection, and method of converting sockets, cups, deep gutters and holes in bone into shallow saucer-like effects (semidiagrammatic).

circumference of the bone, protected by towels or gauze, and, beginning some distance from the diseased area, with sharp chisels, the infected bone is freely excised with the attached overlying skin, scars and sinuses. Care is taken not to divide the bone completely, but the healthy medullary cavity should be freely exposed. A blue color indicates that all infected areas have not been removed and that the excision is to be continued. The operator should use very sharp knives, gouges and chisels, and work centripetally from outside the septic focus, rather than with curets, which tempt one to work from within out. If possible, all soft tissues and bone should be removed to a distance of at least 1 cm. beyond the blue coloration.

The bone incisions are so placed as to leave smooth surfaces with no holes, gutters, cups or pockets that will remain as "dead spaces" when the soft tissues are closed, and the incision should leave only well vascularized bone and soft tissue free from bone chips and splinters.

Scars.—As a rule, the scar is excised. If too large, however, for excision it is partially excised and the residual part freed, with as thick a layer as possible of underlying tissue to maintain its nourishment.

Large Bone Defects.—These, especially if near the articular ends, may be filled by pediculated flaps of

muscle or other soft tissue, or lined by large pediculated thick skin flaps. We have found the inward transposition of the head of the tibialis anticus and extensor longus hallucis useful for filling large defects of the head of the tibia. The defects left by removing skin flaps may be closed by plastic operation or skin grafting. In case there is a complete fracture, the bone ends should be beveled to chisel edges, and appro-

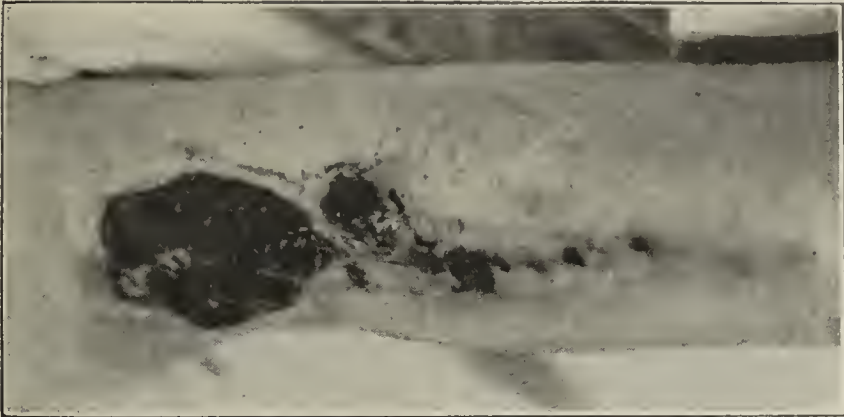


Fig. 8.—Massive nontraumatic osteomyelitis of tibia, of one year's duration; four previous operations; bone riddled with sinuses containing pus, sequestrums and exuberant granulations before operation.

appropriate extension and immobilization should be maintained in the after-treatment.

Multiple Sinuses.—These should be excised if possible. If left, the entire sinus tract will usually later be expelled in the form of a tube of necrotic tissue. To avoid secondary hemorrhage, no zinc infiltrated tract should be left adjacent to a large blood vessel.

Secondary Hematomas.—These are difficult to overcome entirely. Bleeding from bone may be controlled by gauze pressure or by pressing bits of muscle into the bone. Bleeding from soft tissue should carefully be corrected by forcipressure, fine catgut ligatures, or sutures. A lateral stab or incision through an adjacent scar may be left for drainage. Tube drains we have discarded. We have observed no secondary hemorrhage when the method has been accurately followed. In a case in which a surgeon failed to excise and to suture for a treated sinus adjacent to the femoral artery, secondary hemorrhage necessitating ligation occurred on the third day.



Fig. 9.—Lesion shown in Figure 8, five weeks after operation; immediate sterilization, excision, and closure without drainage.

Wound Closure.—The muscles and soft tissues are sufficiently liberated from the skin and bone and each other to fit into the bone defects. If possible, the bone should be covered by a layer of muscle and aponeurosis as well as by skin. Muscles should be well freed and sutured with the edges inverted and rolled in, so as to fill all bone cavities or depressions. Plain catgut sutures are used to unite the deep tissue layers, and

the skin is closed with an everting mattress suture of silkworm gut. Only a dry technic is employed. A sterile 10 per cent. solution of sodium bicarbonate is kept at hand to neutralize the zinc chlorid in case of accident.

After-Treatment.—The early dressings should be copious and should give supporting pressure. Wet, nonirritating, antiseptic dressings are applied for the

SOLUTION "C"

	Gm. or C.c.
Chloral hydrate	1
Alcohol	10
Glycerin	25
Saturated solution of boric acid	65

first week, and until all tissue reaction has subsided. For this purpose we use Solution "C," which is injected into the gauze dressings through incorporated rubber tubes every two to four hours. The part is well supported, and is kept quiet, elevated and warm.

In the after-dressings, the surgeon should refrain from probing, injecting, milking, squeezing, or introducing tubes or any other thing into the wound. If there is marked distention from retained wound secretion, a stitch may be cut and the wound margins slightly separated. Daily wet dressings should be continued until complete healing has occurred. The adjacent skin is to be kept clean and coated with 2 per cent. yellow mercuric oxid ointment. As with other closed wounds, Dakin's solution is not to be employed. In several of our early cases, union was prevented by its use.

Approximation stitches are removed on the third or fourth day. The patient should not use the part until it is soundly healed and no longer tender. The wounds are usually much less painful than those left open for Dakin treatment. Should a chronic bone sinus form after the operation, thus indicating a technical defect, the operation may be repeated, with the expectation of finding a simplified surgical problem.

Unless the surgeon can prevent the entrance of the zinc chlorid into the general circulation during and for five minutes after the injection, and unless he is able to excise freely all chlorided tissue adjacent to the important structures, he should not employ the method.

2033 Walnut Street.

Home Treatment by Quack Medicines.—If there is anything urgently required in the education of the populace at the present moment, it is that of emphasizing the evil of home treatment by quack medicines. By such practice, skilled advice is withheld and delayed in the beginning of disease, and irreparable harm is the result.—*Medical Press and Circular* 109:66 (Jan. 28) 1920.

GRANULOMA INGUINALE IN THE UNITED STATES

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WITH THE COLLABORATION OF

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Granuloma inguinale is a chronic ulcerative lesion of the inguinal region which may involve the external genitals, the perineum, the inner surface of the thigh, the anus, and, in the female, the vagina. According to one view, the infection is of venereal origin; in other quarters it is regarded as an independent disease. The ulcers persist for years, are serpiginous, and may involve extensive areas of skin in direct connection with or independent of the external genital apparatus. In most instances the process shows no tendency to spontaneous healing, although this method of cure is not unknown.



Fig. 1 (Case 1).—Appearance of the ulcer in granuloma inguinale, showing the irregularly serpiginous outline, the character of the scab and, where this is lost, the dense fibrous base.

As far as I have been able to learn, so-called granuloma inguinale has not hitherto been recognized as a lesion indigenous to the United States. On the other hand, it is endemic in many tropical countries and absent in others. Thus, in certain of the West Indian Islands it does not occur at all while in British Guiana it is widely prevalent. Moreover, it presents different aspects in different races. In negro peoples the manifestations are the most pronounced. When other races, as Indians, become infected in a country where most of the

sufferers are negroes, the lesion presents recognizable differences in the two nationalities in that the growth in the Indian is less coarsely granular in appearance and tends to remain localized, whereas in the negro it spreads extensively. In the Fiji Islands, the Melanesian immigrants are said to suffer from a disease which, although it resembles the ordinary form of granuloma inguinale, differs from it in that the lesions are softer, more prominent and spread by contact, so that multiple discrete growths arise. In addition, variations in severity depend on the part involved. Thus, growth and destruction are more rapid on mucous than cutaneous surfaces. Finally, there is a variety of granuloma inguinale attended by such marked obstruction to the lymphatics that it produces chronic edema of the vulva, penis or scrotum, resembling elephantiasis.¹

Since, in the tropics, there are many granulomatous formations about which little is known, it is impossible to state with certainty whether the several chronic ulcerative lesions occurring in the region of the

1. Daniels, in Allbutt and Rolleston: *System of Medicine* 2 (Part 2) 708, 1912.

roin and external genitals are manifestations of the same process, or anatomically related reactions arising in response to different causative agents, or the result of combined factors. However this may be, there is at least one variety of granuloma inguinale that has been frequently observed and whose clinical features appear to be much the same, no matter in what country they are seen. In this particular variety, cell inclusions were described by Donovan² in 1905 and have since been found in ulcerative lesions of the groin in widely remote parts of the world. These intracellular inclusions have been studied by Walker,³ who regards them as small encapsulated bacilli belonging to the Friedländer group. The evidence that they bear a direct causative relationship to granuloma inguinale, however, appears not to have been definitely established. On the other hand, it has been suggested that the presence of these intracellular bodies is due to secondary infection of venereal or other pudendal lesions and that, once established in the tissues, they dominate the local pathologic process and promote destruction of tissue. At Bellevue Hospital we have recently had occasion to study two chronic ulcerative lesions of the groin occurring in negroes. From the secretions in both cases, intracellular bodies morphologically identical with those described by Donovan were found. One of the cases appeared to represent a typical example of granuloma inguinale as encountered in the tropics. The other, however, was possibly syphilitic in nature.

REPORT OF CASES

CASE 1. — A negro man, aged 29, who was admitted to the Urological Service of Drs. Keyes and Jeck, by whom I was asked to see the patient, stated that he was a native of Georgia and that he had never been outside the United States. Two years previous to admission to Bellevue Hospital, a pustular lesion appeared on the head of the penis. This was soon followed by ulceration and sloughing, which finally involved the skin of the right inguinal region and the corresponding perineum and scrotum. The Wassermann reaction was negative with both the cholesterinized and the crude alcoholic antigens. The ulcerative area was serpiginous in outline and covered by an elevated, dirty brownish scab made up of innumerable nodular masses, many of which showed numbers of superimposed laminae (Fig. 1). Removal of the scab revealed a broad serpentine ulcer extending a few millimeters beneath the surrounding skin. The edges of the ulcer were rather sharply defined, and the base was composed of smooth, dense, light cream colored or whitish tissue which was bathed in thin, slightly cloudy fluid. The scrotum was edematous.

The occurrence in a negro of an extensive serpiginous ulcer of the inguinal region that had been present for two years immediately suggested that the disease belonged in the category of the tropical granulomas. Smears from the secretion,

stained by the method of Gram, confirmed this suspicion in that many of the polymorphonuclear leukocytes revealed intracellular bodies corresponding in all respects to those described by Donovan; that is, micro-organisms of coccoid, diplococcoid or short bacillus-like forms lying in a clearly defined area of vacuolation. In most of the cells these micro-organisms were arranged in clusters; occasionally they were solitary or grouped by twos and threes. In rare instances isolated forms were observed lying between the leukocytes. No capsules were demonstrable by special methods of staining.

A few days after these observations were made, Dr. Juan Iturbe of Caracas, Venezuela, saw the patient, and out of a broad clinical experience with the disease, confirmed the diagnosis of granuloma inguinale, at the same time concurring in the identification of the intracellular inclusions as indistinguishable from those familiarly encountered in the tropics.

A small portion of tissue was removed from the edge of the ulcerating area for microscopic examination. The stratified squamous epithelial covering at the edges of the ulcer was markedly thinned and the epithelial pegs were atrophic. The subepithelial connective tissues were extremely sclerotic and enclosed occasional collections of small round and plasma cells, together with groups of dilated ducts of sweat glands.

The patient died, but no necropsy was obtained.



Fig. 2 (Case 2).—Large ulcer of the head of the penis and of the tissues of the thigh just below the right groin, both ulcers covered by exuberant granulations.

CASE 2. — A negro, aged 26, admitted to Bellevue Hospital, Jan. 13, 1920, and discharged at his own request, February 26, was a native of Pennsylvania, and said that he had never been outside the United States. In February, 1916, he developed a sore on the penis, but no history of secondary symptoms of syphilis could be elicited from him. Two months after the appearance of the penile sore, a pimple appeared on the anterior part of the right thigh, just below the groin. Ulceration soon followed, and in the course of the next two months the lesion stretched completely across the anterior sur-

face of the thigh. The patient came to Bellevue Hospital and was treated by intravenous injections of arsphenamin, and the ulcer in the inguinal region healed. Shortly after he left the hospital, however, the scar broke down and the ulcer soon reached the same proportions as formerly. At the time of the patient's second admission, he presented an ulcerated area involving the head of the penis, together with a large ulcer on the front of the right thigh (Fig. 2). Both ulcers were covered by exuberant granulations. The epitrochlear lymph nodes on both sides were palpable, but otherwise there were no clinically detectable evidences of syphilis. The Wassermann reaction was negative with both antigens (icebox fixation).

The patient was given five intravenous injections of from 0.5 to 0.9 mg. of neo-arsphenamin, mercuric salicylate into the muscles and mixed treatment by mouth. The exuberant granulations in the ulcer on the thigh were curetted away, and at the end of six weeks healing was practically complete, while the ulcerated area on the head of the penis showed marked improvement. The patient left the hospital against advice.

At the time of admission, films were made from the secretions of the ulcers on the penis and thigh, and from both places showed gram-negative inclusions lying in large mononuclear cells and presenting identical morphology with those found in the first case, although not in the same number of cells

2. Donovan: Indian M. Gaz. 39: 414, 1905.

3. Walker, E. L.: J. Med. Res. 37: 427 (Jan.) 1918.

(Fig. 3). When found, however, they were not to be distinguished from the Donovan bodies of granuloma inguinale, and occurred in the cells either singly or in small groups, occasionally in such large numbers that they could not be counted.

At operation, the curettings were received into sterile dishes, brought to the laboratory, and the tissues were crushed by platinum tipped forceps and emulsified in sterile salt solution. Material from this emulsion was streaked successively on plates of plain agar, blood agar, dextrose and ascitic agar and North's medium, and inoculated in dextrose broth; and although various contaminants were found, no micro-organisms corresponding to any known pathogenic form were grown, nor was any prevailing or constant growth to be recognized in the cultures. Anaerobic cultures were likewise negative. Before operation, bouillon cultures from the ulcer on the thigh yielded similar results. Since *Bacillus mucosus-capsulatus* is readily cultivated by these methods, we assume that the micro-organism obtained by Walker and so identified by him in cultures from granuloma inguinale was probably not present in this case, although in films from the secretions in both cases apparently identical intracellular bodies were found. In other words, the identity of these bodies seems still to remain doubtful, in spite of Walker's valuable work.

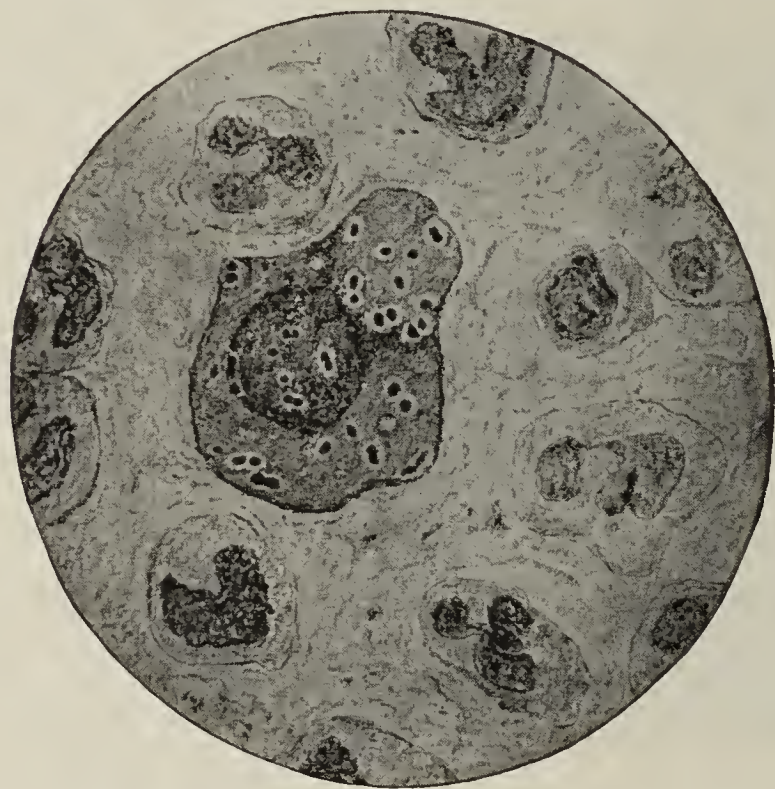


Fig. 3 (Case 2).—Pen and pencil sketch of film from secretions of ulcer: At the center is a large mononuclear phagocytic cell enclosing numbers of coccoid, diplococci or short bacillus-like parasites, each lying in a clear zone of vacuolation (Donovan bodies), and in other parts of the field are polymorphonuclear leukocytes.

Guinea-pigs were inoculated intraperitoneally and rabbits intracutaneously with the emulsion of tissue removed at operation without the slightest evidence of reaction. Microscopic examination of the tissue taken from the patient's thigh showed, at the periphery of the ulcer, a markedly hyperplastic superficial layer of stratified squamous epithelium, beneath which were granulations associated with small round cells and numbers of eosinophils.

COMMENT

Whether or not our second case is to be classified with tropical granuloma inguinale is uncertain. Syphilis and the secondary invasion and phagocytosis of Donovan bodies cannot be denied. It remains, however, for subsequent investigation to show whether these bodies are or are not to be found in ulcerative lesions of different kinds, particularly in the region of the genitals, where it is possible that an open wound and local conditions of heat, moisture, etc., invite the entrance and multiplication of invaders whose presence promotes ulceration and prevents healing. Among

physicians in the tropics, granuloma inguinale is usually accepted as a disease in which these bodies play an important rôle, and the intravenous use of tartar emetic is said to be curative.⁴ It is also said that the same drug is advantageously to be employed in the treatment of such parasitic diseases as bilharziasis, filariasis and leishmaniasis. That the lesions in our second case responded favorably to intensive anti-syphilitic treatment suggests but does not prove the syphilitic nature of the original lesion. On the other hand, it raises the question whether arsenic compounds, if pushed, may not act as effectually in granuloma inguinale as those of antimony, since the two metals belong in the same group, and their physiologic action is in many respects similar. Whatever the intracellular bodies may be, their constant occurrence in certain groin ulcerations in different parts of the world must be of some significance as either initiating or promoting destruction of tissue. Our experience at Bellevue Hospital would appear to establish the fact that lesions similar to or identical with those of granuloma inguinale, as it is seen in the tropics, associated with morphologically indistinguishable intracellular parasitic inclusions, are occasionally to be found in American negroes who have never been exposed to the vicissitudes of tropical life—in short, that the disease is indigenous to the United States.

THE TRIPOD METHOD OF WALKING WITH CRUTCHES

AS APPLICABLE TO PATIENTS WITH COMPLETE
PARALYSIS OF THE LOWER EXTREMITIES

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Complete paralysis of both lower extremities is not necessarily a bar to some form of ambulatory activity. This has been repeatedly demonstrated in infantile paralysis, and the same generalization can be extended to similar flaccid paralyses resulting from fracture of the spine or gunshot wounds of the spinal cord. As the latter class of cases has been called to our notice by the war, a consideration of how these patients also may be taught to walk is one object of this paper.

If a cadaver is stood upright on its feet, the knees flex and the body crumples down on the floor. If the knees are held rigid by the application of splints to hold the knees extended, and if the cadaver is steadied in the upright position by the pelvis, the trunk falls forward. Exactly the same thing happens to a patient with flaccid paralysis below the waist. If the knees are prevented from flexing by splints, the erect position can be maintained without crutches only if the gluteus maximus muscles are strong enough to hold the trunk from falling forward, that is, if they can hold the trunk extended on the legs. The two muscles most necessary to maintain the erect position are the quadriceps extensor femoris and the gluteus maximus.

It has been found, in aiding patients with such a distribution of paralysis to walk, that if the knees are kept from flexing by simple splints, the loss of the gluteus maximus can be compensated for by a peculiar method of using the crutches for what may be called "tripod" walking. If the crutches are placed apart

4. Aragão and Vianna: *Memorias do Instituto Oswaldo Cruz* 5: 211, 1913.

and slanted well forward at their lower ends, they form the two anterior points of a tripod, while the third and posterior part of the tripod is formed by the body of the patient inclined forward at its upper part, with the feet well behind. The apex of the tripod thus comes at the shoulder level of the patient, his body and legs forming the posterior support of the tripod, and the crutches the two anterior supports. Such a position is stable because (a) the base of support is a large triangle bounded by the three points of support of the tripod, and (b) the body is stable in the over-extended position because hyperextension of the hips is checked by the "Y" ligament of Bigelow, and, with the knees stiffened by the braces, the center of gravity falls in front of the hip joints and keeps them extended and firm. A paralyzed patient with no power below the waist can stand unsupported easily in this position, provided there are no contraction deformities in hip, knee or ankle.

The patient must next be taught confidence in this position. If he has been long confined to his bed or chair he will in large measure have lost his sense of upright equilibrium, which must be dealt with by itself and restored by repeated practice in standing on crutches with support near at hand, or by standing with both hands resting on the foot rail of the bed. When he has sufficiently acquired the sense of balance to have self-confidence, he should begin on progression. This is accomplished by hitching one crutch a few inches forward, then the other crutch, and then, in cases of complete flaccid paralysis, jerking the feet forward together a few inches by a body movement, bearing down with the hands on the crutch bars and sliding the feet over the floor. If any degree of power remains in the iliopsoas muscles, which is often the case when the gluteus maximus and all muscles below it are paralyzed, the feet can be more easily advanced one at a time, only those patients affected very severely having to slide along both together. Most patients without any power in the hip flexors are able to accomplish this advancing one foot at a time by a twisting of the body.

The one essential in bad cases is that the tripod should have a large base, and the body be sufficiently inclined forward to keep the center of gravity in front of the hips. If it falls behind them the patient will double up backward like a jack-knife on account of flexion of the hips.

For holding the knees extended one uses the Thomas caliper splint, the simplest, lightest and best of all such apparatus. Two uprights, one outside and one inside of the leg, pass from the shoe to just below the gluteal fold. They are shaped to the leg, and at the bottom each is bent to a right angle. The bent parts of

the upright slip into a tube in the heel of the shoe. At the top the uprights are fastened to a posterior, flat, curved band passing just below the gluteal fold, and a fenestrated knee cap of leather holds the knee extended. The splints can be jointed at the knees for greater comfort in sitting, but the joint must be provided with an automatic drop catch which locks when the knee is extended. The use of a pelvic band on the braces rests on no anatomic or mechanical basis and is never necessary.

If much abdominal weakness is present, a cloth corset is advisable to support the abdomen and give greater steadiness.

In flaccid paralysis of the lower extremities it is a fact that any patient of average intelligence, with one good arm and one arm good enough to hold a crutch, can be made to walk, provided deformities of the hip, knee and ankle are not present, or have been corrected. This walking in some cases may be a very imperfect affair, and is of course wholly dependent on apparatus; but it is better than spending one's life in a wheel chair, and many patients with apparently no power of any consequence develop a surprising amount of usefulness.

REPORT OF CASES

CASE 1.—*Poliomyelitis*.—A woman, aged 29, paralyzed by poliomyelitis in the summer of 1916, was very helpless. In February, 1917, she was furnished with caliper braces and a cloth corset, and her routine in July, 1918, is shown in the following memorandum furnished by her:

"Gets out of bed into chair alone. Gets in and out of bath and dresses without help. Often dresses and gives 3-year-old boy his bath. Also once in a while washes old English sheep dog. Can make beds, dust, etc. Gets downstairs by sitting down on steps, then into chair downstairs without help. Goes into kitchen almost every day and does some cooking. Has done canning and put up preserves and jellies. Has often washed and ironed. Also cleans silver every week. Can get out on porch and out of doors in wheel chair over a little

runway. Has raked and watered the garden a little and planted seeds. Has Red Cross meeting every week and cuts and sews. Can get into almost any chair alone from wheel chair. Goes automobiling a good deal, but has to be helped into machine. Has been away week ends, taking small wheel chair into machine. Walks every day in the house and out of doors a great deal on the grass. Does daily exercises and has frequent massage. Is steadily improving."

CASE 2.—*Poliomyelitis*.—A man, aged 40 was paralyzed by poliomyelitis in 1908, and up to July, 1917, had never walked, having spent the intervening years in a wheel chair. His paralysis was practically total from the waist down, with involvement of the abdomen and some of the erector spinae muscles. Braces and corsets were applied in November, 1917. In December of that year he wrote: "Friday I walked probably 20 feet, turning around twice. . . . I find that I can walk in the natural way, that is move one foot and one crutch, and then the other foot and the other



Position necessary in tripod walking (Case 5).

crutch." In March and April, 1919, he wrote: "I am now able to get out of my chair without help and get back in the same way. I back the chair against the wall, turn a little on my side, and get on my feet holding on the arm. Then I can straighten up, take my crutches and go on. . . . Have been over three steps with the help of a banister, and can get in and out of an automobile by myself." Subsequently he informed me that he had attended a large dinner at one of the hotels, going in an automobile, taking his crutches, and walking into the hotel across the lobby to the elevator, and in to dinner.

CASE 3.—Poliomyelitis.—A boy, aged 11 years, was referred by Dr. Henry Ettinger of New York, and was seen in April, 1917. He had suffered from poliomyelitis in 1911, and was unable to stand or walk for some years on account of a flexion deformity of both hips, holding them at right angles to the body. There existed total paralysis of both legs, including the gluteus muscles, but some degree of hip flexor power persisted, probably in the psoas muscles, which was the cause of the deformity. Abdominal paralysis was nearly complete, and there was weakness of the back muscles. The legs were brought into line with the body by operation (Soutter fasciotomy) in April, 1917, and by September the boy could walk in the manner described. He can now walk indefinitely on the level with braces, crutches and a corset, but cannot go up or down stairs on his crutches without assistance.

CASE 4.—Fracture of the spine.—A girl, aged 19, referred by Drs. Scott, Sherwood and Brindley, of Temple, Texas, had been injured in an automobile accident in August, 1916, and immediately lost all power in both lower extremities, and sensation from the knees down, the loss extending up on the left thigh. She had a deformity in the dorsolumbar region, and the roentgen ray revealed a fracture of the twelfth dorsal vertebra, with some side displacement. Laminectomy was performed three days later, and a ridge of bone was found compressing the cord. The ridge was cut away, but there was no improvement immediately following the operation, and retention of urine persisted for over a year. At the end of a year she was still unable to control the bowels.

The patient was seen by me in July, 1918, and at this time she had a well marked kyphos at the seat of fracture, the functions of the bladder and rectum were nearly normal, sensation was normal to a point 2 inches below the knee on both sides, knee jerks were lost, and ankle clonus was absent. There was practically no motion in the lower extremities, but there was some slight power left in the hip muscles. The girl had never stood or walked since the accident.

She was equipped with braces and a corset, and in a month was walking without assistance. In January, 1919, she wrote: "I am walking with my crutches every day, and gaining strength all the time. With the crutches I am most confident."

CASE 5.—Fracture of the spine.—A girl, aged 11 years, was referred by Dr. C. S. Buchanan of Bennington, Vt., and admitted to the Children's Hospital in February, 1920. In June, 1919, she had fallen out of a tree and sustained a compression fracture of the eleventh dorsal vertebra, which was very evident in the roentgenogram taken at the time of her admission to the hospital. Sensation and motion were immediately lost below the level of the injury, and paralysis of the bladder and rectum was present. A laminectomy had been immediately performed, but it was followed by no improvement, and she had been helpless, so far as getting about was concerned. Power in the legs was entirely absent; there was a trace of power in the muscles of the hips, but not enough to move the limbs. Sensation was wholly absent below the level of the injury. At the time of her admission to the hospital, function of the bladder and rectum had returned, but there was a considerable kyphos in the lower dorsal region.

She was fitted with caliper braces and taught to use the crutches in the tripod fashion. In March, 1920, she was able to walk the length of the hospital corridors, and could get up and down from her wheel chair without assistance by taking hold of the bottom of the bed. She developed a pressure sore which lasted for a few days on one of the toes from too much walking, which is a warning of how careful one

must be in regard to pressure from brace or shoe in cases with total abolition of sensation.

COMMENT

These cases have been selected from a fairly large number of similar ones, as they were obviously severe and some of them of fairly long standing.

They show that persons with very low grades of power in the legs, hips, abdomen and back can be taught to walk, to get up and down from a chair, and many to go up and down stairs. The two latter achievements constitute the difference between independence and dependence in the life of the affected person.

CONCLUSION

It need only be repeated that any intelligent patient with flaccid paralysis below the waist, with one good arm and one arm good enough to hold a crutch, can be taught to walk by the tripod method, and to get up and down out of a chair unaided, provided contraction deformities are not present, or have been removed by operation.

234 Marlborough Street.

MECKEL'S DIVERTICULUM

REPORT OF CASE

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Owing to the rarity of its pathologic lesions, Meckel's diverticulum presents an interesting study. The case here reported, although terminating fatally,



Fig. 1.—Appearance of Meckel's diverticulum when abdomen was first opened. The diverticulum is protruding up through distended intestine.

offers an unusual feature which makes it worthy of consideration.

Meckel's diverticulum is an occasional sacculaton, cecal appendage or tubé of the ileum, produced when the intra-embryonic segment of the vitelline duct fails to close. This closure should occur normally about the fifth week of fetal life.

Historically this condition was first described by Rysch, an anatomist, but it was not until 1808 that

Meckel gave to the scientific world an accurate and minute account of this abnormality. He showed that the diverticulum existed either as a free blind pouch

appendix. Like the appendix, therefore, in the closed type of diverticulum it is subject to ulceration, catarrh, perforations and gangrenous inflammation, and often it is a haven for foreign bodies. Apple seeds, grape seeds, cherry stones, fish bones and, in one instance, a Murphy button have been reported found in its lumen.

Either the pouch or band form of diverticulum offers opportunity and possibility for bowel obstruction. In the band form the intestine becomes twisted about, or strangulated by the band in much the same manner that it does in some forms of post-operative adhesions. In the pouch form, there is possibility of the diverticulum's invaginating itself into the intestinal lumen, producing a certain degree of obstruction with ultimate intussusception. On the other hand, as in the case here reported, the free diverticulum may tie a knot about itself, including a loop of intestine.

Owing to its rarity and its similarity to both acute appendicitis and intestinal obstruction, the differential diagnosis of a pathologic condition of Meckel's diverticulum is not usually made until the abdomen is opened.

The treatment of uncomplicated diverticulum is similar to the surgery of the appendix. The diverticulum is resected and the stump inverted into the ileum.

as a tube attached to the anterior abdominal parietes, generally at the umbilicus. This tube may be closed or open; and when open, it forms the so-called congenital fistula, discharging fecal material through the umbilicus. The blind pouch diverticulum varies in length from 1 to 25 cm. and is usually located on the free border of the intestine between 4 and 10 cm. from the ileocecal valve. Structurally, being a part of the alimentary unit, the diverticulum is composed of four coats similar to the intestine, namely, serous, subserous, muscular and mucous.

As Meckel's diverticulum is a developmental defect derived from an unobliterated vitelline duct, it presents some statistical facts of interest. The condition is seen in only 2 per cent. of human beings, and in this 2 per cent., few come to the attention of the surgeon, for, unless they are complicated by a pathologic condition or discovered by accident at abdominal section, their presence is never known. In the last four years only fifteen cases of diverticulum out of 10,600 laparotomies performed at the Mayo Clinic during a period of three years. Pathologic complications of the diverticulum are more commonly seen during active middle life, and they occur in males more frequently than in females. Out of a collected series of 30 cases, Keen reports its occurrence in 20 males to thirty females.

Uncomplicated Meckel's diverticulum, unless it is a congenital fistula, produces no symptoms. As the diverticulum is an intimate part of the small intestine, it is subject to the various pathologic lesions seen in the ileum and the acute inflammations similar to those of its neighbor, the

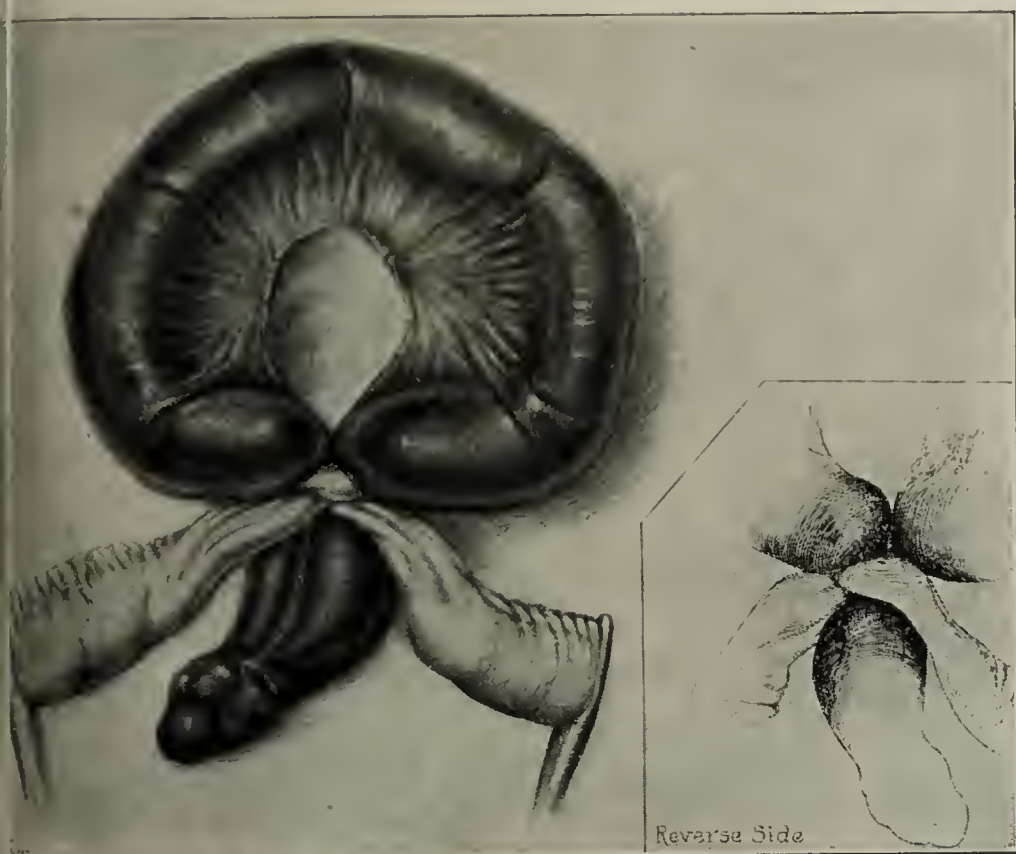


Fig. 2.—Strangulated intestine and Meckel's diverticulum after resection.

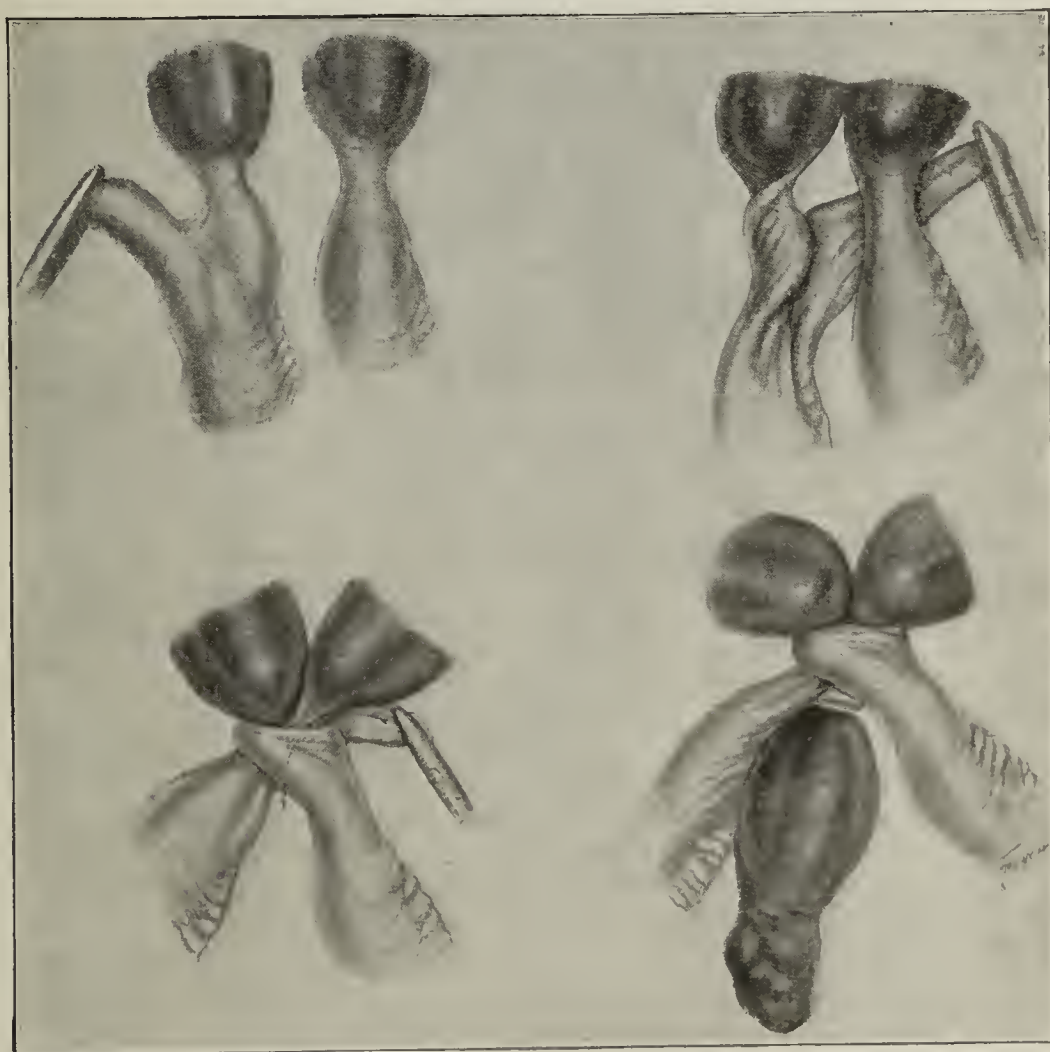


Fig. 3.—Diagrammatic representation of successive steps in knot tied by diverticulum around loop of intestine.

In the event of a pathologic complication involving Meckel's diverticulum, the surgeon may be confronted by extremely serious conditions.

REPORT OF CASE

History.—F. J., aged 26, white, married, private, Company G, engineers, whose mother, father, five brothers and four sisters were living and well, had a negative history except for a severe burn on the left side of the face in childhood, had always been well, and denied any previous abdominal trouble. The present illness began suddenly at 10 p. m., April 4, 1918. The patient was walking home, after having taken a cup of coffee and a piece of toast, when he experienced a sudden cramplike pain in the lower right quadrant of the abdomen. The pain was so severe that he had to be taken to his station at the Washington Barracks, Washington, D. C. He vomited continually throughout the entire night, and suffered constant and severe abdominal pain. Next morning he was transferred by ambulance to the Walter Reed General Hospital, where he was seen at noon, fourteen hours after the onset of the attack.

Physical Examination.—The patient weighed 130 pounds. His facial expression was extremely anxious, pinched and exhausted. His general appearance was very bad and gave every evidence of a severe intra-abdominal complication. There was notable general rigidity of the abdominal wall,



Fig. 4.—Photograph of gangrenous mass, intestine and diverticulum.

with the rigidity somewhat accentuated over the lower right quadrant. Tenderness was also general, but more marked over McBurney's point. No abdominal mass was palpable. A tentative diagnosis of ruptured appendix was made and immediate operation urged.

Operation and Result.—Through a right rectus incision the abdomen was opened, when a large amount of bloody, foul, fecal smelling peritoneal fluid escaped. A dark gangrenous mass 4 inches long and 1 inch in diameter protruded through distended coils of intestine. Careful separation of the loops of intestine and a following of the mass to its base revealed that it led to a long coil of gangrenous intestine. When this green gangrenous mass of strangulated intestine was liberated there was a marked odor of colon. A diagnosis of Meckel's diverticulum with strangulation and bowel obstruction was evident.

The mesentery of the strangulated intestine was involved down to its postperitoneal attachment, making resection very difficult. The mass, however, was excised and an end to end suture anastomosis was done. To determine the size of the opening at the point of anastomosis, the bowel was inverted by the index finger at the point of union. The lumen seemed amply large. The abdomen was drained and closed in layers. The patient, although shocked, left the table in fair shape considering his previous condition.

April 6, twenty-four hours after operation, the patient's general condition was unquestionably better. On this day he passed a fair quantity of gas but no fecal matter. April 7, he continued to pass gas, but there was some distention. April 8, there was marked distention with signs of obstruction. He began vomiting, and operation seemed imperative. Under local anesthesia an enterostomy was performed, at which time 2 quarts of fecal matter were evacuated. His condition continued very grave, and on April 9 he was given 500 c.c. of blood. Although temporarily improved by this he died at 9 p. m.

Necropsy.—The enterostomy opening was found 145 cm. from the cecum. Above the enterostomy the small intestine was distended with gas and fecal matter. The end-to-end anastomosis was found 40 cm. from the cecum. At the point of anastomosis there was an indurated mass obstructing the bowel. There was no evidence of leakage from the bowel into the peritoneal cavity.

COMMENT

The case presents an unusual pathologic lesion of Meckel's diverticulum. As is shown in the illustrations, the diverticulum had tied itself into a complete knot, around the base of, and strangulating a coil of intestine about 2 feet in length. In order to untie this knot the diverticulum had to be cut near its base and the path of the tie of the diverticulum retraced by means of a hemostat. Mr. W. H. French, the artist, was present at the operation, and very kindly made an accurate drawing illustrating the picture presented at operation as well as the manner in which the diverticulum was tied.

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THE CATALASE CONTENT OF THE
CEREBROSPINAL FLUID*

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AND

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The presence of catalases in the cerebrospinal fluid is still more or less of an open question. Barbieri concluded that no catalases are to be found in the fluid—a conclusion to be expected from the method he employed, as all his results are from fluids subjected to prolonged centrifugalization followed by the withdrawal and testing of the supernatant fluid. It has already been shown,² that the blood serum contains no catalase when fully freed from corpuscles. Thus, a similar result is to be expected from the liquid portion of the cerebrospinal fluid.

METHOD AND RESULTS

In this work the apparatus described by one of us was employed.³ The peroxid used was the ordinary commercial 3 per cent. solution, acid in reaction and with acetanilid added as a preservative. The solution was neutralized immediately before the test by the addition of the required amount, 1.5 c.c. of half normal sodium hydroxid; one c.c. of fluid and 25 c.c. of hydro-

* From the Sarah Morris Hospital for Children and the Department of Physiology and Pharmacology, Northwestern University Medical School.

1. Barbieri: Chemische und biochemische Untersuchungen über das Nervensystem; Untersuchungen über die Katalase im Liquor cerebrospinalis, *Biochem. Ztschr.* **42**: 137, 1912.

2. Jolles: Beiträge zur Kenntnis der Blutfermente, München. med. Wehnschr. **51**: 2083, 1914. Jolles and Oppenheim: Beiträge zur Kenntnis der Blutfermente, *Virchows Arch. f. path. Anat.* **180**: 18, 1905.

3. Becht: Observations on the Catalytic Power of Blood and Solid Tissue, *Am. J. Physiol.* **48**: 171, 1919.

peroxid were used in each test. The bottles were shaken for ten minutes in each case. Because of the small amounts of oxygen released, no correction was made for temperature and pressure. Most of the tests were run in duplicate only, on account of the difficulty in securing enough fluid. It was impossible to make cell counts in all cases.

The results of our experiments are given in the accompanying tables.

Table 1 shows the findings in eight fluids secured in nonmeningitic cases. In no case was more than 0.1 c.c. of oxygen generated and, therefore, it is evident that in nonmeningitic cases, in which the number of cells is small, the catalytic power of the fluid is negligible.

Table 2 shows the findings in three cases of tuberculous meningitis and one case of anterior poliomyelitis.

In two cases the amount of oxygen released was greater than in nonmeningitic cases, and in two cases it was comparable to the amounts released in the fluid of Table 1.

Table 3 shows the findings in ten observations on suppurative meningitis. In general, the results here show an increased amount of oxygen released from hydrogen peroxid by the action of the fluid. The increase is by no means parallel with the number of cells, but a fluid with a large number of cells is usually found with a relatively high catalytic power. The

TABLE 1.—FINDINGS IN NONMENINGITIC FLUID

Name	Diagnosis	Date	Interval	Reading	Cells per C.mm. at Time of Catalase Determination	Other Tests
C.	Chorea	10/17	½ hr.	0, 0	4	0
F.	Microcephalus	11/14	½ hr.	0, 0	4	0
W.	Meningism	11/11	2 days	2, 2	2	Globulin slightly positive
B.	Normal	11/11	2 days	3, 2, 2	4	0
L.	Scarlet fever and diphtheria	11/22	4 days	5, 5	0	0
E.	Epilepsy	10/28	1½ hrs.	2, 2, 2	1	0
S.	Brain tumor	12/ 1	1 hr.	4, 4, 4, 4	50 lymphocytes	0
R.	Cerebral hemorrhage	11/20	19 hrs.	2, 2	2	Globulin positive

TABLE 2.—FINDINGS IN TUBERCULOUS MENINGITIS AND POLIOMYELITIS

Name	Diagnosis	Date	Interval	Reading	Cells per C.mm. at Time of Catalase Determination	Other Tests
M.	Tuberculous meningitis	11/22	5 hrs.	9, 11	800 cells, 80% lymphocytes	Tubercle bacilli in fluid
J.	Poliomyelitis	10/30	7 days in ice box	6, 6	13 cells	Chemical tests positive
B.	Tuberculous meningitis	12/11	5 days	0, 0	No cells now; 110 lymphocytes immedately after removal from body	Tubercle bacilli found in fluid; globulin positive
B.	Tuberculous meningitis	12/11	2½ days	3, 2	4 red cells, no white cells	Tubercle bacilli in fluid

pellicle when added to a test markedly increased the amount of oxygen released. Fluid that gave a fairly high catalase reading directly after the fluid was removed from the body gave a lower reading if examined after the fluid had been standing. This shows that the catalase depends on the presence of leukocytes, and varies directly with the number of leukocytes present in the fluid. Since leukocytes generate on standing, the catalase reading becomes lower.

PRACTICAL VALUE OF THE CATALASE TEST

While the presence of catalase indicates the presence of many cells or of a coagulum in the fluid, we see no advantage in the catalase examination for practical purposes. The cell count done immediately after withdrawal of the fluid from the body will give more accurate information without necessitating the use of complicated apparatus.

TABLE 3.—FINDINGS IN SUPPURATIVE MENINGITIS

Name	Diagnosis	Date	Interval	Reading	Cells at Time of Catalase Determination	Other Tests
E. L.	Meningococcus meningitis	11/11	½ hr.	14, 14	5,544 per c.mm. 90% polymorpho-nuclears	All bacteriologic and chemical tests positive
L.	Meningococcus meningitis	10/30	4 days in ice box	6, 7	10 per c.mm.	All bacteriologic and chemical tests positive
L.	Meningococcus meningitis after 90 c.c. serum	10/30	1 hr. at room temp.	20, 21	26 per c.mm.	Very high protein content; all other tests positive
P. M.	Meningococcus meningitis	11/12	2 days	12, 12	.....	All tests positive
R.	Meningococcus meningitis after 30 c.c. serum	10/30	5 days in ice box	19, 18	.....	All tests positive
C. U.	Chronic basilar meningitis	10/20	4 hrs.	7, 7	100 per c.mm.	All tests positive
L. C.	Meningococcus meningitis	10/17	19 days	6, 5, 6	.....	All tests positive
J. S.	Meningococcus meningitis before serum	12/11	4 days	4, 5	No white cells	All tests positive
R. T.	Streptococcus meningitis	12/28	24 hrs.	20, 20, 38*	2,000	Streptococcus in direct smear in great numbers; all tests positive
R. T.	Streptococcus meningitis	12/28	3½ hrs.	40, 35, 65*	960	Streptococcus in great numbers; all tests positive

* The pellicle was included in these tests.

CONCLUSIONS

The catalytic power of the fluid is determined by the number of cells or coagulum present, thus, perfectly normal fluid free from cells and coagulum contains no catalase.

The catalase test as applied to cerebrospinal fluid is of no practical value.

THE ROENTGEN-RAY TREATMENT OF VERRUCA PLANTARIS

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AND

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Search of the literature at our disposal has failed to reveal anything more than a casual reference to the roentgen-ray treatment of that most stubborn of all warts, the plantar variety. Sutton¹ speaks of it in connection with the use of carbon dioxide snow, and mentions it without giving technic or results. Shultz² speaks of it briefly in the same way. We can find no case reports showing actual results, the amount of treatment required, and the technic used. Our own

1. Sutton, R. L.: Am. J. M. Sc. **144**: 71 (July) 1912; An Extensive Case of Plantar Warts, J. A. M. A. **62**: 1320 (April 25) 1914.

2. Shultz: X-Ray Treatment of Skin Diseases, New York, Rebman Company, p. 145.

results have been so uniformly good that we present them with our technic.

We have records of sixteen private cases treated by the roentgen ray. All received the same general plan of treatment, individual cases requiring different amounts, as shown in the table. We are unable to assign any reason for this difference in response to treatment of lesions which are very similar in size, nature and duration. Some of those of longest duration responded most quickly to treatment, and neither size nor location appeared to play any part. Another peculiarity noted was that almost invariably the pain disappeared in from two to four days after the first treatment. Why this should be we cannot say, unless it is due to an action on the nerve terminals analogous to the action of the roentgen ray in pruritis. Since pressure, the cause of the pain, is in no way affected at this early stage, we can offer no other explanation.

Our technic is to give $1\frac{1}{3}$ Holzknecht skin units every three to four weeks. We estimate our dosage according to the method long advocated by MacKee,³ and recently described by him. In our work we use a

RECORDS OF SIXTEEN CASES TREATED BY
ROENTGEN RAY

Case No.	No. of Warts	No. of Treatments	Total H Skin Units	Result
1	1	3	4	Cured
2	1	2	2½	Cured
3	4	3	4	Cured
4	5	7	9	Not benefited*
5	1	3	4	Cured
6	1	2	2½	Cured
7	1	4	5½	Cured
8	1	3	4	Cured
9	6	3	4	Cured
10	1	1	1½	Cured
11	1	2	2½	Cured
12	1	2	4	Cured
13	4	4	5½	Cured
14	1	7	9	Cured†
15	20	3	4	Cured
16	1	2	2½	Cured

* In case 4 there were flat warts, a variety notorious for its resistance to roentgen-ray treatment, no matter where located.

† The patient in case 14 discontinued treatment before being cured and then had a recurrence which required a second course of treatments, thus accounting for the large number of units required.

7½ inch spark gap, 9 inches focal skin distance, 4 milliamperes, and one minute, ten seconds to obtain 1 H. When the lesion has disappeared we usually give an additional treatment to be sure of a complete cure. Hence many of those, who, as shown in the table, received two or more treatments, would have required one less had we given the minimum. It should be noted that we use no filter in this work, as we feel that on superficial lesions results are much better with the unfiltered ray.

The cure seems to be permanent. Some of our patients have been followed for five or six years, and have had no recurrence. On the basis of such results as these we have abandoned all other forms of treatment, using the roentgen ray alone, and quite confidently give a favorable prognosis. As the table shows, only one case, and that not the ordinary variety of plantar wart, has failed to respond true to form.

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3. MacKee, G. M.: *Am. J. Roentgenol.* 6: 602 (Dec.) 1919.

Differential Diagnosis.—In acute perforation the patient lies still, fearing to breathe; in gallstone colic he rolls about with pain.—Sir D'Arcy Power, *Surgical Aphorisms*, *Clin. J.* 49:28 (Feb.) 1920.

SIGNIFICANCE OF THE DIFFERENT TYPES OF PNEUMONIA FOLLOWING INFLUENZA

A THERAPEUTIC INDICATION

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In a study of the pulmonary lesions following influenza, the impression was gained that an associated pulmonary edema is a factor of great importance determining the rapid extension of the inflammation

TABLE 1.—NUMBER OF LOBES INVOLVED

Lobes	Cases
1.	6
2.	15
3.	25
4.	33
5.	75
Total	154

throughout the lung, and that in the absence of the edema, the lesion remains localized about the bronchial branches.

The observations recorded in this paper were made during the epidemic of influenza in the American Expeditionary Force hospital center at Bazoilles-Vosges, France, between Sept. 2 and Dec. 27, 1918.

About 200 patients died there with pneumonia following influenza, and of these, 154 came to necropsy. In all cases there was a tracheitis and bronchitis. The most striking lesion, however, was observed in the lungs. In the vast majority (86 per cent.), the consolidation was widespread, involving three or more lobes; in one half of the cases all five lobes were affected.

Table 1 shows the extent of the pulmonary involvement in the series.

The pulmonary consolidation in these cases varied in character; discrete lesions in some cases contrasted sharply with confluent consolidation in others. The discrete lesions were peribronchial and peribronchiolar; the confluent lesions were coalescing lobular

TABLE 2.—INCIDENCE OF DISCRETE, CONFLUENT AND COMBINED CONSOLIDATION

Type	Short, 1 Week or Less	Duration Moderate, From 1 to 2 Weeks	Long, Over 2 Weeks	Total Cases
Peribronchial and Peribronchiolar	2	7	11	20
Coalescing Lobular	14	36	14	64
Combined Peribronchial, Peribronchiolar and coalescing lobular	10	33	27	70

type. A considerable number of the cases showed both discrete and confluent consolidation.

Table 2 shows the incidence of the three types.

In peribronchial and peribronchiolar pneumonia the lung was quantitatively much less involved than in the other types, and this may explain the longer average duration of the disease and the smaller percentage of fatal cases of discrete pneumonia, as compared with the confluent pneumonias.

DESCRIPTION OF PULMONARY LESIONS

In the coalescing lobular pneumonia of short duration, the involved lobes are more voluminous than normally. They are heavy, soggy and solid. Excised

ons, when placed in water, settle down or sub-
e, but do not sink to the bottom of the container.
ection of an involved lobe, a considerable portion,
lly the posterior, or the entire lobe, is found con-
ated; the surface is smooth, moist and dark red.
the cut surface a considerable amount of bloody
exudes from the air spaces. The picture is that
ngestion, edema, hemorrhage and consolidation of
e lobules or portions of these, with extensive
escence of the inflammatory process. Scattered
ughout the involved areas, there are seen lobules
groups of relatively little affected alveoli. The
e is rubbery rather than friable, and is quite
compressible.

In the coalescing lobular pneumonia of moderate
ation, the involved lobes are more voluminous than
normally; they are heavy and solid. Excised portions,
n placed in water, submerge or sink to the bottom
the container. On section of an involved lobe, a
siderable portion, usually the posterior, or the
re lobe is found consolidated; the surface is some-
t moist, finely granular and grayish red or gray.
coalescence of the inflammatory process is more
king than in the lesions of shorter duration, and
gests lobar consolidation. It differs from the hep-
ation in lobar pneumonia in that the cut surface
the involved lobe is less coarsely granular, the tissue
h less friable and more compressible.

In the cases of long duration, the lesions vary. In
e, the general features are similar to those
cribed in the foregoing. In these old cases, how-
er, the cut surface is coarsely granular and the tissue
e friable.

In others, the surface is pasty and the tissue is easily
pressed, causing an exudation of moist, viscid
d. There are also cases in which resolution is fur-
advanced with scattered areas of pasty consolida-
only about the bronchial branches. In the cases
longest duration, small or large portions are firm,
yish, somewhat translucent, and traversed by gray
cks and strands.

In the peribronchial and peribronchiolar pneumonia,
involved lobes are more voluminous than normally.
ey are cushiony and solid, or cushiony, soggy
solid. On section a considerable amount of rela-
ely uninvolved tissue is seen; the consolidation is
alized about the bronchial branches, and extends
m a few millimeters to several centimeters from the
en. In this type, the oldest lesions are frequently
n near the hilum of the lobe.

The discrete consolidation varies in appearance,
ending on the duration, and shows changes com-
table to those described in the confluent pneumonia.
differs, however, in that in cases of short and
derate duration, the consolidated tissue is much less
ist than that of the type described above.

In the combined peribronchial, peribronchiolar and
lescing lobular pneumonia, the involved lobes show
ombination of the changes described in the discrete
l confluent pneumonias.

In over one half of the cases there was an asso-
ted pleurisy, usually slight. Not infrequently, a
minal edema was noted in cases of each type.

These cases were studied bacteriologically by Dr.
C. Curtis. Pneumococci, *Bacillus influenzae*, and
Staphylococcus catarrhalis were recovered in about the
ne percentage in the three types. In all cases the

myocardium showed parenchymatous changes, and in
the majority, dilatation of the right heart was observed
postmortem.

COMMENT

From the observations noted in the foregoing, it
would seem that in some cases following a tracheitis
and bronchitis, pulmonary congestion and edema
occur, and the inflammatory process extends from the
bronchi throughout the edematous lung, producing the
widespread coalescing lobular consolidation.

In other cases following the tracheitis and bron-
chitis, there is little if any pulmonary edema, and the
inflammatory process extends only a small distance
beyond the bronchial branches, producing a discrete
peribronchial and peribronchiolar consolidation.

There is a third type of cases in which the tracheitis
and bronchitis is followed by an extension of the
inflammatory process about the bronchial branches;
and following this discrete pneumonia, there is exten-
sive pulmonary congestion and edema with extension
of the process from about the bronchial branches
throughout the lobe, producing a coalescing lobular
consolidation.

A detailed histologic report of the lesions will be
given later, but at this time it may be stated that
histologically the sections corroborate the impression
of extension of the inflammation through edematous
lung in cases of coalescing lobular consolidation and
of absence of associated edema in peribronchial
pneumonia.

A factor of great importance in determining the
rapid extension of the inflammation throughout the
lung, if the foregoing hypothesis is correct, is the asso-
ciated pulmonary edema. In the absence of pulmonary
edema the lesion remains discrete and the disease is
less severe.

Digitalis and venesection are each reported¹ to have
a beneficial action in pneumonia following influenza.
It may be that these measures are instrumental in pre-
venting pulmonary edema, thus limiting the extension
of the inflammation.

CONCLUSION

There is evidence for the belief that in pneumonia
following influenza, an associated pulmonary edema is
a factor of great importance in determining the rapid
extension of the inflammation throughout the lung,
and that in the absence of this edema, the lesion
remains localized about the bronchial branches.

1. Perriek, J. B.: Treatment of Influenza by Means Other than
Vaccines and Serums, J. A. M. A. 73: 482 (Aug. 16) 1919. Edgerly,
E. T.; Manson, F. M.; Dwinell, W. G., and Carr, J. G.: The Influenza
Pneumonia Epidemic at Camp Dodge, Am. J. M. Sc. 158: 212
(Aug.) 1919. Ravaut, P.: Treatment of Influenza, Paris méd. 8: 390
(Nov. 16) 1918, p. 390.

Tuberculosis and Occupation.—The latest occupational
mortality statistics for the United States for 1909 show that
the mortality from tuberculosis in agricultural pursuits was
8.7 per cent.; among bookkeepers and accountants, 22.5 per
cent.; and in servants and waiters, 27.4 per cent. If we stop
right here the evidence would be overwhelming in favor of
outdoor employment. But when we find that the tuberculosis
mortality in government officials and bankers is less than
8.7 per cent., and that for draymen, hackmen and teamsters
it is 23.4 per cent., it becomes apparent that in estimating
the hazards of indoor occupations, other factors, such as
physique, habits, exposure to dust, social conditions and
standards of living must be considered.—G. M. Kober, *Pub.*
Health Rep., March 26, 1920.

VENEREAL PROPHYLAXIS

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In a recent article¹ I expressed the opinion that venereal prophylaxis or "early treatment" after an impure sexual connection reduces the liability to venereal infection to one third of what it would be without it, and that in France, where practically all exposures on the part of our troops could fairly be considered impure and at least potentially infectious, there resulted one infection to thirty exposures without the use of prophylaxis, and one infection to ninety exposures followed by its use. Many officers who had thought prophylaxis more efficient than these figures indicate raised the objection that men who acquired infection after the use of prophylaxis did so as a result of failure to use it promptly or properly.

Concerning the charge that it was not used properly, I suspect that such was the case in many instances; but vigorous and continued efforts were and are made to see that it should be so used. Perfection is not likely to be obtained, but a reasonably good technic is applied in most instances.

TABLE 1.—TIME ELAPSING BETWEEN INFECTING INTERCOURSE AND USE OF PROPHYLAXIS

Time Within Which Prophylaxis Was Used	Cases	
	No.	Per Cent.
15 minutes	132	5.6
30 minutes	438	18.5
45 minutes	510	21.6
1 hour	1,015	43
2 hours	1,629	69
3 hours	1,884	79.8
4 hours	1,998	84.6
After 4 and within 12.....	196	8.3
Period not stated.....	165	6.9

Concerning the charge that prophylaxis was not or is not promptly used by persons acquiring infection, I now have some testimony. Since early in September, 1919, a questionnaire accompanied by the following statement from the Surgeon-General of the Army has been submitted to each patient in whom a new case of venereal disease was detected:

The soldier will be informed that this information is desired for use in the control of venereal disease, that it will be held confidentially and not used to his detriment, that he is under no compulsion to furnish it but that information will be appreciated. He will be asked to tell the truth or to refuse to answer, but to avoid making misleading statements. A report of this sort will be sent in on each new case of venereal disease detected, but if the soldier refuses to furnish any of the information asked for, that fact will be stated.

By Feb. 26, 1920, 5,000 case reports had been received and compiled; 4,755 men answered the question as to whether or not their infections followed the use of prophylaxis, of which number 2,359 men said that theirs did. The answers of these 2,359 men as to the time elapsing between the infecting intercourse and the use of prophylaxis are given in Table 1.

It is apparent that efforts at disinfection of a penis, as of hands or throat, cannot always be successful, even though the effort be made very soon after the exposure to infection. There is much the same reason, however, for making the attempt at disinfection that

there is for a surgeon's attempting to disinfect the hands which he has contaminated or injured while operating on a syphilitic or suppurative lesion, or, for more reason, so far as the available evidence indicates, than for attempting to disinfect a throat exposed to infection from any one of the respiratory diseases.

Among these 5,000 infected men the average number of sexual contacts followed by prophylaxis was for the preceding year, 15.3 for each infection follo

TABLE 2.—COMPARISON OF EFFECT OF PROPHYLAXIS ON THREE VENEREAL DISEASES

	Gonorrhea Per Cent.	Chancroid Per Cent.	Syphilis Per Cent.
Without prophylaxis	67.2	15.6	17.2
With prophylaxis	64.5	18.9	16.6

ing its use, while the average number of contacts without prophylaxis was, during the same period, 11 for each infection following its neglect. In order to determine, if possible, whether the use of prophylaxis prevents one type of venereal disease more than it does others, a comparison was made of the relative proportions of the three diseases in the first 2,000 cases in which infection followed the use, and in the first 2,000 in which it followed neglect of prophylaxis. The results are given in Table 2.

This comparison shows differences, but they are not so great as might be expected. The suggested causes of them are:

(a) Chance: They may be due to the run of the (report) cards; i. e., it may be that an undue proportion of the cards showing the use of prophylaxis relate to men who contracted the diseases in the Philippine Islands, Europe or some other foreign part where chancroid is more common than in the United States.

(b) Greater carelessness in the use of one feature of the prophylaxis than of others; e. g., it may be that thorough inunction is relatively neglected.

(c) Contamination due to rubbing; i. e., friction of inunction may cause cracks and abrasions and so permit the entrance of pyogenic organisms, which cause ulcers diagnosed as chancroids.

TABLE 3.—PERCENTAGE OF VENEREAL DISEASES AMONG UNITED STATES TROOPS FROM 1903 TO 1915

Year	Diseases		
	Gonorrhea Per Cent.	Chancroid Per Cent.	Syphilis Per Cent.
1903.....	61	20	17
1904.....	65	17	17
1905.....	66	17	16
1906.....	66	16	17
1907.....	64	20	15
1908.....	70	16	13
1909.....	69	14	15
1910.....	65	16	17
1911.....	57	15	27
1912.....	60	17	22
1913.....	57	17	24
1914.....	57	22	20
1915.....	60	18	20

(d) Effect of urinating. The urination always practiced with prophylaxis may be an important factor in the prevention of gonorrhea.

(e) Normal variations. The differences in percentages may be merely such as are within the normal variations that occur in large groups of cases, and without significance. Table 3 shows the percentages of these three diseases in the totals of venereal diseases reported among troops serving in the United States

1. Ashburn, P. M.: Factors Making for a Low Venereal Record in the American Expeditionary Forces, J. A. M. A. 73:1823 (Dec. 13) 1919.

the years 1903 to 1915. The increase in syphilis in 1910 is probably attributable principally to the use of the Wassermann test.

OCCURRENCE OF BILATERAL SYMPATHETIC OPHTHALMOPLEGIA

THE SIGNIFICANCE IN LETHARGIC ENCEPHALITIS

WILLIAMS B. CADWALADER, M.D.

Lecturer in Neurology and Neuropathology, University of Pennsylvania School of Medicine; Neurologist, Presbyterian Hospital

PHILADELPHIA

I wish to call attention to the diagnostic importance of the occurrence of bilateral sympathetic ophthalmoplegia in cases of lethargic encephalitis. So far as I know this has not been previously recorded, and it is of great significance in the diagnosis of this disease. It is well established that the pons and the medulla oblongata are traversed by a tract containing oculomotor fibers. A lesion of this tract causes contraction of the pupil and narrowing of the palpebral fissure and slight retraction of the eyeball of the same side. The tract passes through the dorsomedial region of the pons and medulla oblongata. Focal disease of the pons and medulla may therefore produce symptoms of sympathetic ophthalmoplegia." This sign, however, as far as I know, has not previously been observed on both sides at the same time. Recently I have had two cases of lethargic encephalitis in which both pupils were contracted and both palpebral fissures were narrowed, that is, the signs of bilateral "sympathetic ophthalmoplegia." In one of these the clinical diagnosis was confirmed by postmortem examination. Bilateral involvement of the sympathetic fibers of the eyes can be caused only by a diffuse or inflammatory lesion of the brain stem, so that when it is associated with the characteristic mental confusion of lethargic encephalitis it should be regarded as a diagnostic sign of that disease. However, because of the bilaterality of the narrowing of the palpebral fissures and contraction of the pupils, it is not likely to attract attention and is overlooked; but when it occurs only on one side at the time, the contrast quickly directs attention to it. Bilateral sympathetic ophthalmoplegia is not known to occur in other diseases.

501 Spruce Street.

Industrial Health Hazards.—An industrial health hazard could be interpreted to mean any working condition which is responsible for or contributes to physical injury or illness, including the presence of poisonous fumes, vapors, gases, acids and most factory dusts; excessive heat, cold and humidity; the handling of materials known to retain or suspected of retaining harmful bacteria; the frequent lifting of heavy weights, long hours of labor, muscular strain, and the conditions which predispose workers to disease. It is suggested, for instance, that there are over 600 branches of industry where poisonous fumes, gases, or liquids are present, and more than sixty-five industries in which dust is a menace to health. There are an unknown number of processes where fatigue is the result of muscular strain, and where organic weakness of the workers, often unknown to them, increases susceptibility to occupational disease. In view of this situation it is not advisable to know the effect on health of varying plant and municipal conditions? When the cost of information is so relatively slight, what objection is there to provision for the veritable barometer of health which mortality statistics create?—*Pub. Health Rep.*, April 9, 1920.

Clinical Notes, Suggestions, and New Instruments

A DEVICE FOR THE INTERMITTENT FLUSHING OF WOUNDS

EDGAR G. BALLENGER, M.D., AND OMAR F. ELDER, M.D.,
ATLANTA, GA.

By means of the device shown in the accompanying illustration, wounds may be flushed intermittently with medicating solutions, such as surgical solution of chlorinated soda (Dakin's solution), every half hour, two hours or otherwise

as desired. It has merely to be connected to an irrigating container and the screw compressor on the tube leading from it so adjusted that a given number of drops flow per minute. When the fluid collects to the level of the tube at C, siphonage is established and the solution flows through the exit tube into the wound.

The amount may be varied by raising or lowering the tube at C, while the frequency of the flushing is regulated by the rate of the drops per minute. In this manner wounds may be flushed with solutions as desired without the necessity of a nurse or an attendant, the only thing necessary being to keep the solution in the irrigating container, which may be of sufficient size to last for twenty-four hours.

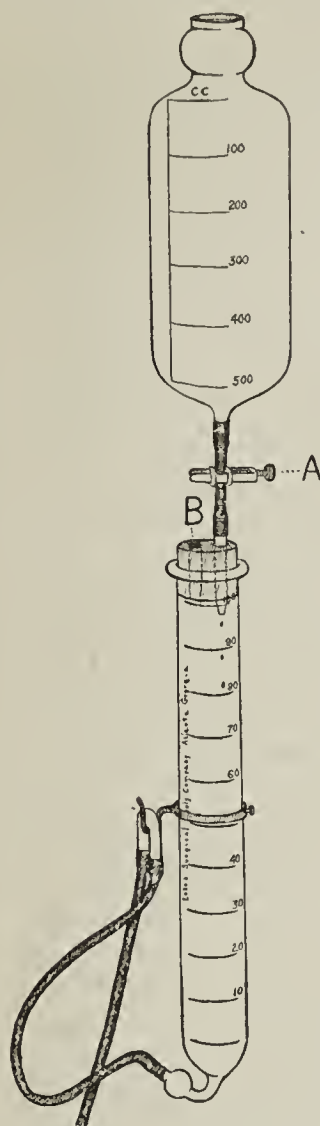
The hole in the rubber stopper B permits siphonage, when established, to empty the solution collected in the apparatus.

The force with which the solution comes into the wound can be varied as desired by the height to which the device is carried above the wound.

Multiple connections may be made as desired. When a continuous drip is needed, it is only necessary to remove the tube from C and allow it to hang.

If we had had such a device in France, the employment of Dakin's solution would have been much less troublesome than it was.

It is as simple to use as the rectal drip, being altogether automatic; it greatly lessens the work of the nurses, and at the same time gives treatment exactly on time.



Device for intermittent flushing of wounds.

LETHARGIC ENCEPHALITIS AS A COMPLICATION OF PREGNANCY AND LABOR

A. Y. P. GARNETT, M.D., WASHINGTON, D. C.

A woman, aged 26, secundipara, had a fairly typical attack of lethargic encephalitis beginning about February 6, when she was eight months pregnant. Her family history and previous personal history were negative; the menstrual history was negative, and her previous labor, eighteen months before, had been normal. Until February 6 she had been normal, and there had been no complications of her pregnancy. At this time she became nervous, complained of tingling in the arms and legs and extreme weakness. The temperature was 102.5. Later she became semidelirious and restless. At this time she was seen by Dr. Loren Johnson, Dr. Moore and Dr. Hough in consultation, and a diagnosis of lethargic encephalitis was made. The symptoms were typical. There was diplopia, ptosis of the lids, nystagmus and marked mental and physical exhaustion. The patient's mind wandered, her

answers to questions became vague and rambling, her eyes closed and she apparently lapsed into sleep after very slight mental or physical effort. The pupillary reflexes were sluggish, the tendon reflexes hyperactive, and the superficial abdominal reflexes absent. There was no Babinski reflex or Kernig sign, and no nuchal rigidity. The heart and lungs were negative; the pulse, 100, regular in force and frequency; the systolic blood pressure 110 and the diastolic, 70. The urine was negative. The blood showed a normal white blood cell count and differential, and a moderate secondary anemia; a blood culture was negative. The blood Wassermann test was negative, and an examination of the spinal fluid by Dr. Hough revealed a clear fluid under moderately increased pressure, with protein content increased $++$, 18 cells per cubic millimeter, Wassermann test negative, and colloidal gold test negative.

The patient had been removed to Garfield Hospital, as the home surroundings were not suitable for treating a case of this sort. The pregnancy at this time was normal in every way; the head was not engaged and was in the left occipito-anterior position; the fetal heart was 140 and regular. The temperature was irregular, at first occasionally rising to 101 or 102.5, the highest it reached at any time, and later becoming normal or subnormal. The pulse was rapid, from 100 to 120. The blood pressure continued somewhat below normal. For two weeks previous to labor the patient complained of great pain in the legs, which I thought was aggravated possibly by pressure of the head in the pelvis. I therefore raised the buttocks on a pillow, and elevated the head away from the pelvis.

Her mental and general physical condition gradually and slowly improved, but was far from normal when she went into labor, February 29. When labor began the head was unengaged in the right occipitoposterior position with the occiput inclining to the right iliac fossa. The pains developed rapidly, were strong and when she was nearly fully dilated the head was easily brought over into the pelvis, rotated to the anterior position, and the membranes ruptured. The patient went through a normal delivery in two hours, and had no undue bleeding afterward, and apparently no shock. Her pulse was 90 at the beginning of labor, and 106 at the end. There was no complaint of the labor pains. She apparently did not suffer at all, and said that though she felt them, the pains caused her little or comparatively little suffering. She had no anesthetic from beginning to end. She was returned to the ward in good obstetric condition. Though the night nurse was ordered to catheterize the patient, this was overlooked, and she passed no urine until the following morning. When I saw her at this time the uterus was fairly well contracted, the entire lower abdomen distended though not painful, the bladder on a level with the fundus of the uterus. Catheterization produced 72 ounces of urine.

The baby was a normal infant weighing $6\frac{1}{2}$ pounds. The puerperium has been perfectly normal with no fever and no pain and though the milk was very scanty she has endeavored to nurse her baby. She has had no inclination to void, and there appears to be a partial paralysis of the bladder. Though allowed on the commode for half an hour at a time, she cannot void until the bladder contains at least 40 ounces of urine. Her mental condition has continued to improve and has cleared up, until now, with the exception of an occasional hallucination and some pain in the legs, she has perfectly recovered. There has been no treatment except for the anemia. For this she was given ten injections of sodium cacodylate, and at present her hemoglobin is 80 per cent. and the red blood count, 4,100,000, which is an improvement. The spinal fluid was examined again, March 12, by Dr. Hough, and showed a clear fluid, under normal pressure, with protein content $+$, and 9 cells per cubic millimeter, which is not quite normal but indicates improvement.

The particularly interesting part of this case to me from an obstetric point of view is the apparently painless labor and the partial paralysis of the bladder, indicating that there may have been some destruction of the posterior nerve roots simulating tabes dorsalis.

1824 Massachusetts Avenue.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY

PITUITOL OBSTETRICAL.—Pituitary Extract Obstetrical-Hollister-Wilson. An extract of the posterior lobe of the pituitary body of cattle, approximately three times the strength of Solution of Hypophysis, U. S. P., preserved by the addition of chlorbutanol, each Cc. containing 0.005 Gm. It is standardized according to the method of G. B. Roth (Bulletin 100, U. S. Hygienic Laboratory).

Actions and Uses.—See general article Pituitary Gland, New and Nonofficial Remedies, 1920, p. 205.

Dosage.—0.3 to 1 Cc. (5 to 15 minims) hypodermatically or intramuscularly.

Manufactured by the Hollister-Wilson Laboratories, Chicago. U. S. patent or trademark.

Ampoules Pituitol Obstetrical 0.5 Cc.—Each ampoule contains pituitary extract 0.5 Cc.

Ampoules Pituitol Obstetrical 1 Cc.—Each ampoule contains pituitary extract 1 Cc.

PITUITOL SURGICAL.—Pituitary Extract Surgical-Hollister-Wilson. An extract of the posterior lobe of the pituitary body of cattle approximately six times the strength of Solution of Hypophysis, U. S. P., preserved by the addition of chlorbutanol, each Cc. containing 0.005 Gm. It is standardized according to the method of G. B. Roth (Bulletin 100, U. S. Hygienic Laboratory).

Actions and Uses.—See general article Pituitary Gland, New and Nonofficial Remedies, 1920, p. 205.

Dosage.—0.3 to 1 Cc. (5 to 15 minims) hypodermatically or intramuscularly.

Manufactured by the Hollister-Wilson Laboratories, Chicago. U. S. patent or trademark.

Ampoules Pituitol Surgical 1 Cc.—Each ampoule contains pituitary extract 1 Cc.

RADIUM BROMIDE (See New and Nonofficial Remedies, 1920, p. 238).

Radium Bromide, Radio Chemical Corp.—Supplied in form of a mixture of radium bromide and barium bromide. All deliveries are made subject to the tests of the U. S. Bureau of Standards.

Manufactured by the Radio Chemical Corp., New York.

RADIUM CARBONATE (See New and Nonofficial Remedies, 1920, p. 239).

Radium Carbonate, Radio Chemical Corp.—Supplied in form of a mixture of radium carbonate and barium carbonate. All deliveries are made subject to the tests of the U. S. Bureau of Standards.

Manufactured by the Radio Chemical Corp., New York.

RADIUM CHLORIDE (See New and Nonofficial Remedies, 1920, p. 240).

Radium Chloride, Radio Chemical Corp.—Supplied in form of a mixture of radium chloride and barium chloride. All deliveries are made subject to the tests of the U. S. Bureau of Standards.

Manufactured by the Radio Chemical Corp., New York.

RADIUM SULPHATE (See New and Nonofficial Remedies, 1920, p. 241).

Radium Sulphate, Radio Chemical Corp.—Supplied in form of a mixture of radium sulphate and barium sulphate. All deliveries are made subject to the tests of the U. S. Bureau of Standards.

Manufactured by the Radio Chemical Corp., New York.

PROCEEDINGS OF THE NEW ORLEANS SESSION

MINUTES OF THE SEVENTY-FIRST ANNUAL SESSION OF THE AMERICAN
MEDICAL ASSOCIATION, HELD AT NEW ORLEANS, APRIL 26-30, 1920

(Continued from page 1257)

HOUSE OF DELEGATES

Third Meeting—Tuesday Morning, April 27

The House of Delegates met at 9:30 a. m., and was called to order by the Speaker.

The minutes of the previous meeting were read, corrected, and approved.

Dr. H. B. Gibby, Pennsylvania, Chairman, presented a supplementary report for the Committee on Credentials, stating that 110 delegates had registered, were entitled to and had been seated in the House of Delegates.

It was moved and seconded that the report be accepted. Carried.

Report of Reference Committee on Sections and Section Work

Dr. Hugh T. Patrick, Illinois, Chairman, presented the report of the Committee on Section Work, as follows:

to the House of Delegates:

The first part of the report of the Council on Scientific Assembly relates to an International Congress of Obstetricians and Gynecologists. The Council took no action on this.

Concerning the present plan of half day sessions of the sections, your committee conferred with the Secretary of the Association. As a result, he volunteered to request the officers of the sections to get, so far as possible, the sense of the members on this plan, this information to be for the future use of the Council on Scientific Assembly.

The remainder of the report of the Council on Scientific Assembly relates to matters involving changes in the By-Laws, and consequently your committee recommends that this part of the report be referred to the Reference Committee on Constitution and By-Laws.

Respectfully submitted, HUGH T. PATRICK, Chairman,

LEE MASTEN FRANCIS, S. R. ROBERTS,
FRANK E. McCULLOUGH, SOUTHGATE LEIGH.

It was moved that the report be adopted.
Seconded and carried.

Report of Reference Committee on Medical Education

Dr. J. N. Hall, Colorado, Chairman, presented the following report of the Reference Committee on Medical Education:

Your committee has considered the report of the Council on Medical Education, and wishes to commend the careful and thorough labors which have characterized the efforts of the Council these many years and from which the known improvement in medical education has resulted.

Your committee wishes particularly to endorse the intention of the Council to reclassify the medical schools on the basis of the present survey as detailed in the report, and further endorses the changes in classification which were suggested. Concerning the routine work of the Council in relation to hospitals, your committee wishes to endorse the continuation of the various activities outlined in the report, and commends particularly the expressed intention of friendly cooperation with other agencies interested in hospital development.

Your committee endorses the efforts of the Council to secure a reorganization of academic education, allowing medical graduation at a less advanced age and to obtain extension of the facilities for graduate medical instruction.

Your committee is of the opinion that the much discussed question of full-time clinical teachers is still in an experimental stage, and that no final judgment should be expressed at this time.

Relative to the "reorganization of medical education, wrong tendencies in clinical teaching and other tendencies in medi-

cal schools," your committee cannot endorse many of the statements made concerning preclinical instruction by non-medical men. While these unsatisfactory tendencies doubtless exist in many instances, they are generally due to economic conditions. It is at present impossible to obtain the required number of such teachers having complete medical training.

Your committee believes that this problem deserves further study, and also that each college should consider the need of a well balanced faculty to avoid such difficulty.

In general, however, your committee recommends the adoption of the report and urges the House of Delegates to lend every financial and moral support to the Council in the furtherance of its work.

Respectfully submitted,

L. HEKTOEN,
FREDERIC E. SONDERN,

J. N. HALL, Chairman,

W. H. SEEMAN.

Dr. M. L. Harris, Illinois, moved that the report be adopted.

Seconded and carried.

Report of the Reference Committee on Legislation and Public Relations

Dr. J. H. J. Upham, Ohio, Chairman, presented the report of the Reference Committee on Legislation and Public Relations, as follows:

The Reference Committee on Legislation and Public Relations had referred to it the reports of the Council on Health and Public Instruction and of the Special Committee on the Narcotic Drug Situation.

REPORT OF THE COUNCIL

Your committee has carefully considered the report of the Council, and is impressed by the broad scope of the field of operations covered by the Council and its committees and the progressive spirit shown in dealing with many problems of vital importance to the medical profession.

In accordance with the request of the Council, the committee has considered both the reports for 1919 and for 1920, and makes the following recommendations:

1. That the House of Delegates endorse and approve of Senate Concurrent Resolution No. 14, which has passed the U. S. Senate and is now pending in the House, providing for a joint congressional committee to make a survey and report on the federal public health activities, and that it urge its passage by the House. The creation of a congressional committee and the inauguration of a survey of federal public health work will furnish the fundamental information needed and will mark a long step forward in the securing of such a national health organization as our country requires.

2. That the medicolegal work of the Council, which has previously been endorsed by the House of Delegates, be approved and that the Council be directed to complete this work.

3. That the work of the Council in securing the passage of the model bill for the registration of births and deaths be approved, and that the state medical associations in Arizona, Nevada, South Dakota, Iowa and West Virginia, the only states now without adequate laws on this subject, be urged to take the lead in educating public opinion in these states and in securing the passage of the model bill at the next session of their legislatures, in order that the registration area may be completed and that birth and death registration, the basis of all modern health work, may be uniform throughout the entire country.

4. That the work of the Committee on Protection of Scientific Research be approved, and that the Council be directed to reprint the hearings before the Senate committee on the antivivisection bill as one of its educational pamphlets.

5. That the work of the Committee on Health Problems in Education be endorsed, and that the Secretary of the Coun-

cil be instructed to ask the secretary of each state association to have a committee appointed to attend the next meeting of the State Teachers' Association and to ask for the appointment of a committee from the State Teachers' Association to cooperate with the medical profession in promoting better health conditions in our public schools.

6. That the House of Delegates record its disapproval of the inequitable increase of the registration fee for physicians under the Harrison law and demand the reduction of this fee to a nominal amount so long as this law remains in force.

7. That the House of Delegates, while recognizing the fact that much good has been accomplished by the Harrison law, is of the opinion that the narcotic drug problem cannot be solved through any restrictive licensing system which permits of the importation of unlimited amounts of opium and cocaine, and that the only effective solution is for the federal government to take complete control of the importation of habit-forming drugs, the restriction of such importations to the amount required for legitimate purposes, and the distribution through the Public Health Service of such drugs to properly qualified and responsible persons.

8. That the Council on Health and Public Instruction be directed to inaugurate an investigation and submit a report on (1) the amount of narcotic drugs required each year for legitimate purposes; (2) the amount of narcotic drugs now actually imported, and (3) methods by which these drugs may be restricted to legitimate uses.

REPORT OF THE COMMITTEE ON THE NARCOTIC DRUG SITUATION¹

Your committee endorses the report of this committee, and desires to record its appreciation of the earnest and conscientious effort made to study this question and to present a synopsis of it to the House of Delegates. We recommend that the Council on Health and Public Instruction be directed to publish the report of the committee as one of its education pamphlets for distribution to those interested in the question.

We also recommend that the recommendations of the committee be adopted as follows:

1. That the ambulatory treatment of drug addiction, as far as it relates to prescribing and dispensing of narcotic drugs to addicts for self-administration at their convenience, be emphatically condemned.

2. That heroin be eliminated from all medicinal preparations, and that it should not be administered, prescribed or dispensed; and that the importation, manufacture and sale of heroin should be prohibited in the United States.

3. That the bill introduced by Senator France, No. 2785, and Representative Rainey, No. 11778, to provide aid from the United States from the several states in prevention and control of drug addiction and the care and treatment of drug addicts, be approved, and that Senator France and Representative Rainey be so notified.

4. In view of the statement in a government report that about 90 per cent. of the amount of narcotic drugs entered for consumption is used for other than medical purposes, the Treasury Department is respectfully urged to study and report on the narcotic drug situation, including the question of government control of these drugs.

5. That the Bureau of Public Health Service of the Treasury Department be respectfully requested to continue the compilation of state laws and regulations relating to habit-forming drugs, and bring them up to date.

Finally, your committee recommends that the report of the Council as a whole be adopted, and urges the Association to lend every encouragement and assistance to the Council in the continuation of its work.

Respectfully submitted,

S. E. LAMBERT,
LEROY CRUMMER,

J. H. J. UPHAM, Chairman,
FRANKLIN E. MURPHY,
J. E. LANE.

It was moved that the report be adopted.

Seconded and carried.

Report of the Reference Committee on Amendments to the Constitution and By-Laws

Dr. Rock Sleyster, Wisconsin, Chairman, presented the report of the Reference Committee on Amendments to the Constitution and By-Laws, as follows:

Your Committee on Amendments to the Constitution and By-Laws has carefully studied the suggested changes to the

Constitution and By-Laws as contained in the report of the Judicial Council and recommended for adoption by that body. Your committee has met with members of the Council and has received from them the final draft containing certain changes made after the printing of the handbook and not contained therein. Reasons for changes and the rewording of certain sections have been given and explained. The Chairman of the Council will be glad to explain further to the House the reasons for suggested changes if it is your desire as the sections are read.

Your committee finds no radical changes have been made. The Constitution and By-Laws have been brought up to date in keeping with the character of work done and the manner of doing it, the wording has been abbreviated and simplified and the English improved. The Association is indebted to the Council for a much improved draft of a Constitution and By-Laws. The changes made by the Council since the printing of the handbook, together with some changes suggested by your committee, will be called to your attention in the reading. As submitted in this reading, it is approved by your committee and recommended for adoption.

Respectfully submitted,

W. B. RUSS,
EDWARD B. HECKEL,

ROCK SLEYSTER, Chairman,
E. A. HINES,
A. E. BULSON, JR.

[NOTE.—The revised By-Laws are being printed, and will be ready for distribution in a few days. Copies will be sent on application.—Ed.]

On several motions, duly seconded and carried, each section was adopted, and on a separate motion, duly seconded and carried, the Constitution and By-Laws were adopted as a whole.

Dr. Horace M. Brown, Wisconsin, moved that the Secretary be authorized to make such editorial changes as to punctuation, paragraphing, etc., as may be necessary for the perfection of the record, but only such as shall in no wise modify the meaning of the portions so edited.

Seconded and carried.

Report of the Reference Committee on Miscellaneous Business

Dr. F. C. Warnshuis, Michigan, Chairman, presented the report of the Reference Committee on Miscellaneous Business, as follows:

Your committee had referred to it the communication of the Baltimore City Medical Society, requesting that this House of Delegates give serious consideration to the establishment of a medical newspaper devoted to health news and kindred subjects for the education and information of the lay public.

Your committee did not receive a copy of the article referred to in the communication.

Your committee readily perceives the benefits that might be derived from such a publication. However, so many factors exist that at this time we deem it inadvisable to enter on such an undertaking. The committee, therefore, recommends that this House of Delegates postpone for the present further consideration of this project.

Respectfully submitted,

CHARLES J. WHALEN,
N. B. VAN ETEN,

F. C. WARNSHUIS, Chairman,
GEORGE E. READING,
H. W. BELL.

It was moved that the report be adopted.

Seconded and carried.

The Secretary read a communication from Surg.-Gen. H. S. Cumming, United States Public Health Service, asking the House of Delegates to arrange for a representative of the American Medical Association to serve on a committee, acting under the Treasury Department, to study the distribution and use of habit-forming drugs.

The Speaker said that if there were no objections, this matter would be referred to the Council on Health and Public Instruction for action.

No objection being raised, it was so referred.

1. This report appears as an Addendum. See page 1324.

Resolution on Remuneration of Medical Officers in United States Civil Service

Dr. W. G. Morgan, District of Columbia, presented the following preambles and resolution, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The Congressional Joint Commission on reclassification of salaries has made certain recommendations concerning salaries of medical officers in the United States Civil Service, and such recommendations have been referred to the Committee on Reform in Civil Service, of the House of Representatives; and

WHEREAS, These recommendations are inimical to the interests of the medical profession, by subordinating the remuneration of medical officers to that of many others requiring less preparatory study: therefore, be it

Resolved, That the matter be referred to the House of Delegates for its consideration.

On motion, which was duly seconded and carried, the House of Delegates took a recess until 2 p. m.

Fourth Meeting—Tuesday Afternoon, April 27

The House of Delegates reconvened at 2 p. m. and was called to order by the Speaker.

Dr. H. B. Gibby, Pennsylvania, Chairman, presented a supplementary report for the Committee on Credentials, stating that 121 delegates had registered, were entitled to and had been seated in the House of Delegates.

It was moved and seconded that the report be accepted. Carried.

The report of the Reference Committee on Reports of Officers was called for.

Dr. Thomas S. Cullen, Maryland, Chairman, asked for further time, which was granted.

Dr. M. L. Harris, Illinois, Chairman of the Judicial Council, stated that under the By-Laws the Judicial Council made its own rules governing its work. There was an old standing rule which had been in operation for a number of years, but as these rules were not now in operation, since the Judicial Council had power to make its own rules, he moved that these old standing rules be rescinded.

Seconded and carried.

The Secretary read a communication, addressed to the President-Elect of the American Medical Association, extending an invitation to the members to visit the Cotton Exchange during their stay in New Orleans.

It was moved that the invitation be accepted.

Seconded and carried.

Report of Reference Committee on Hygiene and Public Health

Dr. J. W. Schereschewsky, U. S. P. H. S., Chairman, presented the report of the Reference Committee on Hygiene and Public Health, as follows:

Your committee has carefully considered the resolutions on compulsory sickness insurance, and reports it with amendments as follows:

Resolved, That the American Medical Association declares its opposition to the institution of any plan embodying the system of compulsory contributory insurance against illness, or any other plan of compulsory insurance which provides for medical service to be rendered contributors or their dependents, provided, controlled, or regulated by any state or the Federal government.

The Reference Committee also recommends the adoption of the following resolution:

Resolved, That the Council on Health and Public Instruction be instructed to investigate the relative adequacy of medical service and relations of the profession to the Public and report at the next annual session.

Respectfully submitted,

J. W. SCHERESCHEWSKY, Chairman,
A. T. MCCORMACK,
C. VAN ZWALENBURG,
L. H. TAYLOR,
C. ST. CLAIR DRAKE.

On separate motions, duly seconded and carried, each section of the report was adopted.

Dr. Arthur T. McCormack, Kentucky, then moved that the report of the committee be adopted as a whole.

Seconded and carried.

Resolutions on Medical and Surgical History of the World War

Dr. Gerald B. Webb, Colorado, Chairman, presented the following preambles and resolutions from the committee to which was referred the matter of publishing the medical and surgical history of the World War.

WHEREAS, The Surgeon-General of the Army has asked for an appropriation from Congress of \$150,000 to publish a medical and surgical history of the part played by the United States in the World War, and

WHEREAS, This appropriation has been approved by the Chief of Staff and the Secretary of War, and is now in the hands of the proper committee in Congress as a part of the Sundry Civil Bill, and

WHEREAS, The American Medical Association of some 83,000 members, of which a large proportion served in the medical services of the United States, is of the firm belief that the expenditure of this comparatively small sum would be much more than repaid in the benefits to the medical profession and to the public, and

WHEREAS, Many very valuable lessons were learned by the medical profession during the war, and it is feared that many of these will be lost unless this history is immediately published, and that failure to do this would have the unfortunate result of depriving the medical profession and the public of scientific, sanitary, surgical and medical information of the greatest value to their well being, and

WHEREAS, The value of a similar history has been well demonstrated in the publication of the medical and surgical history of the Civil War, although its appearance was regrettably delayed;

Resolved, That the American Medical Association earnestly urges that the sum in question be appropriated for the purpose stated and the publication of the volumes be expedited as quickly as possible. And be it further

Resolved, That copies of this resolution be sent to the Speaker of the House, Mr. Good, Chairman, of the Committee in Charge of the Sundry Civil Bill, to the Secretary of War, and to the Surgeon-General of the United States Army.

Respectfully submitted,

GERALD B. WEBB, Colorado, Chairman,
WALTER R. STEINER, Connecticut,
LEROY CRUMMER, Nebraska.

It was moved that the report be adopted.

Seconded and carried.

Dr. M. L. Harris, Illinois, moved that a copy of the report be sent to the secretary of each state and territorial medical association, so that constituent associations may add their influence in urging this matter before Congress.

Seconded and carried.

Report of Reference Committee on Legislation and Public Relations

Dr. J. H. J. Upham, Ohio, Chairman, presented the following report of the Reference Committee on Legislation and Public Relations:

The committee has considered the resolution introduced by Dr. W. G. Morgan, and desires to report as follows:

The unofficial data furnished in explanation of these resolutions are so astounding that the committee feels this is a matter for careful investigation by the Council on Health and Public Instruction, and if the facts discovered show such a deplorable condition to exist as indicated, that the Council be instructed to memorialize the proper congressional committees, urging the proper provision for adequate pay for medical officers.

The committee also recommends that the Council be empowered to send representatives to appear at hearings of congressional committees.

Respectfully submitted,

J. H. J. UPHAM, Chairman,
S. E. LAMBERT,
J. E. LANE.

It was moved that the report be adopted.

Seconded and carried.

On motion of Dr. James F. Rooney, New York, which was duly seconded, the House of Delegates adjourned until 2 p. m. Thursday, April 29.

Fifth Meeting—Thursday Afternoon, April 29

The House of Delegates met at 2 p. m., and was called to order by the Speaker.

Remarks by President Braisted

Admiral William C. Braisted, President of the Association, was introduced by the Speaker, and addressed the House as follows:

Mr. Speaker and Members of the House of Delegates: I have accepted the position of President of this great Association with the feeling that it was the Association's tribute to the splendid work of our Navy during the great World War. Let this be known as the Navy Year and let the same spirit of cooperation and harmony which characterizes the Navy when it is called to service for the country's sake be the actuating principle of our work this year, and let us lose no opportunity to make every effort to make practical use of the great health lessons of the war for the benefit of our people. I am here to work with you as a practicing physician and as a citizen of this great country, and not as Surgeon-General of the Navy, and with no personal or service motive. For months I have carefully considered the present condition of this Association from every standpoint, and feel that I have a fair grasp of the practical working of the organization. I have a feeling of fraternal and affectionate interest in every member and a supreme desire to use whatever opportunity or influence I may have for the best good of this Association in its great efforts for the good of the nation. I beg of you, therefore, to join with me this year in harmonious and disinterested effort for so laudable a purpose and hope in my address to you at our next annual session to be able to meet you with a smiling face and a feeling that we have made the most of the precious opportunities for doing good that are entrusted to us.

In union and harmonious effort there will be invincible power and splendid result.

In discord and self-interest there will be disintegration of the Association as a body and dismal and lamentable failure in every good effort.

At the close of President Braisted's remarks, the Speaker said: The House of Delegates desires to express its appreciation to you as the President of the Association, as Surgeon-General of the Navy, and as a physician. We thank you.

Dr. H. B. Gibby, Pennsylvania, Chairman, presented a supplementary report of the Reference Committee on Credentials, stating that 125 delegates had registered, were entitled to and had been seated in the House of Delegates.

The Secretary called the roll, and 118 delegates responded.

Dr. Arthur T. McCormack, Kentucky, moved that the reading of the minutes of the previous meeting be dispensed with. Seconded and carried.

Election of Officers

The next order of business being the election of officers, Dr. J. N. Hall, Colorado, nominated Dr. Hubert Work, Pueblo, Colo., for President of the Association.

The nomination of Dr. Work was seconded by Dr. William F. Campbell, New York; Dr. C. R. Woodson, Missouri; Dr. J. M. Aikin, Nebraska; Dr. William E. Anderson, Virginia; Dr. C. Van Zwalenburg, California; Dr. Arthur T. McCormack, Kentucky; Dr. J. Richard Kevin, New York, and Dr. H. N. MacKechnie, Illinois.

Dr. John D. McLean, Pennsylvania, nominated Dr. George E. de Schweinitz, Philadelphia, for President of the Association.

The nomination of Dr. de Schweinitz was seconded by Dr. L. M. Francis, Delegate from the Section on Ophthalmology; Dr. William F. Bacon, Pennsylvania; Dr. Thomas C. Chalmers, New York; Dr. Edward B. Heckel, Pennsylvania; Dr. Arthur J. Bedell, New York; Dr. James F. Rooney, New York; Dr. R. P. Sullivan, Delegate from the Section on Surgery, and Dr. A. E. Bulson, Indiana.

Dr. L. A. Yarborough, Tennessee, moved that nominations be closed. Seconded and carried.

The Vice Speaker appointed as tellers Dr. J. D. Brook, Michigan; Dr. A. B. Graham, Indiana, and Dr. Arthur J. Bedell, New York.

Dr. Work received the majority of the votes cast and was declared elected President of the Association.

Dr. John D. McLean, Pennsylvania, moved that Dr. Work's election made unanimous. Seconded and carried.

The Vice Speaker appointed Drs. John D. McLean, L. M. Francis, and J. N. Hall as a committee to find the President-Elect and escort him to the platform. President-Elect Work was escorted to the platform by the committee.

In response to cries of "Speech! Speech!" he said:

Mr. Vice Speaker, and Members of the House of Delegates: For sixteen years, as was stated here, I have been in this House each year in some capacity. Four times you have elected me to the office of Speaker of the House of Delegates. For four years you have borne with me and encouraged me and supported me, and have had some fun with me. Now, as the last act, you have elevated me to the highest position that can be given to a medical man in the United States. I would like to find language to express my appreciation to you men, but somehow I cannot find words to convey to you my heartfelt thanks for the distinguished honor you have conferred on me. (Applause.)

At this juncture, the Speaker resumed the chair.

The other officers elected are as follows:

Vice President—DR. ISADORE DYER, New Orleans.

Secretary—DR. ALEXANDER R. CRAIG, Chicago.

Treasurer—DR. WILLIAM ALLEN PUSEY, Chicago.

Speaker of the House of Delegates—DR. DWIGHT H. MURRAY, Syracuse, N. Y.

Vice Speaker of the House of Delegates—DR. F. C. WARNSHUIS, Grand Rapids, Mich.

Trustees—DR. CHARLES W. RICHARDSON, District of Columbia; DR. W. T. SARLES, Sparta, Wis.; DR. WALTER T. WILLIAMSON, Portland, Ore.

President Braisted nominated the following as members of standing committees, and the House of Delegates confirmed the nominations:

Judicial Council—DR. I. C. CHASE, Texas, five years.

Council on Health and Public Instruction—DR. MILTON BOARD, Kentucky, five years.

Council on Medical Education and Hospitals—DR. RAY WILBUR, California, five years.

Council on Scientific Assembly—DR. J. SHELTON HORSLEY, Virginia, to succeed himself for the term of five years; DR. F. P. GENGEBACH, Colorado, to serve until 1924. He further recommends that the terms of DR. E. S. JUDD, Rochester, Minn., and DR. ROGER S. MORRIS, Cincinnati, shall each be extended one year, so that they shall respectively expire in 1922 and 1923. To complete the personnel of the Council in accordance with the amended By-Laws of the Association to go into effect at the close of this annual session, he nominated DR. J. E. LANE, New Haven, Conn., for the term to expire in 1921.

Supplementary Report of the Council on Scientific Assembly

The Secretary presented the following supplementary report of the Council on Scientific Assembly:

The Council on Scientific Assembly recommends that the House of Delegates shall avail itself of its privilege to elect, on unanimous vote of the Council, more than three Honorary Fellows. In order that the Association may honor the guests of the National Examining Board and other eminent physicians in attendance on this Annual Session by electing them to honorary fellowship, it reports that the following eminent physicians have been nominated for honorary fellowship by several sections, and that these nominations have been approved by the Council:

Dr. Norman Walker, Representing the three Scottish Medical Corporations.

Col. H. J. Waring, M.S., F.R.C.S., Representing the Royal College of Surgeons of England.

Sir Humphry D. Rolleston, K.C.B., M.D., Royal College of Physicians, London.

Dr. E. E. Desmarest, Professor of Surgery, University of Paris, Paris.

Dr. Gustave Roussy, Professor of Medicine, University of Paris, Paris.

Dr. Jules Voncken, Liège, Belgium.
Dr. Iwaho Tsuchiya, Tokyo, Japan, Physician to the Imperial Court of Japan.

Respectfully submitted for the Council,

J. SHELTON HORSLEY, Chairman.

It was moved that the report be adopted and those nominated for honorary fellowship be elected. Seconded and carried.

Applications for Associate Fellowship

The Secretary then submitted applications for Associate Fellowship approved by the officers of the several sections.

On motion, duly seconded and carried, the Secretary was directed to cast the ballot of the House in those instances in which the applicant is eligible for Associate Fellowship in accordance with the provision set forth in the By-Laws, and when there is no objection to the applicant filed by the officers of the constituent association within whose jurisdiction the applicant resides.

Place of 1921 Annual Session

Dr. Frank Billings, Illinois, Secretary of the Board of Trustees, presented a supplementary report from the Board of Trustees, stating that invitations had been received to hold the next annual session of the Association in Boston, Saratoga Springs, Philadelphia, Washington, D. C., Indianapolis and Buffalo. These invitations were accompanied with letters of commendation from the commercial clubs from all of the cities mentioned with the exception of Boston. The invitation to meet in Boston came from the organized medical profession, and the invitation to meet there was extended by the Massachusetts State Medical Society, by the Suffolk County Medical Society, by the Harvard Medical School, and by Tufts Medical School.

The Board of Trustees was unanimous in recommending Boston as the next place of meeting. This approval of the Board of Trustees carried with it the suggestion to the House that the profession of Boston must give assurances to the Association that sufficient hotel accommodations will be provided. Furthermore, he called attention to the By-Laws, that in the event the place selected by the House of Delegates should appear to the Board of Trustees not to be suitable, the Board of Trustees was empowered to select another place for the meeting, provided it was done two months preceding the meeting.

On motion, duly seconded and carried, the report was adopted.

Resolutions from the Reference Committee on Legislation and Public Relations

Dr. J. H. J. Upham, Ohio, Chairman, presented the following resolutions for the Reference Committee on Legislation and Public Relations:

WHEREAS, The present governmental activities for the prevention of disease are inadequate to the needs of the nation; Therefore be it

Resolved: 1. That the House of Delegates of the American Medical Association reaffirms its position as favoring an adequate department of health with a cabinet officer at its head.

2. That the Council on Health and Public Instruction of the American Medical Association be instructed to request the Surgeon-General of the United States Public Health Service to designate three officers to act with the joint committee of the council, the state health officers, and the American Public Health Association, in conferring with the Senate Committee on Public Health and Quarantine and the House Committee on Interstate and Foreign Commerce in the preparation of a bill providing for a department of health, the nucleus of which shall be the United States Public Health Service.

3. That the President of the American Medical Association appoint two committees, each consisting of three Fellows who are affiliated with the Republican and Democratic committees and to attend the National Republican and Democratic conventions for the purpose of having written into both parties' platforms, planks favoring the establishment of a national department of health.

4. That the officers of the American Medical Association be instructed to bend every energy toward securing legislation providing for a national department of health.

5. That the Board of Trustees be requested to make such appropriations as may be necessary to carry out these resolutions.

For the Reference Committee on Legislation and Public Relations,
J. H. J. UPHAM, Chairman.

Dr. Arthur T. McCormack, Kentucky, moved that the resolutions be approved by the House by a rising vote and referred to the Council on Health and Public Instruction.

Seconded and unanimously carried.

Dr. John E. Lane, Connecticut, presented the following resolutions which were passed by the Section on Dermatology and recommended to the House for adoption:

WHEREAS, The deleterious effects of syphilis on the mortality and morbidity of the human race are so prevalent and so severe as to challenge the most serious attention of the entire medical profession; and

WHEREAS, In the scientific study of any disease, knowledge of its natural history is an item of cardinal importance; and

WHEREAS, Owing to the protracted course of syphilis, a continuous and complete clinical record of a given case can be secured only through the services of several successive medical observers; and

WHEREAS, It is highly desirable that a sufficient number of completed histories be accumulated and preserved and made easily accessible to students; and

WHEREAS, For the successful accomplishment of the purpose set forth above, the interest and cooperation of a considerable number of the best elements of our profession as represented in the membership of the American Medical Association are necessary; therefore be it,

Resolved (1), That the Section on Dermatology of the American Medical Association recognizes the importance of ascertaining the natural history of syphilis and of making this history accessible and in form serviceable to students of medicine; further

Resolved (2) That the Section on Dermatology of the American Medical Association respectfully requests the trustees of the American Medical Association to appoint a committee from the sections most immediately concerned, whose duty it shall be to devise practical means and methods of accomplishing the foregoing specified purpose; and further

Resolved (3) That the representatives of this section in the House of Delegates be requested to present these preambles and resolutions to the House of Delegates, and to ask its endorsement.

It was moved and seconded that the resolutions be adopted. Carried.

The Secretary stated that the foregoing preambles and resolutions came regularly into his hands and had been referred to the Reference Committee on Hygiene and Public Health.

Report from the Reference Committee on Hygiene and Public Health

Dr. J. W. Schereschewsky, Chairman of the Reference Committee on Hygiene and Public Health, then reported as follows:

The committee reports back the resolutions submitted from the Section on Dermatology with the recommendation that they be approved by the House and referred to the Council on Health and Public Instruction for action.

(It was moved and seconded that the recommendation of the Reference Committee be concurred in. Carried.)

RESOLUTION CONCERNING MIGRATION OF INDIGENT CONSUMPTIVES

WHEREAS, The National Tuberculosis Association, through investigations of its Committee on Indigent Migratory Consumptives, covering the last fifteen months, has found:

That there is a large migration of indigent consumptives to the Southwest in search of health;

That out of 1,786 cases, largely indigent or potentially indigent, reported from the Southwest in the last six months, 738, or 41.3 per cent., had been definitely advised to go there by physicians;

That this migration of indigent and potentially indigent consumptives is ill advised in that it causes much needless suffering and loss of life brought on by inadequate care, worry, homesickness and lack of proper food, which are conditions too frequently experienced after arrival; and, furthermore,

That the migration of this group is a menace to the public health, both during migration and after arrival, and is a financial drain and social burden to the communities to which the migration goes. Therefore, be it

Resolved, That in order to check this unnecessary and undesirable migration, physicians throughout the country be not only requested but urged *not* to advise their tuberculosis patients to migrate to the health resort states, unless such patients have sufficient funds to properly provide for their necessary care and comforts for at least one year.

AMENDMENT TO THE FOREGOING RESOLUTION. *Resolved*, That the Section on Preventive Medicine and Public Health hereby requests the House of Delegates to instruct the Council on Health and Public Instruction to investigate and report on, at the next annual session, the migration of consumptives from one state to another throughout the Union and the number of indigents so foisted on one state by another, and report definite suggestions to prevent this constant undesirable migration.

The Reference Committee on Hygiene and Public Health reports back the foregoing resolution with the recommendation that it, as amended by the Section on Preventive Med-

icine and Public Health, be approved by the House and be referred to the Council on Health and Public Instruction.

(It was moved and seconded that the recommendation of the committee be concurred in. Carried.)

RESOLUTION ON SALE OF ENDOCRINE PREPARATIONS

At the last Annual Meeting of the Surgical Section of the Medical Society of the State of New York, the following resolution was passed:

WHEREAS, The promiscuous use by the laity of preparations of the glands of internal secretion has led to manifest harm; and

WHEREAS, The uncontrolled use of potent glandular derivatives carries with it the danger of self-medication, be it

Resolved, That the Surgical Section earnestly request that the American Medical Association take the necessary steps to prevent any endocrine preparation being sold to the public except on a physician's prescription.

The Reference Committee on Hygiene and Public Health endorses the principles embodied in this resolution and recommends that the House of Delegates instruct the Council on Health and Public Instruction to investigate the matter in cooperation with the U. S. Public Health Service and report with appropriate recommendations at the next annual session.

(Dr. Arthur T. McCormack, Kentucky, moved the adoption of the resolution. Seconded and carried.)

RESOLUTIONS ON LEPROSY

The following resolution has been submitted by the Section on Preventive Medicine and Public Health:

WHEREAS, Leprosy is a national menace.

Resolved, That the House of Delegates be requested to ask the American Public Health Association to call a national conference to discuss every phase of the problem to the end that the public may be educated to the insidious spread of the disease, the possibility of cure or arrest in the earlier stages of the disease, and the necessity of segregation.

The Reference Committee on Hygiene and Public Health reports favorably on this resolution and recommends its approval by the House of Delegates.

(Dr. Arthur T. McCormack, Kentucky, moved that the resolution be referred to the Council on Health and Public Instruction with power to act. Seconded and carried.)

RESOLUTION OF THE SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

The Reference Committee reports favorably on the following resolution regarding the selection of a site for a national leprosarium, and recommends that the matter be referred to the Council on Health and Public Instruction:

Resolved, That the board charged with the responsibility for selecting a site for a national leprosarium be requested to convene at the earliest possible moment and arrive at a decision as between the various sites offered; and that the Surgeon-General of the U. S. P. H. S. be urged immediately thereafter to establish said national leprosarium as provided by Congress.

(Dr. Frederic E. Sondern, New York, moved that the recommendation of the committee be concurred in. Seconded and carried.)

Resolution of the Reference Committee on Hygiene and Public Health

The Reference Committee on Hygiene and Public Health presents the following resolution and recommends its adoption:

Resolved, That the American Medical Association commend the activity of the U. S. Public Health Service and the several state health departments in the treatment and prevention of trachoma.

(On motion, duly seconded and carried, this resolution was adopted.)

Submitted for the Reference Committee,

J. W. SCHERESCHEWSKY, Chairman.

(Dr. W. E. Anderson, Virginia, moved that the report of the Reference Committee on Hygiene and Public Health be adopted as a whole. Seconded and carried.)

Report of Reference Committee on Reports of Officers

Dr. Thomas S. Cullen, Maryland, Chairman, presented the following report of the Reference Committee on Reports of Officers:

The several reports referred to this Reference Committee have been considered by the committee, which submits the following report.

REPORT OF SECRETARY

From the Secretary's Report, we learn that the membership in the state societies totals the astonishing number of 83,338 physicians, and that the Fellowship of the American Medical Association consists of 47,045 members. There has been a net gain of 1,633 Fellows during the year.

The Secretary chronicles the death of Dr. Emery Marvel of Atlantic City, Second Vice President of the Association, and the brother of Dr. Philip Marvel, Chairman of our Board of Trustees.

The Secretary also announces the death of Dr. Elmer Ernest Southard of Cambridge, Mass., Chairman of the Section on Nervous and Mental Diseases.

In the section devoted to organization, the Secretary gives a timely warning. "There is a possible danger which should be guarded against—namely, a multiplicity of organizations in the same territory having practically the same objective. Whenever an unnecessary new organization in an already occupied territory is effected, there is always the danger that rivalry will result between the two organizations which consciously or unconsciously will interfere with the effectiveness of the organization of the medical profession in that locality."

Your committee would like to emphasize the Secretary's warning.

The Secretary's report is short, but contains much valuable information.

REPORT OF THE BOARD OF TRUSTEES

Your committee has read with much interest the report of the Board of Trustees, and wishes it were possible for each member of the Association to have the opportunity of visiting the Association Headquarters, with its numerous Council and bureau headquarters, and to watch the printing of THE JOURNAL and of the monthly medical publications of our Association.

When it is realized that the total gross income for the year was nearly \$800,000, one gathers some idea of the stupendous task the Editor and General Manager and the Trustees have before them.

One of the most striking things in the report is the publication of the Spanish edition of THE JOURNAL. The subscription list at the end of 1919 totaled 2,908. As mentioned in the report, this venture "was undertaken at the request of the International Health Board of the Rockefeller Foundation, which agreed to pay half the loss. The actual loss to the Association to date has been less than \$10,000, which amount promises to be returned with more than gratifying results within the first five-year period of its publication."

The committee feels that this carrying of the Association publication to all parts of South America and to other Spanish speaking countries will be of inestimable value and further, that it will be a most potent factor in cementing the already very cordial relations existing between these countries and the United States.

Your committee was also impressed with the excellent circulation and financial showing made in the publication of the special journals. It noted with interest that the ARCHIVES OF SURGERY will make its initial appearance in July.

The QUARTERLY CUMULATIVE MEDICAL INDEX is of great value to the medical profession, and your committee was pleased to learn that notwithstanding the amount of labor and expense in its publication, the loss was less than \$2,000.

A perusal of the Trustees' Report, "Cooperation of the Pharmaceutical Houses," is well worth the time of every member of the profession, and your committee would emphasize the statement of the trustees: "The Council, constituted of scientific men, working without remuneration in the interest of scientific medicine and the medical profession expects—and rightfully—the cooperation and support of the members of that profession. What is needed, therefore, is the active, sympathetic cooperation of physicians; the cooperation of pharmaceutical houses will follow as a matter of course."

Your committee would go still further and move that a vote of thanks of the House be extended to those scientific men who have devoted so much valuable time to the welfare of the Association.

The paragraph dealing with the Propaganda Department is most enlightening. It is doing a wide and varied work. The trustees say of it: "As a clearing house for information on the subjects with which it deals, it proves a boon alike to the profession and the public."

In the paragraph entitled "Increased Expenses," the trustees say: "The steadily increasing cost of production is likely to cause serious concern if it continues much longer." They then give a detailed report of the increased cost.

From a perusal of the Trustees' report, it is perfectly evident that they are exercising just as much care and judgment as they would if handling their own individual affairs, and the members of the Association may, with confidence, abide by their fidelity to their trust.

The Board of Trustees recommends that the House of Delegates direct the Council on Medical Education and Hospitals to substitute the term "Approved Hospitals" for that of "Standardized Hospitals" in its official reports and publications.

In this, your committee heartily concurs.

ADDRESS OF DR. ALEXANDER LAMBERT, PRESIDENT OF THE
AMERICAN MEDICAL ASSOCIATION, TO THE
HOUSE OF DELEGATES

Your committee read with much interest the President's sketch of the gradual evolution of the hospital from its beginnings until the modern hospital resulted, and were surprised and gratified to learn that nearly all the large associations in any way related to hospital management, nursing and the medical and surgical care of the sick were getting together to take stock of existing conditions, and to formulate plans for the betterment of hospitals and for the more adequate care of the sick entering their institutions.

The President in his address said: "The subject is of such great and constantly increasing importance to the medical profession that it is time the American Medical Association should take cognizance by special action of a subject of such vital interest to its members, and should lend its support and influence through definite and continued action."

That the Association has appreciated the importance of this matter is indicated in the report of the Board of Trustees, which says: "At the meeting of the Association in Atlantic City, in 1919, the House of Delegates adopted the following resolution, which was presented by the Reference Committee on Reports of Officers:

"That the Trustees be instructed to establish a Council on Hospitals as an independent body, or a Bureau on Hospitals as a body subsidiary to one of the already existing councils, the details of the organization to be left to the trustees with power to act."

The Trustees further say, "In conformity with the statements made above, the board recommends to the House of Delegates the change in name of the Council on Medical Education to the "Council on Medical Education and Hospitals."

"In view of the fact that no existing organization has the legal power to standardize hospitals, therefore: The board recommends that the House of Delegates direct the Council on Medical Education to substitute the term 'Approved Hospitals' for that of 'Standardized Hospitals' in its official reports and publications."

This House of Delegates at its meeting on Tuesday, April 27, changed the name of the Council on Medical Education to that of the "Council on Medical Education and Hospitals."

As pointed out in detail, in the Trustees' report, the Council on Medical Education has a vast amount of valuable data relative to the hospitals of the United States. This was gradually accumulated, as in the medical centers the hospitals and medical schools were of necessity so intimately associated, the one with the other, that in such instances it was essential to gather full data relative to the hospital at the time the medical school was inspected. These data will be of great value to all those associations engaged in this splendid work.

The Board of Trustees, also, is greatly interested in the furtherance of the work, and will do all in its power to make easy the task of the Council on Medical Education and Hospitals.

We are deeply indebted to Dr. Lambert for having made this important question the subject of his address to the House of Delegates, and we are more than pleased that this House has so promptly ratified the request of the trustees and set the necessary machinery in motion.

That the Council on Medical Education and Hospitals next year will have much to say on approved hospitals, we have no doubt whatsoever.

REPORT ON THE ADDRESS OF THE SPEAKER OF
THE HOUSE OF DELEGATES

The recommendations of the Speaker relative to the Ad-Interim Committee and to the method of nominating the standing committees have already been acted on by the House of Delegates, and hence need not be considered here.

His suggestion that it might be advisable to reduce the number of the trustees to seven or to five members and subdivide the United States into trustee districts, is worthy of serious consideration. Your committee feels that the number of trustees might well be reduced to seven, and would suggest that the recommendation of the Speaker be given serious consideration by the House at the next annual session, and that the matter be at once referred to the Judicial Council, in order that it may report a concrete proposition at the next session.

Your committee also feels that it would be well for the House of Delegates, next year, to consider the Speaker's suggestion that each section unit of the Scientific Assembly should indicate, by nomination to the House, those whom they would approve for the Presidency and Vice Presidency. This, as the Speaker has well said, "will put before the House many potential presidents for consideration, both for immediate and subsequent elections."

Your committee endorses most emphatically the Speaker's suggestion relative to the establishment of a separate governmental department of public health, and urges on this House the wisdom of at this time placing itself squarely behind the movement looking to the speedy establishment of a cabinet office devoted solely to health matters, and presided over by a member of the medical profession.

In order that this matter may receive immediate consideration, we recommend that the Council on Health and Public Instruction be requested to study the subject carefully from every angle, and then to enlighten the entire membership of the Association as to the best means of securing the establishment of this cabinet physician.

Your committee fully concurs in what the Speaker has said relative to compulsory military training, and feels that the House of Delegates of the American Medical Association should place itself on record as being in thorough accord with the principle of compulsory military training.

Your committee read with the keenest appreciation the beautiful tributes of the Speaker to the memory of our departed colleagues, Floyd M. Crandall, C. E. Cantrell and Clinton P. Meriwether, and would respectfully suggest that copies of these tributes be sent to the families of these "three upright, tried and true physicians."

Your committee feels that this is the time and place to express, on behalf of the House of Delegates, our deep appreciation of the masterly way in which our Speaker has guided the deliberations of the House. He has been the only Speaker that the House has ever had; he has conducted the business of the House with justice and dispatch, and with an understanding and kindness that could not be excelled, and his rare sallies of wit have smoothed out many difficulties. On behalf of the House, we can truly say, There is only one Hubert Work.

THOMAS S. CULLEN, Chairman,
F. B. LUND,
HOLMAN TAYLOR,
B. R. McCLELLAN,
C. R. OGDEN.

The report was considered section by section, and on separate motions, duly seconded and carried, was adopted.

Dr. Thomas S. Cullen, Maryland, then moved that the report be adopted as a whole.

Seconded and carried.

Resolution of Thanks to Senator Owen

Dr. Oscar Dowling, Louisiana, asked unanimous consent, which was granted, to introduce the following resolution:

WHEREAS, The American Medical Association has repeatedly and consistently advocated the establishment of a Department of Public Health, and

WHEREAS, Senator Robert L. Owen, of Oklahoma, has whole-heartedly supported this proposition and made every possible endeavor to cause the enactment of a law creating a department, be it

Resolved, That the American Medical Association tenders to Senator Owen a vote of thanks in recognition of genuine service to humanity.

It was moved that the resolution be adopted.

Seconded and carried.

Supplementary Report of the Council on Health and Public Instruction

Dr. Milton Board, Kentucky, member of the Council on Health and Public Instruction, presented the following resolution, which was adopted April 28, 1920, by the Council on Health and Public Instruction:

WHEREAS, The House of Delegates of the American Medical Association, at the 1917 session at New York, adopted a resolution declaring that alcohol was not a stimulant, nor a food, and was of little if any value as a drug for internal administration, and

WHEREAS, The statement was made during the recent epidemic of influenza that whisky was necessary in the treatment of this disease, and that avoidable suffering and death was resulting through lack of whisky for this purpose.

Resolved, That the House of Delegates of the American Medical Association reaffirms the resolution adopted in 1917, and further records its opinion that whisky is not necessary for the proper scientific treatment of influenza.

It was moved and seconded that the resolution be adopted.

After discussion by Drs. C. Van Swalenburg, California; Arthur T. McCormack, Kentucky; James F. Rooney, New York; Charles J. Whalen, Illinois, and Randolph Winslow, Maryland, which brought out the opposition of certain of these speakers to any action which might be construed as imposing on the physician inability to prescribe what he thinks is necessary in the treatment of his patient, a motion was made by Dr. J. H. Wilson, Pennsylvania, that the resolution be tabled.

Seconded and carried.

**Telegram on Tuberculosis from Surgeon General,
U. S. P. H. S.**

The Secretary asked unanimous consent, which was granted, to read the following telegram from the Surgeon General of the United States Public Health Service:

Washington, D. C., April 27, 1920.

President, American Medical Association,
New Orleans, La.

I desire to urge more active participation by the general practitioner and by general hospitals in treatment of tuberculosis to insure earlier diagnosis, properly trained interns and other personnel to popularize treatment in the home climate, and to provide additional facilities. I earnestly endorse the resolution passed by the National Tuberculosis Association in 1916, recommending that general hospitals should admit tuberculosis patients and provide separate wards for that purpose. Sanatoriums and specialists in tuberculosis will always be needed and we should have more of them, but I believe that success in the antituberculosis campaign is largely dependent on, first, convenient facilities for observation and prompt treatment of patients with open tuberculosis; and second, in a sharpened perception and higher degree of skill by which the family doctor will make an early diagnosis or even forestall the development of clinical tuberculosis in the adult before a definite diagnosis is possible; to provide adequate care for tuberculous ex-service men and others, and protect infants from infection. Enlist the aid of the general practitioner, allay phthisophobia, and improve home treatment of tuberculosis. The opening of general hospitals to this most common of all serious diseases will materially assist.

CUMMING, Surgeon General, U. S. P. H. S.

It was moved that the telegram be referred to the Board of Trustees, specifically empowering that body, at its discretion, to retransfer the subject matter or any part thereof

Seconded and carried.

Appreciation of Hospitality at New Orleans

Dr. M. L. Harris, Illinois, moved that the American Medical Association, through its House of Delegates, express by a rising vote its great appreciation of the extremely gracious manner in which the medical profession, the charming ladies, and hospitable citizens of New Orleans and Louisiana have entertained the Association and its guests during this session.

Seconded and unanimously carried.

On motion of Dr. John E. Lane, Connecticut, the House of Delegates adjourned.

ADDENDUM**Report of the Committee on the Narcotic Drug Situation
in the United States**

At the present time the people of the United States are awake as never before to the menace of the narcotic drug situation. This situation was made acute by the activity of the federal authorities acting under recent decisions of the U. S. Supreme Court, which decisions interpreted the Harrison Narcotic Law as applied to the practice of medicine. Under the social pressure exerted by the demand for facts and guidance, the medical profession should take the lead to which their position entitles them, and should not be compelled to follow in the wake of the great work already begun of stamping out drug addiction. That such a demand is not too radical or sensational is indicated by the fact that the narcotic drug habit is declared a "pestilence" by the New York City Board of Health in a recent amendment to its Sanitary Code. The profession has already responded to the situation by the appointment of committees for investigation in the hope of answering some of the most pressing questions. It is after a year of investigation, of conference, and of study that the committee appointed by the American Medical Association presents the following report.

There are certain preliminary questions which will be asked in some form by one who approaches the problem of drug addiction in a constructive attitude. These may be stated in the following form:

1. Can the use of narcotics as we now know it be said to be a "modern" problem?
2. Is there proof that drug addiction is widespread enough to constitute a social menace?
3. Is there genuine danger of an increase of drug addiction in proportion to the population?
4. What measures have been taken to meet the danger of drug addiction as it now exists? How far do these measures meet the present situation?
5. In what direction should the measures now employed in the treatment of drug addiction be extended?

We shall undertake to point out in this report that drug addiction in the sense in which we ordinarily use the word at the present time is a modern problem; that for certain reasons connected in part with commerce and the spread of civilization it is widespread; and that because of the growth of cities with their close association, as well as because of the ease of communication, there is grave danger of the rapid increase of the drug habit unless we take advantage of the present interest and get control of the situation through law and the care of those already victims and therefore centers of imitation-suggestion. We shall review in the words of men who know from actual experience with large numbers of cases the measures taken to meet the menace, and on the basis of conclusions from these facts shall recommend future action.

1. The poppy plant and its qualities were known throughout the Mediterranean basin at an early period. It is mentioned in the poetry of Homer and the words of Hippocrates. That such knowledge followed the travel routes of the ancient world is beyond question. But the use of opium to any great extent in the East, in India and China, seems to coincide with the spread of Mohammedanism and with the ban of Islam on alcoholic beverages. The use of the pipe and the custom of chewing spread rapidly from this period until the Chinese government took measures to stop it. The soil of India was peculiarly adapted to the growth of the poppy, where it early became an article of commerce as well as a government monopoly. In 1757, this monopoly passed into the hands of the East India Company, and from that company to the British government.

We have few facts to indicate that drug addiction came to notice as a menace among Western peoples until after the discovery of the opium alkaloids, particularly morphin, and after the perfecting of the hypodermic syringe. In 1855, Dr.

Dr. James Watson of Edinburgh advised the introduction of morphin by injection. It was only fifty-four years ago that the injection of morphin under the skin was introduced into France. While we know that opium smoking was known, particularly those in touch with the East, still in general the effects of opium smoking are less deleterious than those of morphin. Moissan¹ shows that the smoke of opium contains only a trifling amount of morphin. "The effect is apparently due, not to that alkaloid, but to such decomposition products as alcohol, acetone and pyridin, and hydropyridin bases." Browne² found that after smoking an opium mixture containing 8.98 per cent. of morphin, 7.63 per cent. was left in the dross, so that only 1.35 per cent. of morphin was carried over in the smoke or decomposed by the heat.

Still more recent than the use of morphin with the hypodermic needle is that of cocain and of heroin, now perhaps the greatest drug menace of city life. Heroin has been in use only about twenty years. The ease with which these drugs can be used as snuff ("happy dust"), and their recent use by gangsters, make this a separate problem. Already physicians are distinguishing morphin and heroin users as distinct types. We shall see the evidence in the reports incorporated herewith.

The facts stated indicate that we are not dealing with the opium smokers or eaters of another age and civilization, but with a problem which in one phase dates back to the middle of the nineteenth century with the introduction into use of the hypodermic needle. In another phase, heroin addiction dates back not more than ten years. As it is a recent problem, small wonder that we find the facts not classified. To those who know the facts regarding the rapid spread of the drug habit among the population, there seems no rational basis for alarm.

2. When we attempt to answer in terms of fact the question as to the extent of the use of narcotic drugs, we are surprised at the inadequacy of our information. If we turn to commercial statistics, we find that it is only very recently that the extent of the commerce in these drugs could be estimated. Laws and regulations governing their sale and use did not provide for tracing them from the importer to the ultimate consumer. But tables compiled from the registrations under the Harrison Narcotic Law and published in a report on the "Traffic in Narcotic Drugs," made by the Treasury Department of the United States under date of June, 1919, give some idea of the ramifications of the traffic. These tables showed the use by manufacturers in 1914 of 118,282 pounds of opium and of 767,283 ounces of morphin, heroin and cocain, in the order named. Of 4,092 manufacturers making proprietary medicines, 1,098 reported the use of either opium, morphin, heroin or cocain in their preparations. It has been estimated that fully 90 per cent. of the opium entered for consumption is used for other than medicinal purposes.

The system of registrations required by the Harrison Narcotic Law showed a total of 233,491 registrations—125,905 physicians, 42,240 dentists, 10,399 veterinarians, 48,196 retail dealers, 3,799 hospitals, 76 importers, and 831 wholesale dealers. This list gives some idea of the range of legitimate dealing with drugs. In addition, there is of course the large amount of smuggling from Canada and Mexico in addition to that possible from our own long coast line on the two oceans and the Gulf of Mexico. Even on the basis of what is known, the astounding fact is revealed that enough opium is consumed in the United States to provide every man, woman, and child with thirty-six doses a year on the estimate of 1 grain to a dose. When we contrast this with an annual per capita consumption in Austria of one-half grain; in Italy 1 grain; in Germany of 2 grains, and in France of 3 grains, we have some concept of the appalling extent of the use of drugs in the United States.

Probably the most serious attempt to determine the extent of drug addiction among the population was attempted by the compilers of the report of the Treasury Department to which we have referred. Five sets of questionnaires were issued. No. 1 was sent to the chiefs of police of 1,263 cities in the United States having a population of more than 5,000. Out of 760 replies, 372 reported no data. No. 2 was sent to 271 wardens of state, county and municipal prisons and reformatories. Of the 760, only 126 contained certain information. No. 3 was sent to 2,464 superintendents of state, county and municipal almshouses, 584 to superintendents of state hospitals, 471 to superintendents of insane asylums, and 582 to county and municipal hospitals—a total of 5,101

institutions. Replies were received from 1,520, about 30 per cent. of the number. No. 4 was addressed to 3,023 state, district, county and municipal health officers. Of the 983 replies received, 777, or 26 per cent., contained information of value. No. 5 was sent to 4,568 superintendents of private hospitals and sanatoriums. Only 227 returned information of any value. It will be seen from the most casual glance at the percentage of returns that they can have very little statistical value. When we subtract from those returned with something definite in the way of numbers the inevitable wastage from inexactness and carelessness, it is probable that 20 per cent. of the total possible amount of information would be a liberal estimate of the returns from this questionnaire. The most valuable result of the attempt was to show in a startling way the lack of proper records and reliable statistics as to drug addiction.

3. Estimates as to the number of drug addicts in the United States vary from 200,000 to 4,000,000. For reasons already stated, we distrust estimates based on the questionnaire material quoted above. If we estimate from the compulsory registration of narcotic drug addicts in the Greater City of New York district in force since July, 1919, we should find that there had been 7,741 registrations. But this is believed to be considerably less than the whole number resident in this district. In view of New York's transportation problems and traffic dangers, it gives us pause to find that 23 per cent. of 3,500 registered addicts were chauffeurs, motormen and drivers. Such a fact in itself shows the menace of the drug problem.

From the facts we have thus far presented, the extent of the use of drugs in the United States is proved more by the amount of legitimate commerce in them than by exact statistics as to the number of addicts. But the figures concerning this commerce speak for themselves. It is, however, well to remember that after our entry into the European conflict there was created in this country what was known as the War Trade Board. One of the duties of this board was to restrict the importation and exportation of merchandise to actual necessities. Opium and its alkaloids, also coca leaves and cocain were among the items restricted. Although this board has gone out of existence, certain functions performed by it are still in force and are performed by other departments. Decisions relative to the importation of narcotic drugs are now being made by the State Department. It is still true that England permits the exportation to this country of the drugs mentioned in the Harrison act only in cases in which the importer has obtained permission to import these drugs from the State Department.

4. The recognition of drug addiction as a national problem can be said to date from the passage of the Harrison Narcotic Law in 1914. In general, the scope and purpose of this law appear to be "a regulation of the distribution of narcotic drugs, and the limiting of their consumption by human beings to cases where they are administered, prescribed or dispensed to a patient by a physician or dentist." Another purpose, as later declared by the Supreme Court, was "to prevent the possibility of narcotic drugs being illegally disposed of without payment of the tax and without the use of order forms." The drugs covered are specified to be "opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof," and the persons entitled to register and required to pay a tax are limited to importers, manufacturers, producers, dealers, physicians, dentists, veterinary surgeons, and other practitioners permitted by some of the states.

State governments may impose restrictions and regulations governing the control of narcotic drugs, which, however, should be in conformity with the federal Harrison Narcotic Law. The present narcotic drug law in force in the state of New York, known as the Whitney Law, was framed with the idea of permitting the ambulatory treatment of addicts. "Ambulatory" treatment is the giving of a narcotic drug into the possession of an addict for self-administration. As the law now stands, it imposes on the entire medical and pharmaceutical professions a mass of annoying and petty restrictions and requirements which were thought to be necessary in order to prevent the abuse of the ambulatory method of treatment, which so temptingly lends itself to questionable practices by addicts and others. The whole weight of opinion is now against this method of treatment. It therefore seems unjustifiable to insist that reputable practitioners shall be inconvenienced by the necessity of familiarizing themselves with the technical requirements of two sets of laws and regulations not in harmony. When there is uniformity regarding treatment, classification and after-care of addicts,

1. Moissan, H.: *Compt. rend.* 4: 33 (Dec. 5) 1892, quoted from *Encyclopaedia Britannica*, Ed. 11.
2. Browne, F.: *Report on Opium*, Hong-Kong, 1908.

a long step will have been taken toward unification of state laws in harmony with the federal law.

CONFERENCES ON DRUG ADDICTION

In order to cover more fully the questions asked at the beginning of this report, particularly with reference to the treatment of addicts, the chairman of the committee held many conferences during the year in New York, Chicago, Washington, Philadelphia and Atlanta.

The following statements were taken from notes made at the several conferences. Those who revised the notes of their statements or furnished new statements are here quoted.³

CONCLUSIONS

As we review the testimony and experience of these physicians and officials who have dealt with thousands of drug users of all types of intelligence and character, it becomes evident that there is a high degree of agreement on the essential points. The main point, and the one on which all agree, is to get the patient off the drug as soon as possible. Whether this is to be done at once, or within a week, the sooner over, the better for the patient.

There was astonishing unanimity among those who took part in the conference as to the evil effects of the "ambulatory treatment," the giving of a narcotic drug into the possession of an addict for self-administration, with no control over the number of physicians furnishing a supply. This method of treatment is proved a failure, and there was agreement that it should be forbidden.

We think it is also apparent that the habitual users of narcotic drugs may be divided into two classes. In Class 1 we shall place all those who suffer from a disease or ailment requiring the use of narcotic drugs, such as cancer, and other painful and distressing diseases. Patients in this class are legitimate medical cases, and the physician should be ever mindful that his patient should protect him by not sharing the drug with others.

After excluding Class 1, we have left for consideration those who are addicts—those who use narcotic drugs for the comfort they afford and continue their use solely by reason of an acquired habit. In this class we have those who are suffering from a functional disturbance with no physical basis expressed in pathologic change.

We find in an article reviewing the literature dealing with the increased tolerance and withdrawal phenomena in chronic morphinism, by Dr. A. G. DuMez⁴ of the United States Public Health Service, this statement: "The only knowledge of a positive nature that we really have at present concerning these problems is that . . . there is evidently present in the blood serum of tolerant animals (dogs) during periods of abstinence a substance or substances which, when injected into normal animals of the same species, causes the appearance of symptoms identical with the so-called withdrawal phenomena."

We cannot object to Dr. DuMez picking this choice bit of lonely literature for a place in his conclusion; but we do object to the phrase introducing it: "The only knowledge of a positive nature that we really have at present concerning these problems is that, etc."

In a reply to a letter calling his attention to this phrasing, Dr. DuMez wrote under date of March 17, 1920: "In my opinion, however, that portion of the concluding paragraph which states, 'And there is evidently present in the blood serum of tolerant animals (dogs) during periods of abstinence a substance or substances which, when injected into normal animals of the same species, cause the appearance of symptoms identical with the so-called withdrawal phenomena,' has not been conclusively proven." A word to the wise is sufficient.

We turn to the consideration of the persons classified as addicts after excluding all those who suffer from a disease calling for the use of narcotic drugs, and with the conviction that we are dealing with functional conditions for which the remedy is the withdrawal of the drug. On the basis of the testimony we have submitted in this report we suggest

the following subdivisions of Class 2, in which we include addicts as just defined:

1. Correctional cases.
2. Mental defectives.
3. Social misfits.
4. Otherwise normal persons.

Such a classification as the one just suggested would aid in the solution of one of the most pressing problems connected with the treatment of drug addicts—the problem of after-care. All the testimony of those present at the conference agreed that if the addict is permitted to return to his old surroundings before he is built up physically, mentally and morally, a discouraging number return to the drug habit. But if they could be studied in an institution of mental and physical hygiene after they are taken off the drug, this result could in many cases be prevented. The correctional cases should be committed to institutions with no age limit—from the cradle to senility, if necessary. If they show marked improvement, they could be put on probation under the care of a technically trained person acting as probation officer. With defectives, institutional care must be provided where they can be comfortable and often self-supporting, but where they shall not be permitted to reproduce their kind. As to the social misfits and the otherwise normal, inasmuch as up to the present no completed treatment in the way of analysis and therapy has been provided, we shall devote the succeeding paragraphs to a consideration of what can be done for these classes of addicts.

THE PROBLEM OF THE SOCIAL MISFIT

When one finds himself in a situation to which adjustment and adaptation seem almost hopeless, there are two courses open. He can use his energy and initiative to alter the environment; or he can seek escape from the grim reality of the situation in an inner change. The adolescent often seeks escape in day dreams of a future which can be realized. For many emotional persons, religion, with its esthetic forms and duties, gives relief. Another class, sometimes because of constitutional inferiority, again perhaps because the situation is really hopeless, develops a neurosis or psychosis. Many geniuses belong to this class. Just why others under the same stress "neither wince nor cry aloud" may not be because of sturdy ancestry makes for stability; it may be that life has not given that which constitutes a terrible experience.

The social misfit has become much more of a problem with the development of individualism and rationalism. An earlier world accepted unhappiness and disease with resignation as the hand of Providence. Strangely enough, with the accumulation of an economic surplus and shortened hours of labor has come the problem of getting into the right place to enjoy the surplus and the leisure. Unremitting toil and consequent deadened nerves prevented such problems as arise with the change from a "pain economy" to a "pleasure economy," so that it may be said that a society which has enough of a surplus for leisure will also have more misfits. This is shown by the fact that these misfits are found in all social strata.

It is within a generation that a drifting industrial population with its enormous labor turnover has brought home to the commercial world what an expense on business is the social misfit, who is also an economic misfit; for the restlessness of inner life works its way out in drifting from job to job, listening to any agitator who assures him that this dissatisfaction and restlessness are the fault of some one besides himself. The studies of strikes made by men like Carlton Parker and Ordway Tead have brought it home to us that the basal instincts must be satisfied if organized society is to last. We know that the misfit can no longer be ignored. He is too numerous; he has learned the lesson of organization; and he has learned through association means of cheap satisfaction that deaden for a time his elemental cravings, even though they return him to society more of a menace and a care than before.

Both because society grows more humane and because the social sciences have taught us that humaneness has a practical bearing on group success, we are asking ourselves today why we have such numbers of misfits in society; men and women

3. The individual statements are included on a reprint of this report, which will be sent on receipt of a stamped addressed envelop.

4. DuMez, A. G.: Increased Tolerance and Withdrawal Phenomena in Chronic Morphinism, J. A. M. A. 72: 1069 (April 12) 1919.

who find their living conditions intolerable; who will seek refuge in the cheap and transient relief of drugs. Since modern psychology has taught us the importance of the infantile patterns in later life and of the life-long influence of early education, we have turned to scrutinize more closely just what our so-called democratic education has done to make life happier and more successful for the masses.

Even before the great war, earnest educators like Madame Montessori and Professor Dewey had been calling attention to the fact that our educational system was an anachronism: perfected in the cloister; disciplinary in character; made to fit a life of cultured leisure; teaching almost nothing of the life into which the child must go at the completion of his school life. With the older apprenticeship system destroyed by the minute subdivision of labor of the modern factory system, the child left the school to go to a factory where he learned some small process, often a "blind alley." When the terrible monotony of the process drove him out, there was no other minute process waiting for him in some other factory—no vision of what it all meant, of his work as a part of the whole. Thus, he marries, burdens himself with family cares, and becomes tied to the process. If he has "nerves," some day he will get a nightmare vision of himself as a piece of social wastage, a victim of conditions far more far-reaching than his individual life. When he becomes organized and vocal, society awakens to the fact that he is not an I. W. W., a bolshevik, or what not. He is not wholly to blame.

Modern psychology pictures the original nature of man as eternal restlessness, curiosity and constructiveness. The child loves to take things apart and to "make things." Moreover, we, all of us, have enough of the self-regarding instinct for a social utilization of these tendencies; that is, we like to do things which we feel are useful and for which we are given credit. If such primary instincts are forever thwarted, the social misfit develops. If he finds his environment impossible to manipulate through lack of training, he will seek forgetfulness in some form of self-gratification. And some form is usually found in the unwholesome environment of the ordinary city street. If he comes in contact with those using narcotic drugs, they will find him responsive to imitation-suggestion.

Within the past ten years the vocational guidance movement has been developing to meet such educational and economic situations as we have outlined. The aim of this movement is to get hold of the child while he is still in school, to study his mental make-up, to arouse in him ambition, and then to give him guidance into a vocation for which he seems fitted. It has grappled with the problem of the child who asks for his working papers as soon as he is old enough, who often has no reason except that he is "tired of school." Studies made of these children in a number of cities show that without guidance they almost invariably drift into the blind alleys of the commercial and industrial world, from which they could be saved by a longer school life with specific trade or commercial training. The cities of Cincinnati, Chicago, Boston, Philadelphia and New York have more or less well-developed systems of guidance to lessen the number of misfits, and are working to increase their usefulness by devising better vocational, trade and commercial tests as well as by placement and careful follow-up work. This whole movement is based on the belief that happiness is a by-product of normal, useful activity, and that the child can be directed along the way, whether he be brilliant, mediocre or stupid. Its social philosophy teaches that the goal of society is to provide so flexible a social system that there shall be no misfits among the normal members of a population as a result of lack of guidance and training in the years when vocational choices are made.

If a proper scheme of vocational guidance can be put into operation, we shall have a better satisfied and happier industrial population, with fewer misfits from this social stratum to become gangsters and narcotic addicts. And since the heroin user is young, it is not too late to reclaim him to normal and happy living by vocational guidance and training in an institution which will teach him to face a new and

useful life after he is cured of his habit. The therapeutic value of vocational training has been evidenced with the cases of shell shock among the soldiers who are being reclaimed to happiness and usefulness under the direction of the federal Bureau for Vocational Education; and doubtless the same results can be obtained in the reclamation of youths who have lost their touch with reality in a less noble cause.

It is already understood that much of the success of vocational guidance depends on the follow-up, even with normal children, to counteract the restlessness of youth which impels them to move on at the first difficulty. Statistics show an average of three jobs for working children in the first two years. To counteract this tendency with the cured addicts, it will be imperative to devise a wise probation system. Many an otherwise hopeless misfit can be permanently saved by the supervision of a wise and experienced probation officer, acting with authority.

Under a proper system of classification in the institution for the after-care of the addict, it will be necessary to segregate the correctional, the mental defective, and the social misfit groups. We already have state provision for the care of correctional cases and mental defectives. The facilities may have to be increased, but the plan for care and training is already known through the work of such institutions as Letchworth Village for defectives and Elmira for correctional cases. But the problem of the misfit and of the drug user who appears normal except for the drug weakness has yet to be solved. That a solution is worth while is shown by the economic loss to the community resulting from their productive failure, their irregularity at work, and the tendency through their example toward an increase in the number of addicts.

When addicts of these types (social misfits and otherwise normal persons) are sent to an institution where they are to be restored to normality by both mental and physical therapy, the misfit can be aided by vocational guidance, as we have shown. By a study of the addict which will include intelligence and vocational tests, there is no reason why his aptitudes may not be recognized and developed as well as in the cases of the wounded soldier who finds it necessary to change his life work. And the very interest aroused by this new occupation, together with the absorption necessary in learning a new process, will lead the addict to forget the past. When the new vocation is entered, a judicious follow-up system should be maintained lest in moments of discouragement old memories reawaken and urge a return to the old haunts and habits.

ADDICTS OTHERWISE NORMAL

As to those persons otherwise normal who have become drug addicts, here we have a complicated problem. We may be dealing with a man or woman who has been doing work for which he is well trained and fitted. We may have such a person working under too great strain. Then the "last straw" is laid on the burden, and in the altogether human search for relief, even for a few hours, the drug is perhaps taken occasionally, and the habit finally formed. The literary genius who has to finish his manuscript for the publisher; the social worker whose district must be covered at whatever cost to herself; the physician or nurse with an epidemic sweeping the city, and who must not stop—any of these may realize too late that he has become a slave to the drug. What shall we do with him?

The newer psychology has distinguished the conscious activities of the human mind from its subconscious activities—those that take place on another level, and which include lost memories, impressions from the earliest period of infancy, and the effects of shock which have expanded beneath the level of the daily activities and which have spread from one association center to another until all the activities of life are influenced by the background of experiences that can be recalled with the greatest difficulty, if at all. This subconscious life, sometimes of great intensity, has a tremendous pull on the conscious daily life. We like people because of their resemblance to others whom we have forgotten. In the domain of smell are registered impres-

sions a thousand times as intense as those of taste. We have here a causation of likes, dislikes, attractions and repulsions whose origin we cannot understand. And buried in this part of the mind's activities is often the answer to the question why an otherwise normal person, physically well developed, makes decisions which we call regressions. Such regressive tendencies, if yielded to, mean disaster to the very soul.

Psychoanalysis as a form of mental therapy undertakes the reclamation of this unexplored part of the ego. And here is the greatest hope for the salvation of the otherwise normal person whose will is not strong enough to shake off the drug habit.

If, under psychoanalysis, the "sore spot" in the individual subconscious mind is discovered and a process of reeducation begun, the theory holds that there will be released an increased energy. And the reclamation of this "normal" addict will depend on the power he will have, under guidance, to direct this libido into higher thought and emotional levels. Studies made of individuals much given to day dreaming indicate that these dreamers have an oversensitive ego which makes their outer adjustments difficult, and thus makes for regression. The power to generalize their experiences is of the greatest assistance to these persons. And the pain of the world can be expressed in music; the longing of the world in marble, in painting, and in other creative forms. It is well recognized that man is a constructive animal, and is willing to spend himself in work in which he has joy and which brings him the respect of his fellow men. Teach this otherwise normal drug addict to irradiate and sublimate this libido which he is so wantonly wasting on the fetish of drug addiction. His strong desire is a measure of his energy. Let him be taught to direct that energy into wholesome channels which will give him as great pleasure and which will recreate his soul.

Such is the task of the men and women in charge of the institution for the educated men and women who are drug addicts: They are to be both trained and sympathetic, wholesome and strong-willed; friends and guides into a new life in which the base desires for self-gratification is, not suppressed, but directed into new channels which will make for the happiness of the individual and the race.

RECOMMENDATIONS

We therefore recommend:

1. That the ambulatory treatment of drug addiction, as far as it relates to prescribing and dispensing of narcotic drugs to addicts for self-administration at their convenience, be emphatically condemned.

2. That heroin be eliminated from all medicinal preparations, and that it should not be administered, prescribed or dispensed; and that the importation, manufacture and sale of heroin should be prohibited in the United States.

3. That the bills introduced by Senator France, No. 2785, and Representative Rainey, No. 11778, to provide aid from the United States for the several states in prevention and control of drug addiction and the care and treatment of drug addicts be approved, and that Senator France and Representative Rainey be so notified.

4. In view of the statement in a government report that about 90 per cent. of the amount of narcotic drugs entered for consumption is used for other than medical purposes, the Treasury Department is respectfully urged to continue to study and report on the narcotic drug situation, including the question of government control of these drugs.

5. That the Bureau of Public Health Service of the Treasury Department be respectfully requested to continue the compilation of state laws and regulations relating to habit-forming drugs and bring them up to date.

THE SCIENTIFIC ASSEMBLY

THE OPENING GENERAL MEETING

Tuesday Evening, April 27

The opening meeting of the Association was held at the Shriners' Temple, and was called to order at 8:30 p. m. by the President, Dr. Alexander Lambert, New York.

Prayer was offered by Bishop J. M. Laval.

Dr. Albert E. Fossier, Chairman of the Local Committee of Arrangements, announced the various entertainments to be given the members of the Association and its guests, and stated that the committee had earnestly cooperated with the officers of the Association to make the New Orleans session a success, both from a social and a scientific standpoint.

Addresses of Welcome

In the absence of Hon. Martin Behrman, mayor of New Orleans, Mr. A. G. Ricks welcomed the members and guests to New Orleans on behalf of the mayor.

ADDRESS OF WELCOME BY DR. HOMER DUPUY, PRESIDENT
OF THE LOUISIANA STATE MEDICAL SOCIETY

Dr. Dupuy said in part: On me is bestowed the distinguished privilege and great honor of bringing to this Association a message of cordial welcome from our great state society. We knew that when you accepted the invitation to meet in New Orleans, we had a task of some magnitude; but with a united profession, with considerate action, unified sentiment and irrepressible enthusiasm, we buckled down to the task, and it is now up to you to witness the results of our work.

New Orleans loves you; Louisiana loves you and honors you, and hopes that when you leave us, you will carry away with you happy and pleasant recollections of your visit to this city. We extend to you a hearty welcome to New Orleans.

ADDRESS OF WELCOME BY HON. JOHN M. PARKER,
GOVERNOR-ELECT OF LOUISIANA

Mr. Parker said in part:

Mr. President and Members of the American Medical Association: Today, probably for the first time in the history of Louisiana, we have made arrangements by which we see our way clear to take proper care of our insane asylums, our feeble-minded asylums, and the other institutions that stand close and dear to the heart of every sincere medical man.

Within the last few years in traveling over the state of Louisiana, I have been impressed with the fact that we do not give proper heed and devote proper care to those unfortunates that are left on our hands. We have overlooked too often the fact that those who are absolutely unable to help themselves and who have been dependent on the charity of state and cities represent a steadily growing number of people to whom you minister, and to whom your services as guardian angels are more needed than any other class of people in the world. I have made up my mind regarding one thing, and that is, while I am governor, no politics shall directly or indirectly creep into any of our institutions. (Applause.)

I am delighted to have the privilege of appearing before you. I want your help in this work. Our institutions should be regarded as sacred, and their interests upheld and zealously fought for by the members of your profession.

I trust that when you return to New Orleans in the next few years, it will be a source of great pleasure and pride for us to tell you what has been accomplished by having taken advantage of your valuable assistance and influence in connection with our institutions. (Applause.)

ADDRESS OF THE PRESIDENT

Admiral William C. Braisted was introduced as President of the Association, and delivered his address, entitled "The Obligations of Medicine in Relation to General Education," which was published in *THE JOURNAL*, May 1, 1920, p. 1203.

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SATURDAY, MAY 8, 1920

TETANY

The increased irritability of the nervous system associated with muscular tremors and occasionally convulsive seizures, a group of symptoms designated as tetany, not long ago appeared likely to find a scientific explanation in the study of the functions of the parathyroid glands. Excision of all of the latter leads to the characteristic nervous manifestations of tetany. These are also noted in man in association with gastric disease, particularly in patients who have long suffered from obstruction at the pyloric orifice. The attempt to relate gastric tetany to parathyroid insufficiency has encountered obstacles; for the parathyroid structures usually have been found to appear intact in these cases, and the condition is often relieved by gastro-enterotomy. It will therefore be understood why medication with parathyroid substance has been of questionable advantage in the treatment of gastric tetany. The results have been disappointing thus far, if they may not actually be described as failures.

Even if the cases of tetany, as they are seen during pregnancy and after parturition, in infants, in gastric disease, in certain occupations, and in parathyroid insufficiency have no apparent immediate etiologic relationship, it is not impossible that in ultimate analysis the increased nervous irritability may have a common metabolic cause. Wilson¹ and his co-workers at the Johns Hopkins Medical School found that, following parathyroidectomy in dogs, the equilibrium between acids and bases is displaced in favor of the bases, and that in tetany which develops after such a procedure there is well marked alkalosis. The results have been confirmed by McCann² at the Harvard Medical School, who agrees that there is a marked increase in the carbon dioxid-combining power of the blood plasma, coincident with the development of tetany.

McCann has extended the study to the phenomena of gastric tetany. He found that after operations on the stomach which exclude the acid secreted from the duodenum, tetany develops, accompanied by an increase

in the carbon dioxid-combining power of the plasma similar to that of parathyroid tetany. These facts have led McCann, like some of his predecessors, to the conclusion that tetany is a condition of alkalosis in which a disproportion between rates of secretion of acids and alkalis by the gastro-intestinal tract may be a factor.

A disproportion of acids and bases leading to accumulation of the latter—an alkalosis—might conceivably be due to a heaping up of alkali in the organism or to a withdrawal of acid such as the gastric juice represents. Tetanic symptoms can, indeed, be induced by excessive injections of sodium carbonate or bicarbonate. MacCallum³ and his collaborators have presented a somewhat different feature for consideration. They noted that when the pylorus is obstructed and the gastric juice with its hydrochloric acid is constantly removed, there ensues a decrease in the chlorin of the blood plasma and a consequent increase in the alkali reserve which becomes extreme. The electrical excitability of the nerves is heightened, and spontaneous twitchings arise. These are symptoms of gastric tetany. According to MacCallum, all this can be prevented by constantly furnishing a large supply of chlorids. He states that it is less easy to cure the condition by the administration of chlorids. It is easy to understand that sodium chlorid, which is reported to be efficacious in this experimental gastric tetany, might serve as a source of hydrochloric acid. But what becomes of the sodium ion? And why are chlorids more efficacious, as we are told, than acids? Here are seemingly conflicting factors which need to be reconciled or explained before a rational treatment of gastric tetany can finally be instituted.

RACIAL MORTALITY

The United States offers an opportunity for studying the mortality of various race stocks such as has probably never been presented before in the world's history. Diverse races of mankind are here gathered together under identical climatic and similar social and economic conditions. In the case of certain races, the absolute numbers are large enough to warrant definite conclusions. Several more or less elaborate studies of racial mortality in some of the Eastern states and cities have appeared since the census of 1890, and one of the most important of these has recently been published by Dublin and Baker.⁴

This investigation deals with the 1910 mortality of race stocks in the states of Pennsylvania and New York. Six nationalities, as distinguished by the country of birth, were present in numbers sufficient to justify differentiation: Austro-Hungarians, Russians, Italians, Germans, British and Irish. In Pennsylvania in 1910 these six foreign groups together comprised

1. Wilson, D. W.; Stearns, Thornton, and Janney, J. H., Jr.: *Biol. Chem.* **21**: 169, 1915; Wilson, D. W.; Stearns, Thornton, and Burlew, M. D.: *Ibid.* **23**: 89, 1915.

2. McCann, W. S.: A Study of the Carbon Dioxide-Combining Power of the Blood Plasma in Experimental Tetany, *J. Biol. Chem.* **75**: 553 (Sept.) 1918.

3. MacCallum, W. G.; Lintz, Joseph; Vermilze, H. N.; Leggett, T. H., and Boas, E.: The Effect of Pyloric Obstruction in Relation to Gastric Tetany, *Bull. Johns Hopkins Hosp.* **31**: 1 (Jan.) 1920.

4. Dublin and Baker: *Quart. Pub. Am. Statist. Assn.* **17**: 13, 1920.

18.0 per cent. of the total white population and 93.3 per cent. of all the foreign born; in New York 26.4 of the total white population and 86.9 per cent. of all the foreign born.

In correspondence with previous statistical investigations, it is shown that the group composed of the native born of native parents has a much lower mortality than the native born of foreign or mixed parentage and than the foreign born. This is true for both sexes and for virtually every age period; but the disparity is greatest at the adult ages. The foreign born and the native born of foreign or mixed parentage have mortality rates agreeing much more closely with one another than with the native stock.

Three of the foreign born groups (Austro-Hungarian, Russian and Italian) present mortality conditions which, when compared with those for the native born, are fairly favorable, except for those age groups exposed by industrial conditions to special occupational risks. Italians, for example, in Pennsylvania and New York State show, on the whole, little difference in their death rates from those prevailing in their home country.

Quite different is the position of the foreign born German, British and Irish living in the United States. In these groups the mortality is very high compared with the mortality in native born Americans of native parentage; for each racial group, moreover, the death rates in the United States are less favorable than in their native land, even apart from their greater liability to death from violence in hazardous employments.

Analysis of the rates from individual causes of death reveals some facts of great significance. As in previous inquiries of this sort, the outstanding feature with regard to pulmonary tuberculosis is the great handicap of the Irish. In both New York and Pennsylvania the rate for this cause among Irish males, ages 25-44, is twice as large as for natives; Pennsylvania, 376:185; New York, 663:352. The Irish also show high death rates from pneumonia, cancer, organic diseases of the heart and Bright's disease, although in their own country such excessive rates do not occur. At ages 65-84 Irish males at home show a mortality from Bright's disease of but 115 per hundred thousand as against the very high rates of 1,146 and 1,299 for Irish born males living in Pennsylvania and New York. The foreign born groups of German and British stock show a similar, although less striking, excess from pulmonary tuberculosis and from the so-called degenerative diseases. It is certainly noteworthy that while the rate for nephritis and Bright's disease in British males, ages 45-64, living in England and Wales was 116 per hundred thousand, the figures for Bright's disease alone among British born males living in Pennsylvania and New York were 240 and 288, respectively.

Dublin and Baker raise the point whether the common assumption that immigrants to this country rep-

resent the most vigorous strains among their own people is really justified. The results of this and other studies on racial mortality do not permit an unqualified affirmation. Those who maintain that centuries of economic and social struggle in the older countries have brought to the top the best racial material, leaving at the bottom the physically weak and consequently economically unsuccessful who seek to better themselves by emigration, may find some support in such mortality records as here cited. At all events, the importance of similar studies based on the results of the 1920 census is decidedly manifest.

FACTORS IN THE PRODUCTION OF EDEMA

The problems of the etiology of the various types of edema are far from being solved. The significance of a renal factor interfering with normal excretion has long been appreciated; but there are without doubt numerous extrarenal factors that may play an important part. Thus, alterations in the vascular permeability, preventing the customary passage of fluids from the blood vessels, may affect the circulation so as to damage the kidney functions. Experimental edema can be produced by the administration of certain poisons, such as arsenic or snake venom. Whether they act solely on the renal vessels or on capillaries elsewhere in the body is not always clear; at any rate they injure the vessels sufficiently to prevent the usual distribution or excretion of fluids, and edema results. Again, as illustrations of extrarenal factors in edema, it has been suggested that changes may occur in the physical or chemical character of the tissues so that they retain water in excess of their usual quota.¹

Epstein² has described cases of edema associated with parenchymatous nephritis in which a hydremia occurs accompanied by a diminished amount of protein in the blood.³ The latter is assumed to be due to loss of protein through the urine. Epstein advises the liberal feeding of protein as the most effective way of managing such cases. We have already referred to preliminary reports on the unexpected appearance of edema in animals that were kept on a diet largely made up of carrots.⁴ Even in the earlier stages of Kohman's investigation it appeared likely that the malnutrition responsible for the edema was not due to lack of fat to which "war dropsy" has frequently been ascribed but rather to an insufficiency of protein in the diet.

The further prosecution of these important studies has served to fasten responsibility for the edema in

1. These various factors are discussed by Hewlett, A. W.: *Pathological Physiology of Internal Diseases*, New York, 1917, p. 437.

2. Epstein, A. A.: Concerning the Causation of Edema in Chronic Parenchymatous Nephritis, *Am. J. M. Sc.* **154**: 638 (Nov.) 1917.

3. The theory is discussed in *The Cause of Edema*, Correspondence, *J. A. M. A.* **73**: 782 (Sept. 6) 1919.

4. Denton, M. C., and Kohman, E.: Feeding Experiments with Raw and Boiled Carrots, *J. Biol. Chem.* **36**: 249 (Nov.) 1918. Kohman, E. A.: A Preliminary Note on the Experimental Production of Edema as Related to "War Dropsy," *Proc. Soc. Exper. Biol. & Med.* **16**: 12 (April 16) 1919. *The Cause of War Edema*, editorial, *J. A. M. A.* **73**: 274 (July 26) 1919.

human's experiments even more convincingly on the protein factor.⁵ When young rats are fed diets in which carrots are the only source of protein, a large percentage of the animals develop edema. This is not due to a lack of fat or vitamins, as experiments specially planned to include an abundance of these have demonstrated. Salts do not play any appreciable part in the production of this type of edema, for even when the salt content is doubled there is no noticeable effect on the occurrence of edema. The latter is not

due to simple starvation or low calory intake, for when there is a mere replacement of the carbohydrate by an adequate protein, edema does not develop; and the possibility of protein feeding must be considered as a therapeutic measure. This is intended to signify that the suggestions just offered have universal application. Kahn⁶ has estimated the protein content of the blood in a number of cases of parenchymatous nephritis with edema of varying grades without finding deviations of the sort described by Stein and which, according to the latter, could be benefited by a high protein diet. Kahn regards the cases of so-called nephrosis described by Epstein as very rare. Reminding us of the remarkable stability of the blood serum protein level even in disease and of the difficulty in altering it appreciably by feeding protein, Kahn concludes that "feeding patients suffering with chronic parenchymatous nephritis on a protein-rich, fat-poor diet is a rather risky undertaking." In view of the striking experimental evidence and interrelations between protein deficiency and edema, however, clinical investigators should not abandon the suggestions emanating from the physiologic laboratory without more conclusive assurances that they cannot apply to human disease.

5. Kohman, E. A.: The Experimental Production of Edema as Related to Protein Deficiency, *Am. J. Physiol.* 51:185 (Feb.) 1920.
6. Kahn, Max: The Protein and Lipin Content of Blood Serum in Nephritides, *Arch. Int. Med.* 25:112 (Jan.) 1920.

Current Comment

THE PRESIDENT-ELECT, DR. HUBERT WORK

Since 1916, the House of Delegates of the American Medical Association has been a peculiarly efficient representative body. Delegates representing the organized medical profession of the United States have met, have expressed their individual views, have passed resolutions and taken action on questions of great moment to

our profession and to the nation, have participated in lively debate, and in a kindly, democratic manner, without friction or ill feeling. To no one is this state of affairs due so much as to Dr. Hubert Work of Colorado, first Speaker of the House of Delegates, and now President-Elect of the American Medical Association. Dr. Work was born near Marion, Pa., July 3, 1860. By a happy coincidence, the date of his birth approximates the most patriotic date in our history; his name indicates the chief function in his career. He was graduated from the University of Pennsylvania School of Medicine in 1885. Early in his professional career he was engaged in public medical service; during the late eighties he was a member of the State Board of Medical Examiners of Colorado; for four years he was president of the State Board of Health and later president of the Colorado State Medical Society. In 1904 he began his first



HUBERT WORK, M.D.
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

term as a member of the House of Delegates, and since that date he has served the American Medical Association continuously as a member of the House, as a member of the Judicial Council, and finally as Speaker of the House. Only those acquainted with the intricacies of parliamentary procedure can realize how well fitted Dr. Work has been for his task: always calm, reserved, and ever ready with kind comment or witty repartee, his spirit has infused into the body of delegates the desire for progress and cooperation, which has resulted in efficient action. With all his service to medicine and to the American Medical Association, he has yet given himself largely to other organizations. As a citizen he has achieved the distinction of candidacy

for the United States Senate and was defeated by a small majority. For several years he has represented his state as a member of the Republican National Committee, a position of no small importance in our political system. During the war, Colonel Work was medical adviser of the Provost Marshal General, and here his diplomatic qualities were of inestimable service in correlating the work of the medical department of the army with that of the Provost Marshal General's Office. In electing him to the highest position it has to bestow, the American Medical Association shows its appreciation of the worth of his services to the medical profession and to the public.

THE ANNUAL SESSION

Prior to the meeting there was considerable anxiety on the part of many concerning the success of the New Orleans Session of the American Medical Association, the anxiety being due to the supposition that there was not a sufficient number of hotels to accommodate the expected attendance. From various quarters came reports that men were not planning to attend because of this lack of hotel accommodations, and, naturally, those pessimistically inclined looked for a moderately small registration. As a matter of fact, the attendance at New Orleans exceeded the expectations of the most optimistic; the registration reached 3,681. Hence, so far as number is concerned, the Session was an immense success. But it was successful from every point of view—in the unusual social features provided by the hospitable physicians and citizens of the convention city; in the attention given to the exhibits, and in the scientific character of the work of the sections. The social features were typical of the city. The largest available hall was taxed to such an extent by the Carnival Ball, which took the place of the usual President's Reception and Ball, that many of those attending the session were unable to gain admission. The grand Fête Champêtre and Pageant at the City Park was a beautiful spectacle—it was such as could be presented in but few other cities. The House of Delegates, in an unusually important session, took timely action on questions of great interest to both the medical profession and the public, the details of which will be found in the published minutes. Among other things, an exhaustive report on the use and abuse of narcotic drugs was submitted; action was taken urging Congress to make necessary appropriations for the publication of the Medical History of the World War; and resolutions were adopted declaring opposition to the institution of any plan embodying the system of compulsory health insurance. The Local Committee on Arrangements and the medical profession of New Orleans and Louisiana well deserved the thanks conferred on them by the House of Delegates. Their untiring efforts made the New Orleans Session the success it was. In spite of the fact that the attendance was so large as to tax the hotel accommodations of the city to the limit, the Session will be remembered with pleasure by all who attended. The arranging for the annual session of the Association, including the provision of

numerous meeting places, large exhibit space and lodgings for from four thousand to five thousand physicians and their guests, is no small task. The cooperation of the Local Committee on Arrangements is the determining factor in the success of the Session. The New Orleans Committee, which had unique and difficult problems to handle, did its work well.

CONGENITAL ECTODERMAL DEFECTS

Congenital ectodermal defects, such as aplasia of the teeth or absence of circumscribed patches of skin, are by no means unknown to medical observers. The combined absence of teeth and hair is rarer. Perhaps the most unusual anomaly of the ectodermal tissues found in persons exhibiting a congenital absence of teeth, total alopecia, and also a lack of both sweat and sebaceous glands in the skin. A case of this sort, the second of its kind reported in the American journal and the sixth in the world's literature of the subject has been studied at the Mayo Clinic by Goeckermann. The patients of this type have usually presented features that suggest the existence of heredosyphilis. These were responsible for the cutaneous defects, one would expect to find signs of atrophic changes in the skin. Microscopic examinations of sections from the epidermal structures in the Rochester patient, however, showed a total absence of sudoriferous and pilosebaceous structures. There were no signs of regressive changes in the skin. There was an entire absence of such cell inclusions as might warrant an assumption that embryonal vestiges of lanugo hair and sweat glands had ever existed. Hence the influence of syphilis in the production of these congenital defects is probably nil. If it is present, this is probably only an incidental feature. Perhaps these congenital defects of the ectoderm are not as rare as medical history suggests. Frequently the persons involved are in excellent health and have no occasion to submit to such critical examinations as might reveal subtle defects of the skin. Only a few years ago the Stokes-Adair syndrome was an apparently rare condition. When attention was drawn to its precise identification, cases of heart block began to multiply in surprising numbers. Perhaps congenital ectodermal defects of the sort described by Goeckermann and exhibiting a total absence of sweat glands, an almost total absence of sebaceous glands, a hypotrichosis with absence of lanugo hair, and a dental aplasia, will be discovered to be less rare when it is appreciated that the features which they present actually exist.

1. Goeckermann, W. H.: Congenital Ectodermal Defect, with Report of a Case, *Arch. Dermat. & Syph.* 38: 396 (April) 1920.

Significance of Pain.—To understand the full significance of pain in any case, we have to know a great many matters which are still hidden from us. The tissues capable of producing pain, the nerves in whose distribution the pain is felt, the manner in which the pain spreads, and the laws governing the spread of pain; the character of the pain itself; the manner of its onset and its variations, and the phenomena with which it is associated, are all matters which it is necessary to understand before we are qualified to undertake an investigation into disease.—J. MacKenzie *Br. M. J.* 1:109 (Jan. 24) 1920.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Health Law Valid.—By the decision of Judge Leon McCord, the Montgomery Circuit Court, the State Board of Health Alabama was declared to have been created by a valid act, and will continue to exercise the duties of the administration of the state health law. An appeal has been taken by physicians of Birmingham who allege that in violation of the provisions of the constitution, the legislature provided that the board of health should be named by the Alabama Medical Association, a private corporation.

State Association Meeting.—At the fifty-third annual meeting of the Medical Association of Alabama held in Anniston, April 20-22, under the presidency of Dr. James S. McLester, Montgomery, Montgomery was selected as the place of meeting for 1921, and the following officers were elected: president, Dr. Louis W. Johnston, Tuskegee; vice presidents, Drs. Thomas J. Brothers, Anniston, and John C. McLeod, Opp; secretors, Drs. William R. Jackson and Vivian P. Gaines, Mobile, and Walter S. Britt, Eufala. Dr. Henry A. Christy of Harvard University delivered the Jerome Cochran lecture, on "Bright's Disease with Special Reference to Its Treatment."

CALIFORNIA

Higher Entrance Requirements in University of California Medical School.—It is stated, officially, that in and after August, 1922, students matriculating in the University of California Medical School will be required to have completed satisfactorily not less than three years of collegiate work. This raises the minimum collegiate requirement from two to three years.

ILLINOIS

Central Illinois Physicians to Meet.—The Central Illinois Medical Society will be the guests of the Decatur Medical Society, May 25. The principal address will be delivered by Charles Spencer Williamson, Chicago.

Personal.—Dr. J. Warren Van Derslice, Oak Park, has been elected president of the Colonial Club, Oak Park.—Dr. Edward B. Boone, Chandlerville, has been reappointed local surgeon for the Chicago, Peoria and St. Louis railroad.

Clinic for Rock Island County.—The Rock Island County Board of Supervisors has voted \$5,000 for the establishment of a venereal disease clinic in the county. The state will appropriate \$200 a month toward the upkeep of the clinic.

Medical Veterans to Meet.—A meeting of the Medical Veterans of the World War will be held at the Christian Union Church, Rockford, May 19, to organize the Illinois section of the association. Luncheon will be served. Any physician who was in the service during the World War or who is a member of a local or district draft board or advisory board is eligible for membership. Notification should be sent Dr. John E. Tuite, Rockford.

Chicago

Short Term Nurses Graduate.—The graduating exercises of the third class of the training school for home and public health nursing, established by Dr. John Dill Robertson, health commissioner of Chicago, were held April 27, when a class of 609 was graduated. The work of the new course began May 3.

Medical Society Banquet.—The annual banquet of the Auxiliary branch of the Chicago Medical Society was held at Oak Park, April 15, with an attendance of more than 300. The principal speakers were Mr. Marquis Eaton, chairman of the Chicago chapter of the American Red Cross, Dr. J. Warren Van Derslice, Oak Park, president of the Illinois State Medical Society and Dr. Norman Bridge of Los Angeles.

IOWA

Middleton Returns.—Dr. Edward D. Middleton has returned to Davenport after prolonged service during the World War, in which he served with the Canadian Expe-

ditionary Forces, and was stationed on the French and Belgian fronts, at the Dardanelles, and in Palestine, Egypt, Bulgaria and Southern Russia.

State Society Meeting.—The sixty-ninth annual meeting of the Iowa State Medical Society will be held at Des Moines, May 12 to 14, under the presidency of Dr. William L. Allen, Davenport. Drs. Robert H. Babcock, Chicago, and Charles H. Mayo, Rochester, Minn., will deliver the addresses in medicine and surgery, respectively.

Reversed by Supreme Court.—The Iowa Supreme Court reversed a verdict of the Dubuque District Court which found Dr. C. Allen Snyder, Dubuque, guilty of second degree murder. Dr. Snyder is said to have been charged with performing an illegal operation on Mrs. Grace Wolfe, from which she died in 1917. In reversing the verdict the supreme court held that the evidence was insufficient to warrant conviction.

MARYLAND

Bequest to Johns Hopkins.—Through the first administration account of the estate of Eugene G. Mergenthaler, the Johns Hopkins University has received securities and cash amounting to \$186,444.22 of the legacy of \$200,000 bequeathed the university to build a laboratory, a building devoted to the technical arts or a library building.

Personal.—Sir Gregory Foster, Lieut.-Col. Thomas Renton Elliott, Dr. George F. Blacker and Dr. Grafton Elliot Smith, British physicians, left for Philadelphia after two days in Baltimore inspecting the Johns Hopkins Medical School. The physicians came at the invitation of the Rockefeller Foundation and their itinerary permits inspection of hospitals in Philadelphia, New York, Boston, Chicago and St. Louis.—Dr. Harry M. Slade, Reisterstown, has been reappointed secretary to the board of health of Baltimore County and health officer of the fourth district for two years. The other district health officers appointed for the same period are: Drs. Charles L. Mattfeldt, Catonsville; Harry F. Shipley, Granite; Henry A. Naylor, Pikesville; James H. Wilson, Fowblesburg; Eugene W. Heyde, Parkton; Alexander R. Mitchell, Herford; John H. Drach, Cockeysville; Walter S. Carswell, Ruxton; Robert W. Shermantine, Sparks; James F. H. Gorsuch, Fork; Walter M. Carmine, Sparrows Point; Thomas B. Hall, Mt. Winans; Harry W. Wheaton, Baltimore, and John W. Harrison, Middleriver.—Dr. William H. Welch and Dr. Ira Remsen, both of Johns Hopkins University, have been appointed to the Board of Electors for the Hall of Fame of New York University.—Dr. Cyril H. Haas, who was in Turkey several years before the war and who served at the Turkish capital during the war, recently delivered several lectures in the medical amphitheater of the Johns Hopkins Hospital. He came to the United States to speak at the recent conference of student volunteers at Des Moines, Iowa.—Dr. Warren H. Lewis, professor of physiologic anatomy at the Johns Hopkins Medical School, has been elected an honorary member of the Society of Medicine, Ghent. Dr. John J. Abel, Woodlawn, professor of pharmacology at Johns Hopkins University; Dr. William S. Halsted, director of the surgical clinic at the Johns Hopkins Hospital, and Dr. Elmer V. McCollum of the Johns Hopkins School of Hygiene and Public Health have been made associate members of the Royal Society of Medical and Natural Sciences of Brussels.

MISSISSIPPI

Appropriation for Feeble-minded School.—The state legislature passed a bill just before adjournment, carrying an appropriation of \$100,000 to establish a state school for the feeble-minded.

Hospital for Meridian.—The Meridian board of trade has presented the Matty Hersec Charity Hospital buildings, land and equipment to the city of Meridian. The board recently acquired the property by raising a public subscription fund from the city and have deeded the institution to the city free from all debt or other incumbrances.

New Building for Medical School.—The Mississippi legislature has appropriated \$250,000 for a new chemical building at the University of Mississippi which will provide laboratory and other facilities for students in the medical school. An additional appropriation of \$10,000 was made to secure permanent equipment for the medical school, exclusive of chemistry. Additional funds were appropriated for the university with which salaries of all teachers could be reasonably increased. The total appropriation for the university exceeds \$1,000,000.

MISSOURI

Polyclinic at St. Joseph.—A polyclinic is to be established at Community Hall, St. Joseph, under the charge of Dr. George R. Stevenson. Seven rooms have been set aside for the use of the clinic.

Damages Awarded Physician.—In the trial of the suit in the Barry County Circuit Court of Dr. William T. J. Bailey, Cassville, against J. W. LeCompte, Cassville, for damages received when he was attacked by a bulldog at the LeCompte home, the jury awarded \$1,000 to the physician.

Library Club Election.—At the annual meeting of the Kansas City Library Club, April 12, Drs. Edward H. Skinner, Matthew W. Pickard and Logan Clendening were elected directors for three years. At the meeting of the directors, April 16, Dr. Edward H. Skinner was elected president, Dr. Matthew W. Pickard, vice president, and Dr. Harold P. Kuhn, secretary-treasurer.

Health Officers Organize.—In response to a call issued by the state board of health a meeting of deputy state commissioners of health was held at Jefferson City, April 6, and a permanent organization was formed under the name of the Missouri Health Officers' Association. The following officers were elected: president, Dr. G. C. Rogers, Clinton; vice presidents, Drs. Ulysses F. Kerr, Springfield, and Tolman W. Cotton, Van Buren; secretary, Dr. George H. Jones, Jefferson City, and directors, Drs. James W. Bruton, Ozark, Robert E. Crabtree, Butler, and William P. Smith, Troy.

NEBRASKA

Roentgenologists Elect Officers.—At the annual meeting of the Omaha Roentgen Society, March 27, Dr. Joseph Colt Bloodgood of Johns Hopkins University delivered the principal address. Dr. B. H. Harms was elected president; Dr. Norman C. Prince, vice president, and Dr. William L. Ross, secretary.

Personal.—Dr. W. H. Clatterly has been appointed city physician of Lincoln, succeeding Dr. Herman A. Gerbig. —Phelps County Medical Association gave a dinner in Holdrege, April 16, in honor of the seventy-fifth birthday of Dr. Samuel F. Sanders. Dr. Rachael A. W. Long was chairman of the committee of arrangements.

NEW YORK

Albany Medical College Recognized.—A letter from the superintendent of public instruction of Pennsylvania states that recognition was restored to the Albany Medical College by the Pennsylvania Bureau of Medical Education and Licensure, Oct. 15, 1919. This is a correction to Table D published in THE JOURNAL of April 17, which indicated that the Albany Medical College was not recognized in Pennsylvania.

Tuberculosis Clinic.—The Buffalo Tuberculosis Association has made appropriation for a free clinic for the diagnosis of tuberculosis to be opened in Tonawanda, May 6, under the charge of Drs. John H. Pryor, John G. Stowe and C. Grabau, all of Buffalo. —A free clinic is being held at Rome Court House under the auspices of the Oneida County Tuberculosis Committee, the state department of health, Rome Board of Health and Dr. Charles R. Mahady, the local health officer.

New York City

Dr. Wilmer Addresses Academy.—At the meeting of the New York Academy of Medicine, April 15, a paper was read by Dr. William Holland Wilmer, Washington, D. C., on the "Injurious Effects on the Eye of Various Toxemias."

Association of Tuberculosis Clinics.—The Association of Tuberculosis Clinics, which originated in 1906, now has a membership of thirty clinics, and 280 active and associate members. The objects of the association are the organization of dispensary control of tuberculosis in New York City; the development of a uniform system of operating dispensaries organized for this purpose; the placing of patients under observation until they are satisfactorily disposed of; the prevention of patients' drifting from one dispensary to another; the facilitation of the attendance of the patients at dispensaries most convenient to their home; the facilitation of the work of visiting nurses in the homes; the provision for each patient requiring it of assistance by a system of special funds or benevolent organizations, and proper hospital, dispensary or sanatorium care; the cooperation with, and assistance to as far as possible, the department of health in the supervision of tuberculosis. Dr. James Alexander Miller

has been reelected president of the association and the present board of directors consists of Dr. John S. Billings Jr., representing the New York Tuberculosis Association; Miss Elizabeth Gregg, representing the nurses department of health; Dr. Dwight Clifford Martin, representing the department of health, Manhattan; Dr. Victor Miltenberg, representing the department of health, Queens; Dr. James A. Miller, representing Bellevue Hospital; Mr. Graves Moore representing Brooklyn Bureau of Charities; Dr. Arthur E. Neergaard, representing the Presbyterian Hospital; Miss Blanche Potter, representing auxiliaries; Dr. Joseph C. Roper, representing the New York Hospital; Dr. Henry G. Schweitzer, representing the department of health, Bronx; Dr. Ambrose A. Scouler, representing the department of health, Brooklyn, and Dr. Max Taschman, representing Mt. Sinai Hospital.

NORTH CAROLINA

Health Officers Meet.—At the annual meeting of the North Carolina Health Association held in Charlotte, April 19, Dr. Romulus L. Carlton, Winston-Salem, was elected president. Dr. Lawrence J. Smith, Wilmington, vice president, and Dr. George M. Cooper, Raleigh, secretary and treasurer.

Personal.—Dr. John Whitehead, Salisbury, who has been seriously ill at his home, is much improved. —Dr. Carl A. Nevs, Greeneville, S. C., has been appointed acting chief narcotic agent for North Carolina. —Dr. Richard F. Yarbrough, Louisburg, has resigned as physician at the State College, Raleigh.

Hospital Men Elect Officers.—The North Carolina Hospital Association held its annual meeting in Charlotte, April 19, and elected the following officers: president, Dr. James M. Parrott, Kingston; vice presidents, Drs. James R. Alexander, Charlotte; Paul R. MacFadyen, Concord, and Miss Gilbert Muse, High Point; and secretary-treasurer, Dr. John Q. Myers, Charlotte.

State Board of Examiners Selected.—At the meeting of the Medical Society of the State of North Carolina the following were nominated members of the state board of medical examiners: Drs. Lester A. Crowell, Lincolnton; Lucien N. Glenn, Gastonia; John G. Murphy, Wilmington; Clarence A. Shore, Raleigh; William M. Jones, Greensboro; William P. Holt, Duke, and Kemp P. B. Bonner, Morehead City.

Society Meeting.—The sixty-seventh annual meeting of the Medical Society of the State of North Carolina was held in Charlotte, April 20 to 22, under the presidency of Dr. Car V. Reynolds, Asheville. The following officers were elected: president, Dr. Thomas E. Anderson, Statesville; vice presidents, Drs. Charles S. Lawrence, Winston-Salem, William H. Ward, Plymouth, and John M. Manning, Durham; secretary-treasurer, Dr. Benjamin K. Hays, Oxford (reelected), and Dr. Lewis B. McBrayer, Sanatorium, was made active secretary-treasurer during the absence of Dr. Hays in Denver. Pinehurst was selected as the place of meeting for 1921.

OHIO

Conference of Health Commissioners.—The first session of the conference of Ohio health commissioners with the state department of health will be held in Columbus, May 12-14.

Tribute to Dr. Holmes.—The Carnegie Corporation of New York, has donated \$250,000 to the University of Cincinnati College of Medicine as a tribute to the late Dr. Christian B. Holmes.

Medical School to Be Reorganized.—It is reported that the Ohio-Miami Medical College of the University of Cincinnati will be reorganized, by which the heads of the department of medicine, surgery and obstetrics will be on a full time basis, following the plan suggested by the General Education Board.

Maternity Hospitals Must Be Licensed.—All institution maternity or lying-in hospitals or institutions admitting maternity cases are now required to obtain a license from the state department of health. Heretofore only institutions engaged exclusively in this work have been licensed. The regulations provide that certain sanitary equipment and measures must be employed, and that records be kept for both mother and child.

Personal.—Dr. Charles Saur, Norwood, has been appointed physician to the Hamilton County Home, succeeding Dr. Charles A. Neal, Norwood, resigned. —Dr. Levi M. Jones, Jamestown, fell while going to make a professional call fracturing his nose and sustaining severe bruises of the face. —Dr. Louis A. Thompson, for four years surgeon of the

Central Branch, National Military Home Hospital, has been appointed surgeon at the Hampton, Va., Soldiers' Home.—Dr. George W. Wood, Wilmington, has been appointed resident physician to the Ohio Soldiers' and Sailors' Home, Kenia.

PENNSYLVANIA

Hospital for Drug Addicts.—A site has been purchased by the state in Cumberland County on which to erect an institution for drug addicts. An appropriation of \$30,000 was provided by the legislature for establishment of the institution and it is planned to erect three cottages and to improve the buildings already on the site.

New Medical Organization.—Physicians of Beechview, West Liberty, Brookline, Dormont and Mt. Lebanon met in Dormont, April 22, and organized the South Hill Medical Association which will eventually become a branch of the Allegheny County Medical Society. Dr. Chauncey L. Palmer, Mt. Lebanon, was elected president, and Dr. John L. Steffy, Brookline, secretary.

Personal.—Dr. John F. Norris, for several years superintendent of the Somerset Home and Hospital, has resigned to accept a similar position in a hospital in the West.—Dr. James F. Trimble, Greensburg, has been appointed medical director of Westmoreland County.—Dr. Clare B. Kirk, Mill Hall, has been made chief of the tuberculosis dispensary at Lockhaven.—Dr. John B. Critchfield, Lockhaven, has been appointed state medical supervisor of the state department of health, succeeding Dr. John Herbert Waite, Flemington, resigned.

Commission to Advise on Legislation Relative to Insanity.—The last legislature of Pennsylvania created a commission to revise and codify the laws relating to the insane and feeble-minded. The commission appointed includes: Hon. Isaac Johnston, Media; Drs. Owen Copp and Charles Frazier, Philadelphia; Dr. Theodore Diller, Pittsburgh, and Daniel Herr, Esq., Harrisburg. The commission organized in Philadelphia, April 24, and at that time Judge Johnston was chosen chairman of the commission and its work was outlined. The commission desires to hear from any person suggestions affecting the matters within its scope.

Philadelphia

Personal.—Dr. Asa Copeland has been appointed outdoor physician in the bureau of health.—Dr. James M. Anders has been elected president of the Pennsylvania Society for the Prevention of Tuberculosis.

Drunkenness Statistics.—The arrests for drunkenness in April were 66 per cent. more than for January, February and March, according to Superintendent of Police Mills. For the first three months of the year the average was twenty-four arrests a day, but in April this number rose to forty. For the same period in 1919, the arrests averaged ninety-eight daily. From July 1 until December 31, 1919, the total number of arrests for drunkenness was 6,499, while for the same six months in 1918, the arrests totaled 20,162.

SOUTH CAROLINA

State Board Members Named.—At the annual meeting of the South Carolina Medical Association the following were elected members of the State Board of Medical Examiners: Drs. Joseph T. Taylor, Adams Run; Josiah S. Matthews, Denmark; Frank M. Lander, Williamston; Baxter M. Haynes, Spartanburg; Joseph Roddey Miller, Rock Hill; Julius H. Taylor, Columbia, and George B. Edwards, Darlington; at large, Dr. A. Earle Boozer, Columbia.

New Officers.—At the annual meeting of the South Carolina Medical Association held in Greenville, April 20-21, under the presidency of Dr. Ebenezer W. Pressly, Clover, Columbia was selected as the place of meeting for 1921, and the following officers were elected: president, Dr. Washington P. Timmerman, Batesburg; vice presidents, Drs. William A. Boyd, Columbia, and William W. Fennell, Rock Hill; secretary-treasurer, Dr. Edgar A. Hines, Seneca (reelected).

TEXAS

Women's Auxiliary Organized.—An auxiliary to the Washington County Medical Association has been organized by the wives of the members and the following officers have been elected: president, Mrs. Walter F. Hasskarl, Brenham; vice president, Mrs. John W. Tottenham, Jr., Brenham; secretary, Mrs. Oliver S. Moore, Burton, and treasurer, Mrs. Waldo A. Knolle, Brenham.

Personal.—Dr. Edgar L. Gilcreest, Dallas, has returned after two years' service overseas as Major, M. C., American Expeditionary Forces, and has accepted a position in the department of surgery of the University of California, and has moved to San Francisco.—Dr. Otto F. Schoenvogel, Brenham, has been appointed local surgeon for the Houston and Texas Central Railroad, succeeding Dr. Thomas J. Pier, resigned.—Dr. Isaac A. Withers has been appointed city health commissioner of Fort Worth, succeeding Dr. Webb Walker, resigned.

New State Officers.—At the fifty-fourth annual meeting of the State Medical Association of Texas, held in Houston, April 22 to 24, under the presidency of Dr. Robert W. Knox, Houston, Dr. Ira C. Chase, Fort Worth, was elected president to fill the vacancy caused by the death of Dr. Thomas T. Jackson, San Antonio; Dr. Thomas J. Bennett, Austin, was made president-elect; Drs. William S. Miller, Estelline, and Walter Shropshire, Yoakum, were elected vice presidents. Drs. Joseph C. Bloodgood and Lewellys F. Barker, both of Johns Hopkins University, delivered the addresses in surgery and medicine, respectively. Dallas was selected as the next place of meeting.

CANADA

Personal.—Major Fred J. Colling, Toronto, has been awarded the Order of the British Empire for valuable services rendered with the C. E. F. in Siberia. He was for a time senior medical officer to the British Mission in Siberia.

Societies to Meet.—The congress of the Canadian Public Health Association will be held in Vancouver during the week of June 21, under the presidency of Dr. Henry E. Young, Victoria, B. C. During the same week the Canadian Medical Association will hold its annual meeting.

New Medical Organization.—At a meeting of medical men of Ontario engaged in psychiatric work, held April 28, in the Rockwood Hospital for the Insane at Kingston, Ont., it was decided to form the Ontario Medico-Psychological Association. The objects of this organization will be to promote greater interest in nervous and mental cases, social welfare work and defective children, as well as greater care in the selection of immigrants. The following officers were elected: president, Dr. Edward Ryan, superintendent of the Rockwood Hospital for the Insane, Kingston; vice president, Dr. Harvey Clare, medical director of the Ontario Mental Hospital, Toronto; secretary, Dr. Clarence M. Crawford, Ontario Hospital, Whitby; executive committee, Drs. Walter M. English, Hamilton, Goldwin W. Holland, Charles K. Clarke and Robert G. Armour, Toronto, and Nelson H. Beemer, Mimico.

Work of Nova Scotia Red Cross.—The public health course for nurses, organized under the auspices of Dalhousie University, Halifax, in cooperation with other welfare organizations of Halifax, and financed by free scholarships granted by the Red Cross, is to be supplemented by the organization of two traveling clinics. Col. Frank V. Woodbury will devote his entire time to organization of staffs and to the details and equipment of transport for the two traveling clinics that are to go throughout the province during July and August. Trained specialists will accompany these clinics, who will be prepared with outfits and equipment for the removal of tonsils and adenoids and the correction of other remediable defects found in school-children. A dentist with chair and outfit is also included, a tuberculosis specialist, an eye specialist, a nursing corps to assist physicians in their work and to do social service work. The entire personnel will aim to cooperate closely with the local members of the medical profession. The plan also contemplates the transportation of facilities for impressing sanitary lessons, such as educational moving picture films and graphic lessons by projecting lanterns and trained lecturers.

GENERAL

Psychologists to Meet.—The American Medico-Psychological Association will hold its annual meeting at the Hotel Statler, Cleveland, June 1-4, under the presidency of Dr. Henry C. Eymann, Massillon, Ohio.

Research Institute of Baking.—By cooperation between the American Association of the Baking Industry and Dunwoody Institute, Minneapolis, the American Institute of Baking is to be operated at the Dunwoody Institute for three years. The purpose of the institute is to investigate with scientific precision questions relative to the materials and processes used in baking and to cooperate with other organizations in

solving such problems as bakery sanitation, the health of bakery workers, nutritional value of bread and the adoption of valuable dietaries.

Bequests and Donations.—The following bequests and donations have recently been announced:

Jewish Hospital, \$10,000 for the endowment of a room in memory of himself and wife, and Mount Sinai Hospital, Philadelphia, \$30,000, and Jewish Sanatorium, Eaglesville, \$10,000 by the will of Herman Praeger.

Children's Homeopathic Hospital, Philadelphia, \$18,000, Hahnemann Hospital, Philadelphia, \$30,000, for the endowment of six beds, and \$102,000 to be divided between four institutions among which are the Home for Consumptives of the Protestant Episcopal Mission and Home of the Merciful Savior for Crippled Children, by the will of Adeline L. Albright.

Episcopal Hospital, Philadelphia, endowment of a hospital bed as a memorial for members of the order who died during service in the World War by the Order of Sons and Daughters of St. George.

Children's Memorial Hospital, Chicago, \$62,500 by the will of Mrs. Frances H. Mason.

Holds Bogus Diplomas.—Reports published recently in medical journals in Spain state that a "doctor" by the name of José Luis Blanco of Boston does not legally possess the educational qualifications claimed by him. A report states that he first appeared in Spain, claiming to hold a medical diploma from the "University of Philadelphia." The medical society of the town of Orense, where he settled, became convinced that he was not a regularly graduated physician. They discovered that he had practiced in Boston where he claimed to be a graduate of the University of Valladolid, Spain, although reports from that university say that a medical degree had never been conferred on him. A communication from Dr. Walter Bowers of Massachusetts states that about three years ago an investigation of this "doctor" was begun, but that he left the state and has not been heard of since. It is further reported that Sept. 12, 1914, Blanco was convicted in a Boston court and fined \$75 for nonsupport of his wife and two children.

European Physicians Tour America.—A group of eminent European physicians are making a tour of the United States as guests of the National Medical Examining Board. The party consists of Sir Humphry Davy Rolleston of the Royal College of Physicians, London; Col. Holburt J. Waring, Royal College of Surgeons of England, representing the conjoint board of England; Dr. Norman B. Walker, Edinburgh, representing the triple qualification board of Scotland; Prof. G. Roussy and Professor Demorest, representing the Faculty of Medicine of Paris, and Prof. James C. Connell, Kingston, Ont., president of the Dominion Medical Council, Canada. The object of this tour is not only that the members may become acquainted with the members of the profession of this country, but also that they may look into the status of medical education, medical standards, etc., especially. The group were present at the meeting of the Association of Military Surgeons of the United States and at the annual session of the American Medical Association.

FOREIGN

Prize for Prosthetic Appliance.—The Instituto Ortopedico Rizzoli of Bologna offers a prize of 3,500 lire for the best orthopedic work or invention. This is the Umberto I prize, and is open to physicians of any land. For further details address the president of the institute at Bologna. Competition closes Dec. 21, 1920.

Conference on Tuberculosis in the Northland.—The *Norsk Magazin for Lægevidenskaben* announces that the First Tuberculosis Conference of the Northland is to meet at Stockholm, June 28 to 30, this year. Among the subjects to be discussed are the present and desirable laws referring to the tuberculous; management of the convalescent stage, occupation and colonies; laryngeal tuberculosis, and surgical treatment of pulmonary tuberculosis, including artificial pneumothorax.

Infant Welfare Exhibition in India.—A maternity and infant welfare exhibition was held in Delhi, India, in February at which the proper care of mothers and babies was shown by means of models, charts, slides, pictures, leaflets, lanterns, etc., and prematernity, maternity, infant welfare, childhood, domestic science, hygiene, first aid and home nursing topics were discussed. A public show was also held at which more than 2,000 babies were presented. The exhibition lasted for one month and thousands of women from every part of India were in attendance.

Public Health Congress.—Under the auspices of the Royal Institute of Public Health, a congress on public health will be held in Brussels, May 20 to 24, under the patronage of

King Albert of Belgium. The honorary chairman is Dr. Theophilus J. Kelynack, 37 Russell Square, London, England, and the president is Lord Leverhulme. The congress will be divided into six sections with the following chairmen: state medicine, Dr. J. de Moor; naval, military, tropical and colonial, Gen. O. Wibin; municipal hygiene, F. Hachez; industrial hygiene, Dr. E. Malvez; hygiene and women's work, Dr. D. Gilbert, and bacteriology and chemistry, Drs. Bordet and F. Ranwez.

Foundation of the Cajal Institute at Madrid.—The *Progresos de la Clínica* of Madrid gives the royal decree establishing the Instituto Cajal as a center for scientific research in different branches of biology, and to prepare students to carry on research in other countries. The institute is also to offer facilities to a limited number of foreign research workers, especially those from Latin America, and will invite foreign professors to lecture on their specialties. The new institution will include the laboratories already installed in 1901 for biologic research and the laboratories maintained by the Junta para ampliación de estudios equipped for research on experimental physiology, neuropathology and histology. A new building is planned and the whole will form part of the Instituto Nacional de Ciencias.

Red Cross Council.—At the first general council of the League of Red Cross Societies held in Geneva, Switzerland, March 2 to 8, in the Salle du Grand Conseil of the City Hall, Geneva, twenty-seven of the thirty societies in the council were represented, India, South Africa and Uruguay failing to send representatives. The board of governors was increased by the addition of representatives from Argentina, Australia, Spain, Sweden and Switzerland for a period of four years, and Belgium, Brazil, Canada, Denmark and Serbia for a two-year period. Dr. A. Depage of the Belgian Red Cross was elected chairman of the newly formed medical section of the council and Mr. Willoughby G. Walling, vice chairman of the American Red Cross, was elected chairman of the organization section. The medical section discussed child welfare, tuberculosis, communicable diseases, nursing, medical information, sanitation, vital statistics, social hygiene, malaria, libraries and public health laboratories. Drs. Richard P. Strong, general medical director of the league, and A. Depage of the Belgian Red Cross were appointed medical representatives of the formulating committee to which was submitted the conclusions of the two new sections.

The International Surgical Congress.—It is announced that the Fifth Congress of the International Surgical Association is to be held at Paris, July 19 to 23, 1920, and the addresses on cardiovascular surgery are to be delivered by Tuffier of Paris on the heart; by Sencert of Strasbourg on the large vessels; Jeanbrau of Montpellier on transfusion of blood, and by Alessandri of Rome on the heart and large vessels. The second topic for discussion is surgical radiology, and Régaud of Paris and N. S. Finzi of London will open the subject of treatment of tumors with roentgen and radium rays. The subject of surgical hematology is to be opened by Depage and Goovaerts of Brussels whose address is entitled "Analysis of the Blood and the Biologic Reactions in Surgical Affections." Fractures of the thigh is the fourth topic, and the discussion is to be opened by Patel of Lyon and Major Maurice Sinclair of Fairport. Tetanus, the fifth topic, has been assigned to Donati of Modena and Commins of London. The addresses will be published in time for them to be discussed understandingly. A seven day excursion to the battle fields in France and Belgium is planned (815 francs per person). The notice in our French exchanges adds that the American speakers had not been appointed at the date of writing. The address of the Secrétariat is 72 rue de la Loi, Brussels.

Deaths in Other Countries

Dr. Hector Treub, professor of gynecology and obstetrics at the University of Amsterdam, founder of the Netherlands journal for these specialties, co-editor of the *Geneeskundige Bladen* and frequent contributor to other journals, textbooks, etc., aged 64. The list of his works fills a page in the Surgeon-General's Catalogue.—Dr. D. Schwabach, the otologist of Berlin noted for his time test of hearing by air conduction and bone conduction, aged 73.—Dr. E. Schwalbe, director of the pathology institute at the University of Rostock, was shot during the recent rioting there, aged 49.—Dr. V. de la Guardia y Madan, a prominent physician, statistician and medical journalist of Cuba, chief of the vaccine service, aged 70.—Dr. W. Kempner, formerly assistant at the Institute for Infectious Diseases at Berlin, author of works on trypanosomiasis, and, with his wife, Dr. Lydia

Rabinowitsch-Kempner, of works on tuberculosis, aged 50.—Dr. Victor Santos, professor of hygiene at the University of Valladolid.—Dr. N. Zuntz, director of the institute for study of animal physiology at Berlin, and author of numerous works on comparative physiology, aged 73.—Dr. A. Neumann, surgeon to the Friedrichshain Hospital at Berlin, succumbed to lethargic encephalitis, February 21, aged 54.—Dr. F. Hermann, professor of anatomy at Erlangen, aged 61.—Dr. H. Strahl, professor of anatomy at Giessen, aged 63.—Dr. E. I. Rosenthal, professor of internal medicine at Copenhagen, aged 69.

LATIN AMERICA

Department of Radiology in Cuba.—There has been created a department of radiology in the University of Havana, which, for the time being, will be installed in the Hospital Calixto García.

National Laboratory at Santo Domingo.—The municipal council of Santo Domingo has agreed to transfer to the national department of health the municipal laboratory for reorganization as a national laboratory.

School for the Blind in Mexico.—The School for the Blind of the City of Mexico completed its fiftieth anniversary, March 24. The school was founded by Ignacio Trigueros, who also founded a school for the deaf and dumb.

Superior Council of Health in Costa Rica.—The president of Costa Rica has just appointed a superior council of health consisting of three members. The first appointees are Dr. Luciano Beeche, Dr. Carlos Durán and José Maria Soto.

Narcotic Legislation in Santo Domingo.—A recent law enacted in Santo Domingo prohibits the trade in narcotic drugs, and makes it illegal to import, produce, compound, sell, distribute or possess opium or any of its derivatives or synthetic substitutes for opium. The law does not apply to preparations containing less than 2 grains of opium, $\frac{1}{4}$ grain of morphin, or $\frac{1}{8}$ grain of heroin.

Rural Sanitation in Brazil.—An exhaustive report of the rural sanitation work accomplished in the State of Paraná, Brazil, has just been published. The report embraces over 300 pages and has over a hundred illustrations, maps, etc. The work was conducted in cooperation with the Rockefeller foundation; and during the period from September to December, 1919, there were examined by the commission in charge of the work 6,103 individuals, 96.6 per cent. of whom were found infected with some kind of intestinal parasites. A total of 22,679 treatments were furnished, 2,402 homes inspected and thirty-eight lectures given in addition to 6,425 persons vaccinated and 218 malaria cases treated. Dr. H. C. de Souza Araujo is the chief of the federal sanitary commission in charge of this work, which, in its present form of cooperation between the state and the federal government, began in September, 1918.

Vital Statistics of Uruguay.—The department of public health of Uruguay has just published the morbidity and mortality report for the years 1913-1916. It embraces only the reports of cases and deaths due to communicable diseases. During the year 1916 the number of cases of communicable diseases reported in the whole country amounted to 6,818, the number of deaths to 2,641, and the total number of deaths reported to 20,338; the general death rate per thousand of inhabitants was therefore 14.75 during the year 1916. During 1915 the total number of deaths was 16,602, the number of deaths for infectious diseases was 2,008, and the mortality rate per thousand inhabitants 12.33. During the year 1914 the total number of deaths was 15,350, the number of deaths for infectious diseases 1,827, and the mortality rate 11.66 per thousand. During the year 1913 the total number of deaths was 15,374, the number of deaths from infectious diseases 1,721 and the mortality rate 12.01 per thousand. During the year 1913 there were reported 11 cases and 5 deaths from leprosy, 9 cases and 2 deaths from plague and 12 deaths from beriberi; in 1914, 9 cases and 2 deaths of leprosy, 2 cases of plague and 22 cases and 2 deaths of beriberi; during the years 1915, 10 cases and 9 deaths from leprosy, 1 case of plague and 1 case of beriberi; and during the year 1916, 6 cases and 11 deaths of leprosy, 7 cases and 2 deaths from plague and 6 cases of beriberi. The number of deaths for tuberculosis was 1,329 in 1913, 1,540 in 1914, 1,604 in 1915, 1,982 in 1916. No mention is made in the report of how complete these statistics are, nor is any attempt made to explain the comparative increase of the mortality and morbidity in recent years.

Government Services

Marine Hospital Improvements

The Sundry Civil Bill contains provisions for the remodeling of the Marine Hospital at Boston and the erection of medical officers' quarters. There is an appropriation of \$67,700 for this purpose in the bill.

The sum of \$23,000 is appropriated for remodeling the boiler plant and power house at the Marine Hospital at Fort Stanton, New Mexico; \$43,000 is appropriated for an additional hospital ward at the Marine Hospital at Savannah, Ga.

Health Conditions of the Army

There was a moderate increase in the admission rate for sickness, attributable to general causes, during the week ending April 23. Fifty-eight cases of measles were reported, seventeen of these from Camp Taylor, but no other epidemic disease was unusually prevalent. Of thirteen deaths from disease, ten were due to tuberculosis, explained by the fact that many cases of this disease are under treatment in the hospitals as an aftermath of the war. Conditions in the American Expeditionary Forces in Germany are excellent, nine admissions for influenza representing the greatest number of cases of any one epidemic disease.

Medal Awarded

The Distinguished Service Medal has been awarded to Lieut.-Col. Walter C. Montgomery, Medical Corps, U. S. Army, New York City, for exceptionally meritorious and conspicuous service.

"He served with marked distinction as division surgeon of the Twenty-Seventh Division: when confronted with a shortage of personnel he displayed marked initiative and resourcefulness in organizing additional sanitary personnel. During the action along the Hindenberg line, September 25 and 30, by his high professional attainment, sound judgment, and loyal devotion to duty, he so conducted the personnel at his disposal as to provide successfully for the evacuation of 4,000 casualties in four days."

Appropriation for Medical History of War Refused

The House Committee on Appropriations has refused to provide for the publication of the medical and surgical history of the World War. The Surgeon-General of the Army made request that \$150,000 be set aside for the study of the problems of hygiene, medicine and surgery which were involved in the medical care of the Army, based on the knowledge and observations of physicians who guarded the health of our soldiers. The policy of retrenchment in government expenditures is given as the reason for the omission of this appropriation from the Sundry Civil Bill recently reported to the House of Representatives.

Medical Officers in Pay Bill

Medical officers of the Army, Navy and Public Health Service receive substantial increases in pay by the Army and Navy Pay Bill which has passed Senate and House. The following increases are authorized: colonels in the Army, captains in the Navy, and assistant surgeon-general in the Public Health Service, \$600; lieutenant-colonels in the Army, commanders in the Navy, and senior surgeons in the Public Health Service, \$600; majors in the Army, lieutenant-commanders in the Navy, and surgeons in the Public Health Service, \$840; captains in the Army, lieutenants in the Navy and passed assistant surgeons in the Public Health Service, \$720; first lieutenants in the Army, lieutenants, junior grade, in the Navy, and assistant surgeons in the Public Health Service, \$600; second lieutenants in the Army and ensigns in the Navy, \$420; contract surgeons of the Army serving full time will receive the pay of second lieutenants. These increases will be retroactive to Jan. 1, 1920.

Provision is also made for granting commutation of quarters, heat and light for officers of the Navy and Public Health Service as are now granted to commissioned officers of the Army. These benefits are made effective until June 30, 1922.

Provision is also made for transportation at government expense for the wife and dependent children of an officer of the Army, Navy and Public Health Service when such officer is ordered to make a permanent change of station.

Appropriations for Health in Sundry Civil Bill

Under the Sundry Civil Bill, \$46,000,000 is made available for medical and hospital services for beneficiaries of the Bureau of War Risk Insurance; \$4,000,000 for medical services and supplies for beneficiaries of the Public Health Service other than War Risk Insurance patients; \$355,000 for the prevention of epidemics, including smallpox, influenza and infantile paralysis.

The powers and duties of the Interdepartmental Social Hygiene Board are extended. This board was originally created in 1918 as a war measure, to fight venereal disease in the Army and Navy. The Sundry Civil Bill appropriates \$1,015,000 for the continuance of the activities of this board under the direction of Dr. Thomas H. Storey, executive secretary. Of this sum, \$80,000 is for administrative expenses; \$150,000 for assisting the states in protecting the military and naval forces against venereal diseases; \$450,000 to be allotted to the states for the prevention, treatment and control of venereal diseases; \$85,000 for payment to universities and other like institutions to discover more effective medical measures to prevent and treat such diseases; \$250,000 to universities and other organization to develop educational measures for their prevention. The provision is made that such university or organization shall itself first expend a sum twice as large as that received from the federal government.

**MEDICAL OFFICERS, UNITED STATES NAVY,
RELIEVED FROM ACTIVE DUTY**

ALABAMA	KENTUCKY
Mobile—Rowe, J. F.	Louisville—Caldwell, C. N.
CONNECTICUT	MASSACHUSETTS
New Haven—Hoegen, J. A.	Salem—Chisholm, L.
FLORIDA	Worcester—French, L. M.
Williston—Freeman, G. C.	PENNSYLVANIA
ILLINOIS	Philadelphia—Stull, H. T.
Chicago—Welch, P. B.	

Foreign Letters

LONDON

April 16, 1920.

A Medical Research Council

From time to time, the important work of the Medical Research Committee (a body formed under the National Insurance Act to direct medical researches and for which a grant of money was made) has been reported in *THE JOURNAL*. The government has decided to transform this committee into a new body, termed the Medical Research Council, with an enlarged sphere of duty and with considerably enhanced responsibilities. The council will carry out its functions under a committee of the Privy Council, whose constitution will be the lord president of that body, the minister of health, the secretary for Scotland, and the chief secretary for Ireland, the latter ministers having ex-officio charge of the health of their divisions of the United Kingdom. The Medical Research Council thus becomes a permanent subcommittee of the Privy Council, and under its governing body can enter into all contracts, can hold personal property, and can dispose of this, including parliamentary grants. The Medical Research Council thus obtains direct access to the ministers directly associated with its work; there will be no intervention of any permanent official when the Medical Research Council wishes to urge any measures on those in supreme charge of the health of the United Kingdom. Another point is that the advice of the Royal Society is to be taken in respect of the personnel of the council. The first council consists of the existing Medical Research Committee, and is thus constituted: Mr. C. J. Bond, F.R.C.S., consulting surgeon to Leicester Infirmary; William Bulloch, F.R.S., professor of bacteriology in the University of London; Dr. T. R. Elliott, F.R.S., physician to University College Hospital;

Hon. William Graham, M. P.; Viscount Goschen; Dr. Henry Head, F.R.S.; Gowland Hopkins, F.R.S., professor of biochemistry in the University of Cambridge; Sir William Leishman, F.R.S., director of pathology, Army Medical Service; Noel Paton, F.R.S., professor of physiology in the University of Glasgow, and Hon. E. F. Lindley Wood, M. P. Three members of the council will retire at intervals of two years, and appointments to their vacancies, or to any other vacancies that may casually arise, are to be made by the supervising committee of the Privy Council after consultation with the existing body itself, and with the president of the Royal Society.

The International Health Council

Dr. Addison, minister of health, presided at a luncheon given by the government to the members of the International Health Council. The council was formed, at the suggestion of the ministry of health, to discuss a scheme for the establishment of a health section of the League of Nations. Several meetings have been held in London, and a draft scheme has been agreed on, which will be submitted for approval to the League of Nations. Six countries were represented: America (Surg.-Gen. Rupert Blue), France, Great Britain, Italy, Japan and Poland. The chairman said that a draft constitution had been agreed on, and he hoped that the council would be able to agree primarily on it in a day or two. He hoped the council would do everything possible to promote research of an international character. They were at the beginning of what would prove to be one of the most useful branches of the League of Nations, the stability of which would depend largely on the extent to which it helped to promote the well-being of the different peoples in the world. In that respect the International Health Council would be one of its most important branches.

New Hospital System for Paying Patients

In the *British Medical Journal* is described the foundation at Birmingham of St. Chad's Hospital, an institution for paying patients which is quite novel in this country. A company was formed. It was agreed that the institution should not be advertised in any way and that no patients should be admitted except on the recommendation of a member of the medical staff, and on conditions laid down by the Medical Committee. Patients are divided into two classes: those who pay a composition fee, and ordinary patients. The former receive nursing, home accommodations and all professional attendance, and constitute 90 per cent. of the total admissions. The "composition system" is illustrated by these examples: "C. D., suffering from chronic appendicitis, is accepted for an inclusive charge of \$105. This covers the cost of the operation, the anesthetic, and three weeks' stay in the hospital. The anesthetist receives a direct payment of \$5 from the inclusive fee." "G. H. is admitted with obscure gastric symptoms and stays in the hospital four weeks for a composition charge of \$160. His case requires full investigation, and may call for a consultation between a physician and surgeon, a roentgen-ray examination, and subsequent operation. The cost is covered by the single inclusive payment." The medical staff consists of twenty-three members, each of whom is a consultant and a member of the staff of one of the Birmingham hospitals. An important point is that each member of the staff has the right to call on any other member for consultation in the case of a "composition" patient without fee.

Sex Education and the Birth Rate

The National Birth Rate Commission, whose report will be presented to the prime minister this month, has been constituted to continue its inquiry. The terms of reference include consideration of the development and education of

young citizens for worthy parenthood, under the following heads: 1. The various methods of educating boys and girls in sex hygiene before they leave the home and school, and the extent to which graded instruction in sex matters can be usefully given by parents, schoolteachers, ministers of religion, physicians and others. 2. Those influences and conditions which favor or retard the bodily and mental development of the adolescent citizen, so far as these are concerned with the attainment of worthy parenthood. 3. The extent to which worthy ideals of citizenship and parenthood can and should be inculcated by education in its widest sense. Other matters included in the terms of reference are the influence of various industrial occupations on the birth rate; the housing problem; schemes for the "endowment of motherhood" and widows' pensions; problems of migration within the Empire; new discoveries in dietetics; the relation of religious belief to the birth rate; the 1921 census, and the coordination of inquiries in Great Britain and the dominions with those in France, the United States and other countries.

PARIS

April 1, 1920.

Death of Prof. Felix Garrigou

Dr. Felix Garrigou, professor of hydrology at the Faculty of Medicine of Toulouse, died recently at the age of 85. He devoted all of his activities to a study of French mineral waters and to the improvement of our thermal resorts. He was the sole representative of teachers of hydrology in France, for the faculty of Toulouse is the only one with a chair in hydrology. Before the war, this instruction was completed each year by a scientific excursion to one of the hydrologic centers of France.

Recognition of American Services by the Academy of Medicine of Paris

At the meeting of the Academy of Medicine, March 23, Professor Letulle of the Faculty of Medicine gave a very instructive account of the importance of the services rendered to France by the American Red Cross campaign against tuberculosis, during the twenty-two months of its activity (from September, 1917, to July, 1919). The figures of the pledged funds alone, sixteen million francs, indicate the large scale on which the campaign was conceived. Following this address, the Academy of Medicine, on the proposal of Professor Vincent, adopted the following resolution:

"The Academy of Medicine, after hearing the report of Professor Letulle, expresses recognition and gratitude to the American Red Cross for the great services which it rendered to France during the war by the campaign against tuberculosis."

In previous letters (*THE JOURNAL*, Dec. 6, 1919, p. 1782; Jan. 31, 1920, p. 338) mention has been made of the services of the Rockefeller Commission in aid of the campaign, especially by its educational tours in the provinces. The Academy of Medicine also desired to associate this commission in the tribute to the American Red Cross, and on motion of Dr. Netter, adopted the following resolution:

"The Academy of Medicine is happy to take this occasion to thank the American Commission for the Prevention of Tuberculosis for the services which it has already rendered and continues to render to France."

Institute of Optics

Mention has previously been made of the creation of an institute of theoretic and applied optics, destined to revive in France the manufacture of optical instruments and optical glass. The institute will start its lectures on advanced

optics, April 12. M. Dumoyer, doctor of science, will deliver a course on optical instruments, and M. Chrétien, the astronomer, will conduct the course on calculation of optical combinations. In addition, lectures will be given by M. A. de Gramont on spectroscopy, by M. Appert on the nature and applications of glass, by M. Cotton on the significance of polarized light, by M. Mouton on the microscope and its use in biology and natural science, and by M. de Broglie on the properties of roentgen rays and gamma rays.

Commission on School Hygiene and Physical Education

M. Honnorat, minister of public instruction, has just formed a commission on school hygiene and physical education. The purpose of the commission is an immediate study for early application of the appropriate measures for improving the sanitary conditions of public schools, for combating the diseases of teachers and pupils, especially tuberculosis, for assuring methodical development of the body, and for encouraging and making practical physical exercise and outdoor sports. Among others, Drs. Langlois and Léon Bernard have been appointed members of the commission.

Confederation of Intellectual Workers

Under this name, there is being formed a confederation open to all associations of intellectual workers, for the purpose of representation, coordination and defense of the interests of all those who derive their principal means of existence from intellectual and mental work.

Increasing the Birth Rate

The National Alliance for Increasing the Birth Rate of France recently submitted to all members of the chamber of deputies a scheme of allowances for large families, including these essential clauses: 1. Every head of a family of French nationality, having in charge more than two legitimate or acknowledged children under 13 years, shall receive for the third child an annual allowance of 360 francs, for the fourth 480 francs and for each additional child 600 francs. 2. Children from 13 to 16 years of age, for whom the head of the family has entered into a written contract of apprenticeship, or who, having completed their primary education, devote their activities exclusively to studies at a public educational institution at the expense of their parents shall be considered as children under 13 years.

MEXICO CITY

April 25, 1920.

The Sixth Mexican Medical Congress

As previously announced, the Mexican Medical Congress met at the City of Toluca, April 14-21, and it was a complete success, not only because of the number of physicians present, but also because of the quality of the papers submitted, the number of associations represented, and the resolutions adopted. It would be impossible to summarize in a letter the work accomplished, and I will therefore only mention the papers which attracted most attention.

SUBJECTS DISCUSSED

In Section I the most important papers were Dr. Ocaranza's study of the physiology of the spleen, and Dr. T. López's on the mechanism of phonation; in Section II, Dr. J. J. González's on a new case observed in Mexico of the exotic disease known as "anakhre" or "goundou"; Dr. López Bonaga's on the palliative treatment of epilepsy by intraspinal injections of stovain, and Dr. Perrin's on the Weil-Felix reaction in typhus fever, this paper being illustrated with lantern slides. In the ten cases studied by this author, the blood from typhus fever patients agglutinated the proteus

X19, while, when the blood serum was normal or from typhoid fever patients, it did not agglutinate the culture. Should these results be confirmed by other investigators, this would strengthen the belief of some clinicians as regards the identity of the Mexican tabardillo with the petechial typhus observed in Europe. Dr. Arroyo discussed the Lange reaction, presenting a summary of 150 cases. Dr. Cicero discussed the present status of our knowledge of the treatment of leprosy, and three members discussed the treatment of syphilis, one of them, Dr. C. Barriere, of Guadalajara, stating his agreement with what we may call the conclusions of the French school—choice of neo-arsphenamin over arsphenamin, nonuse of mercury when arsenicals are employed, and making the treatment chronic and intermittent. From his several years of practice, another speaker advocated the conclusions held by the American school, which seem, as also those of German specialists, to prefer arsphenamin (considering neo-arsphenamin as a less active spirocheticide) and its use together with mercurials, trying in the early cases to obtain a radical cure, which is considered possible in view of the numerous cases of reinfection reported recently. Mention was made of the recent work of A. Knauer of Würzburg, who injects 45 cg. of arsphenamin in the internal carotid for the treatment of general paresis, and stress was laid on the need of controlling the therapeutic results by means of serologic observations. Another paper described the experience of Dr. F. Robles, who, in the Hospital Morelos (for prostitutes), has employed arsphenamin injections in much greater strength than usual, up to 1.2 gm. He has had two deaths in his series of 800 injections, the former occurring in cases in which no large doses were used.

Drs. Fausto Vergara of Tampico and Camarillo of Puebla discussed venereal prophylaxis, the first recommending the creation of a national association, somewhat similar to the American Social Hygiene Association, but resorting also to the use of specific treatment, while the second advocated regulation and urged more scientific treatment of prostitutes, recording in their carnets (record books) not only the present status of their health, but also the results of the Wassermann reaction. Dr. Eliseo Ramírez discussed hereditary syphilis, demonstrating that recently there have been included in this group two classes of children—those who have inherited the infection and those who, while not actually infected, suffer from a hereditary dystrophy. Dr. D. Manuel Vergara, of Puebla, is inclined to believe that Malta fever is prevalent in his city, as shown by his observations, and cultures and inoculations he has made in goats. Dr. Ernesto Cervera discussed the Ronchez reaction, a modification of the Wassermann test recently proposed in France, concluding from his eighty cases that, in general, the modification should not be accepted, as while not more sensitive or specific than the original, its technic is more complicated. Dr. García Rendón presented a monograph on Noguchi's *Leptospira*, claiming to have reproduced the leptospirosis in guinea-pigs, as done elsewhere by Noguchi. Dr. Demetrio López reports that he has obtained good results with Daniélopou's treatment for typhus fever. The last papers presented in this section were by Drs. Alberto Oviedo of Morelia, who thinks he has found a new germ in the blood of typhus fever patients, which he calls *Leptonema*; Manuel Pérez Amador, who compared the results of the fixation of the complement in syphilitic and normal cases, and Vergara, who described the dengue epidemic at Tampico. In the Section on Pharmacology and Therapeutics, mention must be made of Dr. Bulman's study on saccharose, Dr. Gilberto Cicero's paper on blood transfusion, and the address by the pharmacist Donaciano Morales, who attacked the favor shown "patent medicines."

OTHER PAPERS AND PROCEEDINGS

In the Section on Surgery, papers were presented by Dr. Castillo Nájera on the treatment of spermatocystitis through the catheterization of the ejaculatory ducts, and by Professors Ulises Valdés and Malda on surgical technic. In the Section on Ophthalmology there were discussed the action of tuberculin on the eye, the early treatment of glaucoma; cataract extraction by Barraquer's technic; spinal puncture in the treatment of optical neuritis; syphilis as a factor in the ocular complications of typhus fever and influenza, etc. In the Section on Gynecology and Obstetrics, the following papers attracted attention: Dr. U. Valdés', on the differential diagnosis of appendicular and uterine peritonitis; E. Landa's, on occurrence of vertex presentations in Mexico; Dr. Ramírez', on ovarian sclerosis, and Dr. Castañeda's, on criminal abortion in Mexico. Dr. Bonansea presented a paper on the diseases of the cow's udder, and Dr. Pruneda on public health propaganda. In the legal medicine section, Mr. Demetrio Sodi and Drs. García discussed the legal classification of lesions, and Mr. José Torres Torija legal anthropometry.

In the general sessions, Dr. Terrés, the president of the congress, discussed the need of confining medical practice to one branch of medical science to obtain the best results, although without neglecting the study of the others. Dr. Amor, dean of the School of Medicine, discussed scleropolycystic ovaritis, and finally Dr. Perrín presented a paper on phagocytosis, illustrated with lantern slides.

Both the federal and local authorities, as well as the local medical society, did everything in their power to make the meeting a success. While the papers presented were not very original, it was seen that an effort was being made to keep in touch with modern developments in medicine.

Among other resolutions the congress adopted the following recommendations: creation of a course in public health in the University of Mexico; establishment of laboratories for diagnostic and research purposes; restrictions on the selling of secret "patent medicines," identical with those on narcotics; employment of arsenicals for the treatment of syphilis, especially as a prophylactic measure, and regulation of the practice of medicine in the whole country.

The next congress will meet in 1922 in the city of Saltillo, Coahuila, and will be presided over by Dr. D. M. Vélez. The secretary will be Dr. Everardo Landa, whose address is 4a Calle del Apartado 130, Mexico City.

Marriages

WILLIAM LAURENCE WHITEMORE, New York City, to the Hon. Ivy Lorna Jervis of Shanklin, Isle of Wight, England, April 22.

HAROLD DOUGLAS LIVINGSTONE SPENCE, Utica, N. Y., to Miss Mary Gladys Davidson of Hampstead, London, Dec. 9, 1919.

CHARLES WHEATLEY, Lieut., M. C., U. S. Navy, to Miss Mary Frances Shane, both of Washington, D. C., April 5.

WALTER HASKELL HARPER, Spartanburg, S. C., to Miss Marie Christena Peterson of Rodney, Mich., April 22.

LYDIA ALLEN DEVILBISS, Topeka, Kan., to Mr. George Henry Bradford of St. Louis, March 29.

GEORGE BOLLING LEE, New York City, to Miss Helen M. Keeney of San Francisco, April 21.

GILBERT MOMBACH, Cincinnati, to Miss Rosalie Eckstein of New York City, April 20.

DUNCAN PARHAM, Rochester, Minn., to Miss Althea Puech of New Orleans, April 21.

ALBERT F. LESLER to Miss Estelle Weiss, both of New York City, April 19.

HUGH CHAPLIN to Miss Virginia Deems, both of New York City, April 17.

Deaths

Henry Martyn Bannister Ⓢ neurologist and for many years member of the editorial staff of *THE JOURNAL*, died at his home in Evanston, May 1. He was born July 25, 1844, the son of Rev. Henry Bannister, and was graduated from the National Medical College, Washington, D. C., in 1871. He was a member of the party which made the United States Geological Survey of the territories, including Alaska, in 1872, and on his return located in Chicago. He was one of the founders and joint editor with the late Dr. James S. Gell of the *Journal of Nervous and Mental Diseases*, and author with the late Dr. Daniel R. Brower of a textbook on insanity. For several years he was assistant superintendent of the Kankakee State Hospital. He had been an invalid for many years on account of arthritis deformans, but still kept up his literary work so far as he could. He was a man wonderfully well read in medical science, and well learned, not only in his own specialty but in the broad fields of literature and science; a man of delightful personality and beloved by all who knew him.

Sidney Freeman Wilcox, New York City; New York Homeopathic Medical College, New York City, 1880; aged 62; for twenty-two years professor of clinical surgery in the New York College and Hospital for Women, and later emeritus professor; consulting surgeon to the New York Hospital for Women, New York Ophthalmic Hospital, Laura Frank-Turner Free Hospital for Children, Memorial Hospital for Women and Children, Brooklyn; St. Mary's Hospital, Passaic, N. J., Grace Hospital, New Haven, Conn., and Wesson Hospital, Springfield, Mass.; while operating in Thrall Hospital, Middletown, N. Y., April 20, died from cerebral hemorrhage.

Frederick C. A. Kellam, Jr. Ⓢ Major, M. C., U. S. Army, Washington, D. C.; Atlanta College of Physicians and Surgeons, 1909; aged 38; who was commissioned first lieutenant, Medical Reserve Corps, in 1911; graduated from the Army Medical School, and commissioned lieutenant, M. C., 1912; promoted to captain in 1915, to major in 1917, and to lieutenant-colonel (emergency), Oct. 8, 1918; died in the Walter Reed General Hospital, Takoma Park, D. C., April 5.

Charles Dudley Prescott, New Bedford, Mass.; Dartmouth Medical School, Hanover, N. H., 1867; aged 75; a member of the Massachusetts Medical Society; president of the Bristol County Medical Society in 1888 and 1889; quarantine physician and health officer of New Bedford from 1879 to 1881; from 1873 to 1879 physician at house of correction; a member of the staff of St. Luke's Hospital since 1884; died, March 22.

Henry Leland Akin Ⓢ Omaha; John A. Creighton Medical College, Omaha, 1901; aged 47; major, M. R. C., U. S. Army, with two years' service in France, in charge of a hospital at La Rochelle, and discharged July 9, 1919; professor of gastroenterology, and of medicine and clinical medicine in his alma mater; died in his garage, April 20, from the effects of carbolic acid, self-administered, it is believed, with suicidal intent.

Howard A. McDonald, Prairie Home, Mo.; Beaumont Hospital Medical College, 1898; aged 45; formerly assistant secretary of the Missouri State Medical Association, and secretary of the surgical section of that association, and president of the John McDowell Medical Society; who had been a patient at State Hospital No. 3, Nevada, Mo., for several months, died in that institution, April 18.

John Henry Barbat Ⓢ San Francisco; University of California, San Francisco, 1888; aged 57; formerly president of the San Francisco Board of Health and in 1918 president of the Medical Society of the State of California; member of the State Board of Medical Examiners from 1894 to 1898; lecturer on surgery in his alma mater; died, April 22.

Omar Adrian Kell, Salem, Ill.; Barnes Medical College, St. Louis, 1900; aged 48; a member of the Illinois State Medical Society; for several years resident neurologist at the Kankakee State Hospital; once mayor of Salem; died in the Missouri Baptist Sanitarium, St. Louis, April 11, from septicemia, due to an infection of the thumb.

Alfred Wharton, St. Paul; University of Pennsylvania, Philadelphia, 1857; aged 84; surgeon of U. S. Volunteers during the Civil War, and surgeon of the Sixth Minnesota Volunteer Infantry during the Indian outbreak of 1862; died at the home of his daughter in St. Paul, April 13.

Francis Achilles Davis Ⓢ Chicago; Northwestern University Medical School, Chicago, 1899; aged 45; captain, M. R. C., U. S. Army, and discharged Jan. 20, 1919; formerly assistant professor of medicine in his alma mater, and a member of the medical staff of Wesley Memorial Hospital; died, May 3, from uremia and pneumonia.

William Varian, Buffalo; Pennsylvania Medical College, Philadelphia, 1854; aged 87; major and surgeon of U. S. Volunteers during the Civil War; at one time president of the Medical Society of the State of Pennsylvania; for several years secretary of the Titusville (Pa.) Board of Health; died, April 12.

Arthur Springer Hagan, Uniontown, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1901; aged 41; coroner of Fayette County for two terms; a member of the Medical Society of the State of Pennsylvania, and a member of the local board of education; died, March 31, following an operation.

Charles F. Lynch, Chicago; Bennett Medical College, Chicago, 1913; aged 33; major, M. O. R. C., U. S. Army; formerly district health officer at Aberdeen, S. D.; died in Presbyterian Hospital, Chicago, April 28, from septicemia following an infected wound of the finger.

John Edward Kidd, Wyoming, Ont.; Western University, London, Ont., 1909; aged 40; while driving over a grade crossing in his automobile, March 18, was struck by a train receiving injuries from which he died in Victoria General Hospital, London, March 21.

Christopher P. Linhart, Columbus, Ohio; Western Reserve University, Cleveland, 1882; aged 59; a member of the Ohio State Medical Association, and a specialist in diseases of the eye, ear, nose and throat; city school physician; died, April 15, from pneumonia.

Lewis Jasper Keeling, Atlanta, Ga.; Atlanta (Ga.) Medical College, 1914; aged 27; lieutenant, M. C., U. S. Army, and discharged, Dec. 13, 1918; was instantly killed, April 24, in a fall down an elevator shaft in the building in which he had his office.

Ernest Edgar Beckett, Seattle; Hering Medical College, Chicago, 1895; aged 47; a member of the Washington State Medical Association; captain, M. C., U. S. Army, and discharged Dec. 6, 1918; died, April 9, from cerebral hemorrhage.

Alexander Wallace Aiken Ⓢ Chicago; University of Toronto and Trinity Medical College, Toronto, 1895; aged 49; died in the Presbyterian Hospital, Chicago, April 27, from septicemia following an infected wound of the finger.

Walter G. Spiess Ⓢ Philadelphia; Medico-Chirurgical College of Philadelphia, 1903; aged 40; a member of the staff of the Kensington Dispensary for Tuberculosis; died, April 23, from encephalitis.

James Dismurkes Smith, Nelson, Mo.; Missouri Medical College, St. Louis, 1887; aged 60; a member of the Missouri State Medical Association; died, April 14, from cerebral hemorrhage.

Robert Emerson, El Paso, Texas; University of Illinois, Chicago, 1898; aged 63; for twenty years a resident of Chihuahua City, Mexico; died, February 23, from senile gangrene.

William L. Downey, Wenona, Ill.; Medical Department University of Iowa, Keokuk, 1865; aged 82; a veteran of the Civil War; for many years a druggist; died, April 7.

Fordyce Worth, Hesper, Iowa; Bennett College of Eclectic Medicine and Surgery, Chicago, 1870; aged 88; died in LaCrosse, Wis., March 14, from pneumonia.

William L. Griffin, Lamar, Mo. (license, Missouri, 1883); aged 82; a practitioner for fifty-four years; a veteran of the Civil War; died, April 1, from paralysis.

Ezra C. Harris, Springfield, Ohio; Starling Medical College, Columbus, Ohio, 1876; aged 75; a veteran of the Civil War; died, April 17, from heart disease.

John Henry Williard, Lewistown, Mont.; Medical College of Ohio, Cincinnati, 1869; aged 73; died at the home of his sister in Lancaster, Ohio, March 29.

Carl W. J. Specht, Fairview, Okla. (license, Oklahoma, 1908); aged 66; a practitioner for thirty-four years; died in St. Louis, April 6, from pneumonia.

Franklin A. Weatherford Ⓢ Chicago; College of Physicians and Surgeons, Chicago, 1895; aged 54; died, May 2, from cerebral hemorrhage.

Carl Kirschner, Erie, Pa.; Medico-Chirurgical College of Philadelphia, 1903; aged 42; died, April 19, from pneumonia.

Ⓢ Indicates "Fellow" of the American Medical Association.

Correspondence

PRIDE IN AN EXCELLENT TYPHOID RECORD

To the Editor:—So much criticism has been directed against the sanitation of rural districts that the extremely low typhoid death rate in Los Angeles County deserves special publicity.

Comparing the deaths in Los Angeles County rural districts (unincorporated section only) with the rates appearing in the eighth annual report on the prevalence of typhoid in larger cities (*THE JOURNAL*, March 6, 1920, p. 672), we discovered that the death rate was actually lower for our county than for the average of sixty cities during 1919. Many of the cities had a rate as high as 15 per hundred thousand, while the average was 4.2 per hundred thousand. The rate for Los Angeles County was 4 per hundred thousand population, as of July 1, 1919. During the year 1918 there was not a single death recorded from typhoid fever in the rural districts. During 1919, however, we had six deaths and twenty-six cases, the increase being due to the insanitary conditions prevailing among the Japanese vegetable growers.

The Los Angeles County Health Department comprises a bureau of twenty-six persons, and we are very proud of this record, which should be an encouraging note to those who continually decry the insanitary conditions in the rural districts.

J. L. POMEROY, M.D., Los Angeles.

County Health Officer.

A COMPARISON OF THE HUTCHINSON AND SPILLER OPERATIONS FOR THE RELIEF OF TRIGEMINAL NEURALGIA

To the Editor:—The radical operation for the treatment of trigeminal neuralgia is exceedingly satisfactory in its results.



Fig. 1.—Reproduction (reduced) of illustration bearing the legend: "Tic douloureux. Physiological extirpation of the Gasserian ganglion. Showing site of flap incision for Spiller-Frazier operation, and the blepharorrhaphy of the left eye for trophic ulceration of the cornea. In this case the conspicuous scar on the side of the face and the depression left by the division of the zygoma are shown."

Section of the sensory root, as a means of affording permanent relief, has been acknowledged almost universally as the accepted procedure. The technic as elaborated has well nigh reached a stage of perfection, in that the cosmetic results leave nothing to be desired and we now are able to conserve

the motor root. Hutchinson, however, still advocates the resection of the outer two thirds of the ganglion. In his recent monograph on "Facial Neuralgia and Its Treatment" there are three references to what he calls the Spiller-Frazier operation, one of which is incorrect, and the other two misleading.

On page 118 it is stated that the operation is "more difficult, dangerous and uncertain than the extradural method."



Fig. 2.—Cosmetic results in patient after operation. The incision entirely within the hair line, hidden from view.

Our experience with the operation at the clinic of the University Hospital has proved quite conclusively that the operation is not more difficult than methods which have for their object the total or partial removal of the ganglion; and, comparing the mortality of this clinic with that of Mr. Hutchinson's, could hardly be said to be "more dangerous." Mr. Hutchinson, quoting the statistics from his own and Sir Victor Horsley's experience with 200 cases and a mortality under 1 per cent., characterizes the results as "surely satisfactory enough." In the last 129 cases in which the technic we now use was applied, there has been but one death, a mortality of 0.7 per cent. In this case the patient, ten days after the operation, when out of bed and about ready for discharge, had an apoplectic stroke. Whatever else may be said in comparison of the Hutchinson and the Spiller operation, the latter should not be presented to the medical public as "more dangerous."

A greater injustice is contained perhaps in the second reference. An illustration (Figure 1) is reproduced with the legend: "Tic douloureux. Physiological extirpation of the Gasserian ganglion. Showing site of flap incision for Spiller-Frazier operation, and the blepharorrhaphy of the left eye for trophic ulceration of the cornea. In this case the conspicuous scar on the side of the face and the depression left by the division of the zygoma are shown."

If the reader will compare Figure 1 with Figure 2 (photograph of patient operated on by Dr. Frazier) the misrepresentation is apparent. It will be seen in Figure 2 that the scar is entirely hidden, concealed within the hair line; furthermore, it has never been my practice to resect the zygoma.

On page 117, Hutchinson credits the operation on the sensory root, as a substitute for gasserectomy, to Horsley who in 1891 divided the sensory root behind the ganglion in one case, the patient dying from shock seven hours after the operation. "It appears," he writes, "that for many years the method was not again attempted. In 1901 and 1902, however, Spiller and Frazier again brought it forward." The data

re correct, but it would have been more nearly the truth had he amplified his statement to include the following: (a) that Horsley, so far as one can ascertain from his publications, never repeated the operation and presumably abandoned it; (b) that the method of approach in Horsley's case was radically different and more difficult than that proposed by Spiller and Frazier (Horsley approached the sensory root by elevating the temporosphenoidal lobe after reflecting a dural flap); (c) that Spiller's recommendation was supported by a series of animal experiments which proved convincingly that the results would be permanent as the root could not regenerate itself; (d) that the claims of superiority of this operation, as after than gasserectomy, were not made until proved by actual experience on the operating table, and (e) that, as a result of the combined experimental and clinical evidence, this operation (properly designated as the "Spiller" and not as Hutchinson styles it, the Spiller-Frazier method) has been recognized in all civilized countries as the appropriate radical procedure in the treatment of trigeminal neuralgia.

CHARLES H. FRAZIER, M.D., Philadelphia.

"QUININ IN INFLUENZAL PNEUMONIA"— USEFULNESS OF CALOMEL

To the Editor:—Two articles in THE JOURNAL, April 24, 1920, attracted my attention:

Dr. A. J. Caffrey of Milwaukee (p. 1166) writes on the value of quinin in influenzal pneumonia. During the great epidemic of 1918, while in Macedonia with the troops, I personally treated, and saw treated by my colleagues, a large number of cases of influenza and of bronchopneumonia. On account of the prevalence of malarial infection, many of these patients were vigorously plied with quinin dihydrochlorid. My own routine was 15 grains thrice daily. I can say with confidence that I saw no benefit from the administration of quinin in either influenza or bronchopneumonia.

Dr. A. E. Goodwin of Jackson, Miss. (p. 1163) condemns the free use of calomel as a cathartic, and cites two cases to support his argument. A man, aged 50, after taking 2 grains of calomel, developed extensive gangrene of the tongue, gums and palate which caused his death. In the second case, a child, aged 5 years, after a dose of calomel had diarrhea, salivation and sloughing of the cheek. From the history I regard it as a case of cancrum oris. The evidence of mercurial poisoning in these two cases is to me inconclusive, and would not influence me to discard a drug which I find invaluable.

JAMES CAMPBELL, M.B., CH.B. (ABERD.),
Washington, D. C.

"SPIRITS AND THE MEDICAL MIND"

To the Editor:—I have been hoping that some one else would do this; but, others failing, I desire to protest against the attitude of THE JOURNAL as depicted in the recent editorial on "Spirits and the Medical Mind" (THE JOURNAL, March 27, 1920, p. 890). If I may be very blunt that I may be very brief, I would protest against a spokesman for the profession who fails to distinguish between the London Society for Psychic Research and the spiritualistic cult. He fails, too, in accounting for the spread of the latter cult, when he ignores the item of phenomena, the one constant feature that wins proselytes to a system that has nothing else at all to support it. If these phenomena can be shown to be subjective, such a showing would be praiseworthy; but it is not serving any good purpose to simply call for the alienist. It is a question of fact, not of doctrines; of natural forces rather than of belief in the supernatural. "A mind adjusted to set up an adequate resistance" in advance

is not an open and a judicial mind, and it would be more in keeping with the dignity of the American Medical Association to make "a patient analysis of the evidence to see what it really shows." There are physicians to whom medicine means more than the daily, diagnostic thought-habits of practicing specialists; who keep in touch with the progress of the world in all lines; who enjoy the large view of the present day, and hope that the darkness that limits human understanding may be pushed back for another gain in their generation. Such physicians are not uninterested in physics or philosophy. Those who have accepted the Einstein revelation may talk of our universe as confidently as of our world, and those who studied last year's books, from Haeckel to Whitman, may feel certain that nothing that ever had a real existence was ever lost. All will agree that the world grows. And the American Medical Association grows. Let it not hide now from "unrecognized forces." I beg to propose a Committee on Psychical Research as an addition to the active departments of this association. It might have a perfectly legitimate and fairly permanent occupation in the exposing of frauds. Then, perhaps, it might start a card index for communications—no sources barred—and assist the British, on the firing line again, in the newest phase of the oldest campaign in which mankind has ever engaged.

JAMES JOHNSTON, M.D., Bradford, Pa.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BENZYL AND TOLYL

To the Editor:—1. My copy of the American Illustrated Medical Dictionary states that "benzene," C_6H_6 , is called also "benzyl"; it states under "benzyl" that it is C_7H_7 . Please clear up this apparent inconsistency.

2. I believe that the proper name for this C_7H_7 group should be "toluyl" to distinguish it from C_6H_5 , and that the proper nomenclature of the substances developed therapeutically by Macht should be toluyl benzoate, toluyl acetate and toluyl alcohol; and that benzyl benzoate, benzyl acetate and benzyl alcohol denominate entirely different substances.

3. In your abstracts of medical journals you recently mentioned benzyl carbinol as having been found more suitable for local anesthesia than benzyl alcohol. I have not been able to secure this through a certain large chemical and drug house, and would appreciate any suggestions you could offer as to where a supply of benzyl carbinol might be obtained.

I. F. S.

ANSWERS.—1. The symbol C_7H_7 may stand for either of two radicals derived from toluene. In one of these, one hydrogen atom of the benzene nucleus (C_6H_6) has been replaced by the methyl group (CH_3) and another hydrogen atom has been

removed, leaving an uncombined linkage, thus: C_6H_4 — $\begin{array}{c} \diagup \\ CH_3 \end{array}$. This is called "tolyl" (toluyl). In the other instance, only one hydrogen atom of the benzene nucleus has been removed, that having been replaced by the methyl group (CH_3) and one hydrogen in the methyl group having been removed, leaving an uncombined linkage, thus C_6H_5 — CH_2 —. This form is called "benzyl" to denote its relationship to benzoic acid.

2. If hydroxyl (OH) be attached to the tolyl radical, i. e., the OH group being attached to the benzene nucleus, the compound is not an alcohol but a phenol. Thus, tolyl hydroxid

is cresol, C_6H_4 — $\begin{array}{c} \diagup \\ CH_3 \end{array}$ —OH. On the other hand, if the OH group

be attached to the benzyl group ($C_6H_5CH_2$)', an alcohol, benzyl alcohol ($C_6H_5CH_2OH$), results. Benzyl alcohol is also called phenyl methylol and phenyl carbinol.

3. Benzyl carbinol is synonymous with phenyl ethyl alcohol. It is a constituent of oil of rose and may be purchased under the second name of dealers in synthetic perfumes.

Medical Education, Registration and
Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.
DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
FLORIDA: Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
HAWAII: Honolulu, May 10-14. Sec., Dr. R. W. Benz, 1141 Alakea St., Honolulu.
ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.
KENTUCKY: Louisville, May 17. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.
LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.
MASSACHUSETTS: Boston, May 11-13. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, June 1-4. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.
NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.
NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.
SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.
VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.
WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

Iowa January Report

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that 15 candidates were licensed by reciprocity at the meeting held Jan. 22, 1920. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago Coll. of Med. and Surg.	(1915), (1916), (1917)		Illinois
Northwestern University	(1917), (1918)		Illinois
Rush Medical College	(1919)		Wisconsin
University of Minnesota Medical School	(1917)		Minnesota
St. Louis University	(1918)		Missouri
John A. Creighton Med. Coll.	(1913), (1916), (1918, 2), (1919)		Nebraska
University of Nebraska	(1919)		Nebraska
University of Virginia	(1897)		Georgia

Missouri January Examination

Dr. George H. Jones, secretary of the Missouri State Board of Health, reports the written examination held at St. Louis, Jan. 12-14, 1920. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 21 candidates examined, 18 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Med. Coll. and Hosp. of Chicago	(1898)		75.8
Harvard University	(1917)		77.9
Barnes Medical College	(1907)		76.1
Kansas City Medical College	(1905)		79.4
St. Louis College of Phys. and Surgs.	(1918)		75.1
St. Louis University	(1920) 79.8, 80.1, 83.1, 83.1, 84.7, 84.9, 88.1.		
Washington University	(1917) 83.1, (1918) 83.1, 84.8, (1919)		83.1
Columbia University	(1916) 90.7, (1917)		89.7

FAILED

National University of Arts and Sciences	(1918)	*
St. Louis College of Phys. and Surgs.	(1918, 2)	*

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Med. and Surg.	(1914, 2), (1917)		Illinois
	(1918) W. Virginia		

Medical College of Louisiana	(1911)	Louisiana
Johns Hopkins University	(1913)	Maryland
University Medical College of Kansas City	(1913)	Kansas
Washington University	(1913)	Illinois
University of Nebraska	(1919)	Nebraska
Meharry Medical College	(1915), (1917)	Kentucky
University of Munich	(1914)	Illinois

* No grade given.

New York January Report

Mr. Herbert J. Hamilton, assistant, professional examinations, New York State Board of Medical Examiners, reports that four candidates were licensed by endorsement of their credentials from Jan. 5 to Jan. 19, 1920. The following colleges were represented:

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Medico-Chirurgical College of Philadelphia	(1910)		Penna.
Woman's Medical College of Pennsylvania	(1909)		New Jersey
University of Virginia	(1916)		Virginia
National University, Athens	(1904)		Indiana

North Dakota January Examination

Dr. George M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the oral, written and practical examination held at Grand Forks, Jan. 6-9, 1920. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 6 passed and 2 failed. Six candidates were licensed by reciprocity. One candidate was licensed on a certificate from the National Board of Medical Examiners. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Northwestern University	(1918)		83
Rush Medical College	(1919)		85.5
University of Illinois	(1918)		87
University of Minnesota Medical School	(1917) 81.3, (1919)		81.5
Manitoba Medical College	(1908)		78

FAILED

University of Vermont	(1908)		72
Chicago College of Medicine and Surgery	(1916)		64

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1908)		Illinois
Northwestern University	(1916), (1917, 2)		Illinois
Rush Medical College	(1915)		Illinois
University of Minnesota Medical School	(1911)		Minnesota

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College	(1915) N. B. M. Ex.		

Pennsylvania January Report

Dr. Thomas E. Finnegan, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports the written and practical examination held at Philadelphia, Jan. 13-15, 1920. The examination covered 5 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 95 candidates examined, 81 passed and 14 failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Howard University	(1906)		1
Atlanta Medical College	(1916)		1
Rush Medical College	(1917)		1
University of Louisville	(1914), (1915)		2
Johns Hopkins University	(1917)		1
Maryland Medical College	(1912)		1
Harvard University	(1914, 2), (1916), (1917)		4
University of Michigan Medical School	(1917)		1
Albany Medical College	(1910)		1
College of P. and S. in the City of New York	(1895)		1
Columbia University	(1918)		1
Cornell University	(1907)		1
Syracuse University	(1916)		1
Hahnemann Med. Coll. and Hospital of Philadelphia	(1915), (1917, 2), (1918)		4
Jefferson Medical College	(1914), (1915), (1916, 4), (1917, 16), (1918, 6)		28
Medico-Chirurgical College of Philadelphia	(1916)		3
Temple University	(1917)		1
Univ. of Pa.	(1916, 7), (1917, 11), (1918, 6)		24
University of Pittsburgh	(1917, 2), (1918)		3
McGill University	(1913)		1

FAILED

George Washington University	(1918)		1
Howard University	(1918)		1
College of Phys. and Surgs., Baltimore	(1904)		1
Baltimore Medical College	(1910)		1
Johns Hopkins University	(1906)		1
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1916)		1
Medico-Chirurgical Coll. of Philadelphia	(1902), (1916)		2

Jefferson Medical College.....	(1917), (1918)	2
Temple University	(1918)	3
University of West Tennessee.....	(1908)	1

West Virginia January Report

Dr. S. L. Jepson, secretary of the West Virginia Public Health Council, reports the oral and written examination held at Charleston, Jan. 13, 1920. The examination covered 3 subjects and included 100 questions. An average of 80 per cent. was required to pass. Of the 12 candidates examined, 7, including 1 osteopath, passed and 5, including 1 undergraduate, failed. Ten candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Maryland	(1916)	85,	82.4
University of Cincinnati	(1919)		82.3
Jefferson Medical College.....	(1919)		85.8
University of Vermont.....	(1913)		90.2
Queen's University	(1914)		80.7
FAILED			
Eclectic Medical College, Cincinnati.....	(1918)		76.3
Montana Medical College.....	(1904)		68.6
Memphis Hospital Medical College.....	(1912)		72
Medical College of Virginia.....	(1916)		78
Undergraduate			46.6
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College.....	(1914)		Georgia
University of Louisville.....	(1913)		Kentucky
Altmore Medical College.....	(1909)		Virginia
University of Maryland.....	(1908)		Penna.
Washington University	(1914)		Missouri
University of Buffalo.....	(1914)		Penna.
University of the City of New York.....	(1882)		Virginia
Yanderbilt University	(1915)		Kentucky
Medical College of Virginia	(1916)		Virginia
University of Virginia.....	(1915)		Virginia

Vermont February Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the written and practical examination held at Burlington, Feb. 10-12, 1920. The examination covered 12 subjects and included 180 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. The following college was represented:

College	PASSED	Year Grad.	Per Cent.
University of Vermont.....	(1913)	88.7, (1919)	79.6

Book Notices

THE OXFORD MEDICINE. ADVANCE PAGES. Edited by Henry A. Christian and Sir James Mackenzie. Volume 1. Part 5. Paper. New York: Oxford University Press, 1920.

The first article is a well written, carefully thought out, philosophic discussion of the rationale of clinical diagnosis, by L. F. Barker. The origin, development and aims of diagnosis are clearly set forth, together with its relations to other branches of medicine as well as to other closely related sciences, especially the so-called premedical sciences. Among the latter, by the way, Barker would include sociology, psychology and—as a special branch of biology—anthropology. The article is well worth reading by student or practitioner; it views diagnosis from an angle not often considered. We should like it better were it a little more condensed. This might in part be accomplished by the shortening of lists of instruments, diseases, parts of the body to be investigated by the roentgen ray, etc. The intent of the article is not to furnish a textbook of clinical diagnosis with complete or encyclopedic cataloging of the methods or the clinic of diagnosis. These lists could well be illustrative, therefore, with something left to the imagination of the reader, who will be flattered at the assumption that he knows his rest rather than annoyed that the writer has at times seemed it necessary to name things of such elementary character that they ought to be common knowledge.

H. A. Christian, in ten pages, discusses in a general way tests of function. The saving feature is the bibliography, which points the reader to some of the more important origi-

nal articles. It is clearly impossible to discuss with thoroughness in such limited space important subjects like the tests for renal, gastric and circulatory function. Gastric function in a little more than one page and circulatory in two pages are handled in scant, stepmotherly fashion. Peabody's article on respiration in disease is excellent. Du Bois considers the calorimetric methods of study of disease, and gives references so that those interested may find details that would be out of place in his article, which takes up only the general topic.

THE MEDICAL ASPECTS OF MUSTARD GAS POISONING. Alfred Scott Warthin, Ph.D., M.D., Professor of Pathology of the University of Michigan, and Carl Vernon Weller, M.S., M.D., Assistant Professor of Pathology, University of Michigan. Cloth. Price, \$7. Pp. 267, with 156 illustrations. St. Louis: C. V. Mosby Company, 1919.

If the complete story of the scientific activities carried on in this country as part of the broad program for the winning of the war should ever be published, the scope of the work under way under the Chemical Warfare Service and the amount of the work already accomplished at the time of the armistice would undoubtedly astound all those not intimately connected with it. An important part of this work concerned medical problems, especially the pathology and pharmacology of the action of gases in use or proposed for introduction in offensive warfare. While much of this work was done in Washington, numerous problems were investigated in other laboratories throughout the country, as part of a program of cooperative research that has since become perpetuated through the continuance of the National Research Council as a peace-time organization. The work reported by Warthin and Weller was in part done under these auspices, and most of it has already been described in articles in the *Journal of Laboratory and Clinical Medicine*. These articles have now been collected and somewhat expanded to form this volume, and a brief discussion of the properties and effects of most of the gases used by the Germans serves as an introduction to the discussion of "mustard gas" and its properties.

This famous poison, undoubtedly one of the most important used in the war, has especially striking toxic effects which are discussed at length, both from the experimental side and from the point of observations on human material. As is now generally understood, this substance has no relation to mustard beyond a slight similarity of smell, being dichloroethylsulphid. We owe it to the German chemist Victor Meyer, who learned of its toxic properties as soon as it was first produced in his laboratory, by virtue of its effects on the assistant who worked with it. Experiments soon established its capacity for damage to living tissues, and the information thus obtained was utilized thirty years later with great effect by the organizers of "Schrecklichkeit."

The monograph of Warthin and Weller gives in great detail the pathologic effects of mustard gas on experimental animals, the lesions in human cases, a clinical study of thirty cases arising in manufacturing plants, and both experimental and clinical observations on treatment. An extensive bibliography completes this important contribution to what, it is to be hoped, is a closed chapter in human experience.

DIE THERAPIE DER HAUT- UND VENERISCHEN KRANKHEITEN, MIT BESONDERER BERÜCKSICHTIGUNG DER BEHANDLUNGSTECHNIK FÜR AERZTE UND STUDIERENDE. Von Prof. Dr. J. Schäffer. Cloth. Price, 22 marks. Pp. 485, with 87 illustrations. Berlin: Urban & Schwarzenberg, 1919.

This handbook, the first edition of which appeared in 1915, is the elaboration of a series of articles prepared for the *Medizinische Klinik* in 1913 under the title, "Dermatotherapeutische Winke für den Praktiker." The book is typical of the handbooks on special subjects of which there are so many in Europe. It is written in clear and concise style, yet is sufficiently comprehensive. Practically every method of treatment used in dermatology and venerology is described. The formulas are numerous, but one is struck by the fact that a large number contain drugs having trade names which are not familiar to American readers at the present time. As the physician must be able to arrive at a diagnosis before availing himself of the methods of treatment described, it seems obvious that a man with enough dermatologic training to make use of the book would not need it.

Miscellany

THE FIRST PHARMACOPEIA PUBLISHED IN THE UNITED STATES

ALEXANDER G. BROWN, JR., M.D.
RICHMOND, VA.

The occasion of the approaching tenth decennial session of the United States Pharmaceutical Convention, May 11, at Washington, D. C., calls to mind a fact probably known to few physicians and pharmacists, that the first pharmacopeia published in the United States was in the year 1778. It was written in Lititz, Lancaster County, Pa., during General Washington's Valley Forge encampment and campaign about Philadelphia in 1777-1778. This first pharmacopeia was written for the use of Continental Army hospitals. As far as known, only two copies of this original pharmacopeia exist, one being the property of the estate of Charles A. Heinitsch, a druggist of Lancaster, Pa., and the other being in the Library of the Surgeon-General's Office in Washington. This publication was written entirely in Latin. It contained thirty-two pages. It was printed by Charles Cist of Philadelphia.

The title page may be of interest:

PHARMACOPOEIA
Simpliciorum & Efficaciorum
in usum
Nosocomii Militaris
ad exercitum
Foederatarum Americae Civitatum
Pertinentis;
Hodiernae Nostrae Inopiae
Rerumque Angustiis,
Feroci hostium saevitiae, belloque
crudeli ex inopinato patriae nostrae illato debitis,
Maxime Accommodata.
Auctore Gulielmo Brown, M.D.
Editio Altera
Philadelpiae
Ex Officina Caroli Cist
MDCCLXXXI.

The author, Dr. William Brown (1752-1792), was the grandson of Dr. Gustavus Brown (1689-1765), of Port Tobacco, Md., and the son of Rev. Richard Brown of the Colonial Episcopal Church of Maryland. Although born in Haddingtonshire, Scotland, while his parents were temporarily residing abroad, he was an American. He graduated and received his M.D. degree in 1770, from the University of Edinburgh. The subject of his thesis was "De Viribus Atmosphaerae." After his graduation, Dr. Brown settled in Alexandria, Va. He soon attained a high professional standing, and became intimate with many of the leading men of the day, among them Washington, Jefferson and Madison. At the beginning of the Revolution, Dr. Brown entered the service of his country as surgeon to Colonel Woolford's regiment of Virginia troops but, Sept. 20, 1776, was elected assistant to Dr. Shippen, a chief physician of the Continental Army. On the recommendation of Gen. Hugh Mercer, one of Washington's greatest generals, he was elected by congress, July 2, 1777, to be physician-general of the middle department of the Continental Army in place of Dr. Benjamin Rush (1745-1813), which position

he resigned, July 21, 1780, returning to private practice. On his resignation, Congress passed the resolution:

That Congress entertains a high opinion of the ability, integrity and past services of Dr. William Brown, Physician-General; but as circumstances will no longer permit his continuance in the service, his resignation is accepted.

In resigning, he forfeited his right to pay in bounty lands; but so highly were his services esteemed that the general assembly of Virginia made an exception in his case and decreed that he should receive the pay due him, and also that he should be entitled to the bounty of land allowed surgeons of regiments raised under the authority of the state (Hennings Statutes, Vol. VI).

Dr. Brown married Miss Catherine Scott of Alexandria, Va., and had a large family. His son, Gustavus Alexander, became a physician and practiced in Alexandria, Va., many years.

Dr. Brown died, Jan. 13, 1792, and was buried at Preston, an estate near Alexandria, Va.

1135 West Franklin Street.

MEDICAL AID IN RURAL DISTRICTS

Inaccessibility of medical and nursing aid, according to studies of maternity care in six rural areas of four states made by the Children's Bureau of the U. S. Department of Labor, is responsible for much suffering and even death. In a northwestern county and in a southeastern county there were nearly twice as many persons per physician as the average for the United States; in a southern mountain county there were four times as many. A vast area in the far Northwest, larger than Connecticut, was served by three registered doctors. Moreover, most of the doctors in every rural county were located at the county seat, while the remoter parts of the county were entirely without medical service. More than one third of the families in the far northwestern county studied were 20 miles or more from the nearest doctor, ten being from 50 to 100 miles away. In a southern county more than one fourth of the families were 10 miles or more from a doctor, and in another county 25 miles was not an uncommon distance.

Actual miles were not the sole obstacle to obtaining medical help at confinement. Rough roads, crossed by rivers; slippery mountain trails, almost impassable at best, become totally so under bad weather conditions. As a result, doctors arrive from several minutes to twenty-four hours too late to deliver their patients. Many families, discouraged by repeated failures to get a doctor in time, are tempted to do without one altogether; to others the thought of a doctor does not occur unless the patient's condition becomes critical. In a southern county only sixty-eight out of 160 mothers had a doctor at their last confinement; in only eight out of sixty-six confinement cases in a northern county was a physician secured; and in still another more than two thirds of the women did not have a physician when their babies were born. Three were entirely alone, and forty-six had only their husbands in attendance. Women would in many cases leave home for confinement if hospitals were within reach. But one 5,500 mile area had no hospital; neither had the southern mountain county. Reaching a hospital meant a journey of several days by wagon trail, or one by stage across the roughest of mountain roads. In a large number of cases the mother has no nursing care, except that given by an untrained hired girl, a relative, or a neighbor. Figures gathered from five rural counties are small in number but appalling in significance: 45 out of 89 babies who died during their first year; 22 out of 28; 12 out of 15; 10 out of 16; 10 out of 14, died before they were one month old. These figures are further corroborated by the Bureau of the Census which gives the increase in mortality rates from premature birth and injuries at birth. The first has increased from 17.5 per thousand of the population under 1 year of age in 1910 to 21.1 in 1917, and the other from 3.2 in 1910 to 4.6 in 1917. These excessive

ates are due to the condition of the mother and indicate plainly that motherhood is not receiving the protection it needs. As the census report itself says: these increases should serve as food for thought."

Medicolegal

Unskilful Treatment of Injuries—Cross-Examination

(*Smith v. Missouri, K. & T. Ry. Co. (Okla.)*, 185 Pac. R. 70)

The Supreme Court of Oklahoma, in reversing a judgment rendered in favor of the defendant railroad company, in this personal injury case, holds that, when a party has used reasonable care in selecting a physician or surgeon, but owing to unskilful treatment the injury has been increased, the party causing the original injury will be held liable for damages for the latter; and the issue is not whether the physician or surgeon was, in fact, a man of high skill, but whether he bore such reputation as would justify the plaintiff in calling for his services under the obligation to exercise good faith in the choice of his physician. The court says that it might be conceded that the plaintiff was not well served by the physicians first called to attend him, and those who treated him for the first year following the accident, as he was suffering from a broken bone in the arm and a dislocated joint, and these physicians did not discover the extent of his injuries. However, the plaintiff was not at fault on this account. All of these physicians were regularly licensed physicians and surgeons, and his good faith in calling them was not questioned. The trial court properly instructed the jury to the effect that it was incumbent on the plaintiff to make use of reasonable means to effect as speedy and complete a recovery as could reasonably be accomplished, and for that purpose he was required to use reasonable care in the selection of competent and skilful surgeons and physicians, and that, if he failed in this respect, he could not recover damages for an aggravation of his injury or result therefrom, occasioned by such failure. The plaintiff offered proof to the effect that the three physicians he called bore the reputation in that community as being skilful and competent physicians and surgeons. That evidence was objected to by the defendant, and the objection was sustained. It was error to exclude that evidence. It was competent for the plaintiff to show that he acted in good faith and used due care, by employing well-known and reputable physicians to treat his injury.

Finally, the plaintiff called another physician, on whose advice he was sent to Oklahoma City, where a roentgenogram of his arm was taken, which disclosed a broken bone and a dislocated joint, after which he employed two or three specialists to treat the arm. When these specialists were called at the trial to testify in behalf of the plaintiff as to the character of his injury and its probable duration, the defendant, on the cross-examination of these witnesses, was permitted, over the objection of the plaintiff, to attempt to show that the treatment he received from the physicians first called by him was not the proper treatment, and this character of cross-examination was carried to such an extent as to introduce a collateral issue into the case, one not raised by the pleadings, and the issue on trial, namely, the liability of the railway company for the plaintiff's injuries, was lost sight of, and the trial permitted to develop into a trial of the physicians. By reason of this irregular conduct of the trial, the real issue before the court and jury was so obscured that the collateral issue was the only one really tried by the jury, and on which the verdict was returned for the railway company. This character of cross-examination was not permissible for two reasons: (1) Because it was irrelevant, and tended to support an issue not raised by the pleadings and not submitted to the jury for determination. (2) Because it extended beyond the direct examination of the witnesses. An attorney has no right to cross-examine a witness, except as to the facts and circumstances connected with the matter stated in his direct examination. If he wishes to

examine him on other matters, he must do so by making the witness his own, and calling him as such in the subsequent progress of the case. It was no answer to this assignment of error to say that this line of cross-examination was permissible to determine the competency of the expert witnesses, and to test their knowledge and skill, and that its tendency was merely to reduce the amount of the plaintiff's recovery; and since he did not recover anything by the verdict of the jury, the error, if any, was harmless. From an examination of the entire record the court is of the opinion that the improper cross-examination probably resulted in a miscarriage of justice, and was sufficient grounds for awarding a new trial.

Injured Employee Treating Himself

(*Banner Coffee Company et al. v. Industrial Commission et al. (Wis.)*, 174 N. W. R. 544)

The Supreme Court of Wisconsin, in affirming an award of the industrial commission of \$3,000 damages in favor of the widow of a teamster employed by the company, says that on February 19 he was kicked by a horse over the shin of his left leg. The injury did not appear to be serious, and he continued in the performance of his usual duties until the 27th. In the meantime he applied carbolic salve, and bandaged the injury with a cloth. During the afternoon of the 27th, he told a fellow workman that he could do no more: "everything is feeling numb; it is my back that shivers." He was told to go home and take care of himself. He went home, and on the same day the company was notified that he was in a serious condition. March 1, the company's physician called to see him. The physician found that he had a severely infected ulceration over the shin of his left leg, about the size of a dollar, with a temperature of 102.5. He had the man removed to a hospital, where he died, March 4, as a result of infection.

It was contended that the proximate cause of the man's death was his refusal to adopt such means as an ordinarily prudent person would use under like circumstances, the undisputed record showing, as it was contended, that the proximate cause of the infection was the failure to have immediate medical attention. But, while conceding that persons highly appreciative of the dangers resulting from infection would at once consult a physician, the court cannot say that this is true of the great mass of mankind under the same or similar circumstances. It is a matter of common knowledge that strong, healthy men engaged in manual labor frequently give such trifling injuries, which would arouse the apprehension of others, little thought; and in comparison with the number of such injuries, the instances followed by infection are not numerous. If they are treated at all, home remedies are applied, just as was done by this man. Carbolic salve was his remedy for cuts, bruises, etc., and this he applied. The injury itself was not sufficient to keep him from his work, and he went about performance of his daily duties, attaching little consequence to the injury. The court does not think it is customary for laboring men to rush to a physician every time they sustain a cut, bruise, or abrasion of the skin, and it cannot say as a matter of law that the conduct of this man was not that of the great mass of mankind under the same or similar circumstances.

Point was made of the fact that one of his fellow workmen, immediately after the kick, told him he had better see a physician. The district manager also testified that he saw him on the morning of February 20, and told him to go to a certain physician immediately; that he saw him a few days later, and asked him whether he had been to see a physician, and he said he had been treating himself, whereupon the district manager replied that he thought it would be best for him to go to a physician and have him examine him, and the man said he would. But, in the absence of any representation on the part of the company that it would be liable for the physician's fees, it could not be said that the man unreasonably refused to accept or receive medical services tendered to him by the company. What was said to him by his fellow laborer and the district manager amounted to nothing more than a suggestion on their part that he ought to see a physician. It goes without saying that their opinion in this respect

was no better than his. He was in a position to judge of the necessity of consulting a physician as well as they, and perhaps better. Furthermore, it was not at all plain from the record that, if he had consulted a physician, his life would have been saved.

Valid Provisions for the Quarantining of Persons with Venereal Diseases

(*Ex parte McGee et al. (Kan.)*, 185 *Pac. R.* 14)

The Supreme Court of Kansas, in denying the petitioners a writ of habeas corpus, holds that Chapter 205 of the Laws of 1917, which undertakes to protect the public health by preventing the dissemination of dangerous communicable diseases, through isolation and quarantine measures, is not unconstitutional on the ground that it delegates legislative power, because it confers on the state board of health authority to designate such diseases as are infectious, or communicable in their nature, and to prescribe proper control measures. The court says that the necessity for legislation of this character was demonstrated by very recent events. If, when this statute was before the legislature, it had designated all the infectious, contagious and communicable diseases it knew, and had prescribed regulations for their suppression and control, it would have omitted the deadly influenza which soon afterward made such appalling inroads on the lives and health of the people of the state. To meet emergencies of this character, it is indispensable to preservation of the public health that some administrative officer or board should be clothed with authority to make adequate rules which have the force of law.

Nor were rules of the state board of health, adopted and published pursuant to the statute, and provisions of a city ordinance framed in accordance with the rules of the state board of health, unreasonable because they authorized the isolation of men infected with venereal disease at an institution provided by the state for the isolation and treatment of such diseases. It was not long after its enactment until specific application of the statute to venereal diseases became urgent, on account of social conditions attending the concentration of large bodies of troops at the three United States military establishments in the state. The state board of health declared syphilis, gonococcus infection and chancroid to be infectious, contagious or communicable in their nature, and notifiable diseases dangerous to the public health, and made and published rules and regulations for the control and suppression of such diseases. The rules necessarily involved the isolation of diseased persons, and facilities for isolation where such persons were found in localities where such facilities were totally inadequate. Provision was made for the quarantine and medical treatment of women at the industrial farm for women. Provision was made for the isolation of men in one of the penitentiary buildings, for their treatment at the penitentiary hospital, and for certain liberties outside the walls of the institution in connection with a few hours' work each day on the penitentiary farm. The portions of the state property thus set apart for the use of men were designated the "Kansas State Quarantine Camp for Men, at Lansing," and the portion set apart for the use of women was designated the "Kansas State Quarantine Hospital for Women, at Lansing." Experience demonstrated that the men sent to the quarantine camp thus established were, generally speaking, a bad lot, and the board of administration provided that they should be subject to such rules for the discipline and control of the institution as the warden, with the approval of the board, might adopt. The isolation orders ought not to have used the term "state penitentiary," and should be amended by employing the official designation, the "State Quarantine Camp for Men, at Lansing."

The question of whether the petitioners were diseased was one of fact, determinable by practically infallible scientific methods. The city health officer was authorized to ascertain the fact. He certified to the existence of disease, and, in the absence of a charge of bad faith, or conduct equivalent to bad faith, on his part, his finding was conclusive. Reasonableness of provisions relating to discovery and to examination need not be determined here. It may be observed, how-

ever, that while provisions of the latter class cut deeply into private personal right, the subject is one respecting which a mincing policy is not to be tolerated. It affects the public health so intimately and so insidiously, that considerations of delicacy and privacy may not be permitted to thwart measures necessary to avert the public peril. Only those invasions of personal privacy are unlawful which are unreasonable, and reasonableness is always relative to the gravity of the occasion.

A person regularly ordered to be isolated at the state institution is not entitled to a writ of habeas corpus for his discharge because he is able to provide himself with proper treatment, at an isolated place in the locality of his residence. The public health authorities are not obliged to take chances.

True Object of Harrison Narcotic Law

(*United States v. Parsons (U. S.)*, 261 *Fed. R.* 223)

The United States District Court, District of Montana, says that the Harrison Narcotic Law is ostensibly a revenue measure, and within limits the courts must recognize it as such. At the same time, any one with sense enough to be at large without a keeper knows that the revenue feature, which possibly returns cents for dollars spent in administration, is only a fiction and device to enable Congress, otherwise disabled to suppress opium traffic and use, to hinder and obstruct such traffic so far as may be done incidentally to the exercise of revenue power. It is one of many like and regrettable devices to evade constitutional limitations, to impose duties of the states on the United States, and to vest the latter with nondelegated and reserved police power of the former. The limits are that, if in any such measure Congress incorporates arbitrary and unreasonable inhibitions, in that they are not calculated to promote the revenue features, but intended to promote some object not within congressional power, to that extent the statute is unconstitutional and void, and the courts are bound so to declare it. Section 2 must be construed to be in aid of the only object of the act that is constitutional, namely, to create and safeguard revenue. Nothing in Section 2 forbids purchases for any lawful use. Among such may be purchase to destroy, to absorb the supply, to prevent purchase by others, or to obstruct illegal traffic, all of which are lawful purposes, and none of which are within Section 2, even as purchase for personal use is not; and a demurrer is sustained to an indictment that charged purchase for personal use.

Society Proceedings

COMING MEETINGS

American Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 31.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Orthopedic Association, Toronto, Ont., June 7-10.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
Arkansas Medical Society, Eureka Springs, June 8-9.
Association of American Peroral Endoscopists, Boston, June 1.
California State Medical Society, Santa Barbara, May 11-13.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Connecticut State Medical Society, New Haven, May 19-20.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Massachusetts Medical Society, Boston, June 8-9.
Michigan State Medical Society, Kalamazoo, May 25-27.
Mississippi State Medical Association, Jackson, May 11-12.
Nebraska State Medical Association, Omaha, May 24-26.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Hampshire Medical Society, Concord, May 12-13.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
South Dakota State Medical Association, Sioux Falls, May 18-20.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Roentgenology, New York

February, 1920, 7, No. 2

- Aviator's Heart. Roentgen-Ray Studies Under Conditions Simulating High Altitudes. L. T. LeWald, New York, and G. H. Turrell, Mineola, L. I.—p. 67.
- Thoracic Aneurysms. A. R. Taft, Charleston, S. C.—p. 90.
- Treatment of Cancer, Particularly of Tongue, Tonsil and Rectum, by Buried Emanation. H. H. Janeway, New York.—p. 92.
- Radioactivity. A. Soiland, Los Angeles.—p. 102.
- Technic of Radium Application in Cataracts. I. Levin, New York.—p. 107.
- Influenzal Pneumonia from Clinical and Roentgen-Ray Study. J. Harkavy and J. H. Selby, Takoma Park, D. C.—p. 109.
- Treatment of Pruritus Ani by Roentgen-Ray Radiation. W. J. Young, Louisville.—p. 116.

Annals of Surgery, Philadelphia

March, 1920, 71, No. 3

- Possible Advances in Civil Medicine Suggested by Experiences in Treating War Injuries of Chest. J. L. Yates, Milwaukee.—p. 241.
- *Gunshot Wounds of Chest. R. H. Fowler, Brooklyn, and H. P. Mencken, Astoria, N. Y.—p. 257.
- *Operative Results in Two Hundred Breast Tumors. B. B. Davis, Omaha.—p. 270.
- *Case of Diaphragmatic Hernia. T. F. Riggs, Pierre, S. D.—p. 276.
- *Congenital Diaphragmatic Hernia: Report of Case. L. Frank, Louisville.—p. 280.
- Surgery of Ductus Communis Choledochus. J. C. O'Day, Honolulu.—p. 293.
- Permanent Colostomy or Enterostomy Which May Be Closed by an Extraperitoneal Operation. R. C. Coffey, Portland.—p. 299.
- Gastro-Enterostomy Still the Treatment for Chronic Gastric and Duodenal Ulcer. R. C. Coffey, Portland.—p. 303.
- *Technic of Appendectomy: Description of a Rational, Safe and Easy Technic of the Operation for Acute and Interval Appendicitis. A. L. Soresi, New York.—p. 315.
- Fractures of Pelvis. W. J. Ryan, Philadelphia.—p. 347.
- Use of Free Skin Grafts to Replace Loss of Mucous Membrane of Mouth and Nose. G. M. Dorrance, Philadelphia.—p. 360.
- Operative Treatment of Ununited Fractures of Mandible. R. H. Ivy, Philadelphia.—p. 363.
- Bone Inlays and Bone Platings. R. J. Behan, Pittsburgh.—p. 377.
- *Surgical Hazards in Diabetes. N. B. Foster, New York.—p. 382.

Gunshot Wounds of Chest.—In a series of gunshot wounds classified by Fowler and Mencken according to the anatomic region involved, wounds of the thorax (139) constituted 8.6 per cent. Of these 118 involved the chest wall. Twenty-one were intrathoracic wounds. There were no wounds of the heart seen. Penetrating wounds of the lung and pleura (twenty-one) composed 17 per cent. of gunshot wounds of the chest. Some of these cases are analyzed.

Results of Operation for Breast Tumor.—A little better than 62 per cent. of the patients operated on by Davis for breast cancer have been free of recurrence for from three to twenty years. To have a set form of incision Davis believes is a mistake. The location and extent should determine the line of incision and the amount of skin to be removed. If the growth is deeply seated, only a comparatively small amount of skin need be sacrificed. If near the surface, and especially if the skin is adherent, a much larger area should be removed. The most methodical part of the operation, as well as the more extensive, occurs beneath the skin. There is really no especial limitation to the amount of fascia and fat that may advantageously be sacrificed.

Diaphragmatic Hernia.—The contents of the hernia in Rigg's case consisted of the pyloric portion of the stomach, the greater portion of the transverse colon and almost the entire omentum. The hernia was of traumatic origin. The opening was to the right of the midline and was not through one of the normal openings in the diaphragm. The sac of the hernia was formed by the diaphragmatic peritoneum and the diaphragmatic pleura.

Congenital Diaphragmatic Hernia.—Frank's patient was 16 years old. He had a hernia of the stomach and duodenum into the right chest, almost half filling the right chest cavity. A successful operation was performed.

Technic of Appendectomy.—Soresi believes that the special points of the technic that he advises in all acute cases: ether-

rubber preparation of the skin; pararectus incision; freeing of only the external portion of the cecum; raising up the cecum, so as to expose the base of the appendix, immediately severing the appendix close to its base and inverting it; then following the distal portion of the appendix and removing as much of it as possible; paraffin gravity drainage when pus is present; closure of the abdominal wound in all cases; paraffin gravity drainage of the abdominal wall; elastic closure of the skin, and the application of an elastic belt as an external dressing, answer all the desiderata. Life is saved more often if this technic is followed. The technic recommended is said to be ideal for all cases, because it prevents the spreading of infection in all cases and does not lower the resistance of the peritoneal organs, and does positively drain out safely any secretions that should be drained out. It prevents the formation of fecal fistula, of dangerous post-operative adhesions, of postoperative hernia; it allows a maximum of comfort to the patient.

Operating on Diabetics.—The treatment of patients with diabetes mellitus as a preparation for surgical operation Foster says requires a departure in no respect from recognized principles. The object of this treatment is the restoration of normal metabolism and the measure of success is the blood sugar and carbon dioxide of the plasma. Foster gives sodium bicarbonate emulsified in olive oil subcutaneously, from 10 to 15 gm. of sodium bicarbonate in 10 c.c. of oil. Attention to a copious fluid intake and catharsis is important. Some patients with moderately advanced diabetes can, by treatment of this type, be carried through operative procedures, but not all. Some, especially those with virulent infections of the cellulitis type, do not respond to any method or procedure.

Archives of Dermatology and Syphilology, Chicago

April, 1920, 38, No. 4

- *Cultural Studies on an Infection of Skin. *Endomyces Albicans*. F. W. Tanner and B. Feuer, Urbana, Ill.—p. 365.
- *Peculiar Fungus Infection of Skin (*Soorpilze?*). M. F. Engman, St. Louis.—p. 370.
- *Necropsy Findings in Case of Congenital Scleroderma and Sclerodactylia. F. D. Weidman, Philadelphia.—p. 375.
- *Congenital Ectodermal Defect. Report of Case. W. H. Gocckermann, Rochester, Minn.—p. 396.
- Syphilis of Kidney, Ureter and Suprarenal. U. J. Wile, Ann Arbor, Mich.—p. 413.
- *Saturation in Roentgen Therapy: Its Estimation and Maintenance. L. B. Kingery, Ann Arbor, Mich.—p. 421.
- *Treatment of Chancroid with High Frequency Vacuum Electrode and Copper Sulphate Solution. L. H. Jacob, Philadelphia.—p. 434.
- *Case of Acquired Circumscribed Hyperhidrosis. W. A. Pusey, Chicago.—p. 436.

Infection of Skin with *Endomyces Albicans*.—Tanner and Feuer report an investigation of a fungus that caused a series of lesions on the index finger of a woman. The fungus seems to be identical with *Endomyces albicans*.

Peculiar Fungus Infection of Skin (*Soorpilze*).—The condition present in Engman's case looked exactly like that of a *Tinea inguinalis* or that produced by *Epidermophyton inguinale*. The process was very rebellious to treatment. Preparations made with potassium hydroxid in the usual manner for looking for such organisms, disclosed a peculiar fungus. Prof. George Moore of the Missouri Botanical Gardens reported that the fungus belongs to the general group known as the hyphomycetes, or fungi imperfecti. This group is a sort of botanical wastebasket for those forms of which the life history is not completely known, and consequently it is not well defined. The plant belongs to the order Moniliales and resembles to some extent both *Monilia* and *Oidium*. There is the strongest probability, however, of its belonging to the genus *Botrytis*. As to the relation of the organism to other known pathogenic fungi, it comes closest to the well known '*Soorpilze*' of thrush, which has received some ten or a dozen different names and the precise systematic position of which has never been satisfactorily worked out.

Necropsy Findings in Congenital Scleroderma and Sclerodactylia.—The diagnosis Weidman made in this case depends partly on the clinical features, but more on the morbid anatomic—essentially microscopic—findings. The disease

occurred immediately after birth, was associated with a bloody diarrhea and ended fatally. The only clinical feature, in fact, against the diagnosis of sclerema was the symmetry of the involvement. The hide-binding in this 15 day old baby, probably syphilitic, dying with enteritis and meningitis, suggests sclerema neonatorum; but it is symmetrical and periarticular, and at necropsy the induration is found to be purely subcutaneous. On these and other grounds, the diagnosis of sclerema neonatorum is rejected, and the case finally placed in the general group of scleroderma without affixing any new name to this pure subcutaneous form, believing it to be of the same known nervous causation as many other cases of scleroderma.

Congenital Ectodermal Defect.—Goeckermann's patient was a woman, 21 years of age. The case was typical of this group and presented no unusual features. The patients in this group all present a facies very closely resembling that of heredosyphilis. The influence of syphilis in the production of these congenital defects is probably nil. The reported cases of this group of ectodermal defects have exhibited a total absence of sweat glands, an almost total absence of sebaceous glands, a hypotrichosis with absence of lanugo hair, and a dental aplasia. Such patients suffer from a disturbance of the heat regulating mechanism, dependent on the inability of their skins to eliminate the necessary amount of water to keep the temperature level constant under varying external conditions.

Saturation in Roentgen Therapy.—An attempt is made by Kingery to establish an analogy between biochemical mass reactions and the changes produced in tissues by absorption of the roentgen rays.

Treatment of Chancroid with High Frequency Vacuum Electrode and Copper Sulphate Solution.—Jacob's paper is based on a study of fifty-two cases. Of these, four developed buboes, two of which resolved and two suppurated. Thirty-nine healed within two weeks, seven in three weeks, and six in from three to five weeks. No ulcer showed any tendency to spread after treatment. The cases detailed may well be compared with sixty-three cases of chancroids treated according to older methods, including treatment with: argyrol, calomel, black wash, dusting powder, phenol, iodine, iodoform, etc. Twenty-eight of these developed buboes, and had come under observation six months before. The reason for not having a larger percentage of early cures, Jacob thinks, is undoubtedly due to irregularity of attendance on the part of the patient. The method of treatment used was that first described by Robbins and Seabury in *THE JOURNAL*, Oct. 13, 1917, p. 1217.

Acquired Circumscribed Hyperhidrosis.—Pusey describes the case of a girl, aged 22, who had a sweating area on the extensor surface of the wrist and on the back of the hand toward the ulnar side, from 2½ to 3 inches wide and 5 inches long. It was sharply defined and its location did not vary. The skin was slightly pinkish and sodden. Sensation in it was diminished, but it was otherwise normal. The sweating occurred in almost constantly repeated attacks. By applying a 25 per cent. solution of aluminum chlorid cautiously over the affected area, the sweating was checked in the course of a week or ten days, and there has been no unusual sweating of this area for two months.

Archives of Neurology and Psychiatry, Chicago

April, 1920, 3, No. 4

*Study of Brain Repair in Rat by Use of Trypan Blue; Vital Staining of Macrophages. C. C. Macklin and M. T. Macklin, Baltimore.—p. 353.

*Epidermoid Papillary Cystoma Involving Third Ventricle. D. J. MacPherson Boston.—p. 395.

*Brain Tumors as Seen in Hospitals for Insane. M. E. Morse, Boston.—p. 419.

Postbellum Neuroses. H. W. Wright, San Francisco.—p. 429.

Study of Brain Repair.—The method of brain repair following the production of an injury to the brain with the hot needle stab was studied by the Macklins for as long a period as seventy-four days after the trauma. A uniform technic of staining was carried out, each animal receiving intraperitoneally 4 or 5 c.c. of a 1 per cent. aqueous solution of

Grübler's trypan blue forty-eight hours before being sacrificed, followed by a second dose after twenty-four hours. In those animals which were killed sooner than forty-eight hours after the operation, the same procedure was carried out, the dye being given at the proper intervals before the operation. The findings are set forth in detail. The illustrations accompanying this report are very well made and elucidating.

Epidermoid Papillary Cystoma Involving Third Ventricle.—In the case reported by MacPherson, the growth did not show the large polygonal cells with densely staining protoplasm, characteristic of tumors of the pars intermedia, nor did it resemble those arising from the choroid plexus. The infundibulum was distended, and its tissue partially replaced by the tumor with a suggestion of a tumor stalk near the right ventrolateral surface. Cross sections through the third ventricle and pituitary body, which was removed intact still attached to the brain, showed the duralike capsule of the growth to be continuous with the connective tissue of the gland. The pituitary gland was normal. The squamous epithelium of the tumor showed a suggestion of intercellular spines and well marked scaling; but no hair or sebaceous material was found. Vacuolization and cilia formation are not differential, and there does not seem to be any adequate criterion by which one may judge how this epidermal tissue happened to be in this location. From the situation and character of the growth, it probably originated as a result of a developmental abnormality of the infundibulum or from a hypophysial "rest." In the grouping of the third ventricle tumors according to the symptomatology, suggested by Weisenburg in an excellent review of thirty cases, this case would be in Class 1. Though the aqueduct was not dilated, the posterior part of the ventricle and the periaqueductal structures were apparently involved indirectly as shown by the pupillary disturbance without, however, paralysis of associated ocular movements and a reeling gait suggestive of involvement of the red nuclei or superior cerebellar peduncles. The patient's tendency to drag his feet and the weakness of the legs might be interpreted either as evidence of pressure on the internal capsules or of cortical injury. One of the early symptoms in this case was the evidence of hypopituitarism. Another striking feature was the drowsy, somnolent, apathetic condition of more than one year's duration, with periods approaching normality. There was an internal hydrocephalus with increased intracranial pressure, cerebral anemia, edema and pituitary disturbance. The patient was 52 years old, and had been ill for sixteen years. The clinical diagnosis was cardiorenal psychosis. A complete report of the necropsy is given.

Brain Tumors as Seen in Hospitals for the Insane.—It is not a rare experience for the pathologist in a hospital for the insane to find at necropsy a brain tumor undiagnosed during life. Morse made an inquiry into the reasons for the lack of diagnosis, and whether the group of brain tumor cases in hospitals for the insane presents any special characteristics as to symptomatology, age or stage of disease on admission, which would distinguish them from cases in general hospitals. The histories and necropsy protocols of forty-six cases were studied, and in most instances were examined in frontal sections. In about one half of the cases the brains and cords were also studied histologically.

Arkansas Medical Society Journal, Little Rock

March, 1920, 16, No. 10

Various Methods of Treating Fractures. C. E. Benefield, Conway.—p. 193.

Case of Meningitis. W. N. Freemyer, Little Rock.—p. 198.

Georgia Medical Association Journal, Augusta

February, 1920, 9, No. 10

Mechanical Methods for Supporting Abdominal Walls and Viscera. G. M. Niles, Atlanta.—p. 53.

Health Organization. M. F. Haygood, Atlanta.—p. 56.

Lung Diagnosis. A. Elkin, Atlanta.—p. 58.

Etiology and Treatment of Morning Drop. C. Watterston, Birmingham, Ala.—p. 60.

Relation of Endothelium to Purpuras and Allied Disturbances. E. C. Thrash, Atlanta.—p. 62.

Journal of Experimental Medicine, Baltimore

April 1, 1920, 31, No. 4

Source and Significance of Streptococci in Market Milk. F. S. Jones, Princeton, N. J.—p. 347.

Experimental Studies on Diabetes. Series I. Production and Control of Diabetes in Dog. 1. Gross Anatomic Relations of Pancreas and Diabetes. F. M. Allen, New York.—p. 363.

Effects of Carbohydrate Diets. F. M. Allen, New York.—p. 381.

Studies on Experimental Pneumonia. I. Production of Pneumococcus Lobar Pneumonia in Monkeys. F. G. Blake and R. L. Cecil, Washington, D. C.—p. 403.

d. II. Pathology and Pathogenesis of Pneumococcus Lobar Pneumonia in Monkeys. F. G. Blake and R. L. Cecil, Washington, D. C.—p. 445.

Experimental Syphilis in Rabbit. I. Primary Infection in Testicle. W. H. Brown and Louise Pearce, New York.—p. 475.

Streptococci in Milk.—To establish the possible types of streptococci which may appear in market milk, examinations of the vaginal discharges, saliva, feces and skin of cows in a large herd were undertaken by Jones. He found that the principal source of streptococci in milk is the cow's udder. The udder streptococci fall into two broad groups; those of the larger group agree in cultural characters and agglutination affinities with mastitis streptococci; the smaller group is composed of low acid producing streptococci. All the streptococci from the vagina, saliva, skin and feces have been non-hemolytic. Those from the saliva form a heterogeneous aggregation in which individuals fermenting raffinose, inulin and mannite predominate. From the skin a characteristic streptococcus has been found. It produces acid in dextrose, lactose, saccharose, maltose, raffinose, mannite and salicin, but fails to acidulate medium containing inulin. The fecal streptococci are characterized by the formation of large amounts of acid in dextrose, lactose, saccharose, maltose, raffinose, inulin and salicin. Mannite is not fermented. Neither the fecal nor the skin streptococci have been isolated from the bottled milk with any great frequency.

Experimental Diabetes.—The basis of these studies by Allen has been a form of diabetes produced by removal of the greater part of the pancreas of animals, leaving a remnant about the duct secreting normally into the duodenum, thus avoiding the rapidly fatal cachexia of total pancreatectomy and also the pancreatic sclerosis and deficient digestion of Sandmeyer diabetes and affording a very close and satisfactory reproduction of the clinical disorder. The observations support the conclusion that partially depancreatized animals show no inherent increase of tendency to diabetes.

Carbohydrate Diet in Diabetes.—The injurious effects of excessive carbohydrate diet were demonstrable by Allen in partially depancreatized dogs, in the same manner as in human patients. With severe diabetes there is rapid progress of emaciation and weakness and early death. With milder diabetes, there is frequently a transitional state following operation, when the fate depends on the diet. If the tolerance is spared for a time, recovery sometimes occurs to such extent that diabetes cannot be produced by any kind or quantity of feeding, but only by removal of a small additional fragment of pancreatic tissue. The proper degree of carbohydrate overfeeding is important in this early period for producing the most useful type of diabetic animals; namely, those having good digestion and general health combined with a permanent lowering of assimilative power, like the condition of human patients. In the early stage, glucose is more powerful than starch in producing diabetes, and animals which are progressing toward complete recovery on starch diet can be sent into hopeless diabetes by admixture of glucose. The difference seems to be merely of the rate of absorption, and indicates that a rapid flood of carbohydrate is more injurious to the pancreatic function than a slow absorption. Whenever permanent diabetes is present, so that complete recovery is impossible, starch brings on glycosuria more slowly than sugar, but just as surely. The difference in time in different cases amounts to days, weeks or months. The clinical lesson from such experiments is that even if a patient becomes free from glycosuria on withdrawal of sugar only, nevertheless other foods should also be limited. No significant differences were observed by Allen between the assimilation of different starches, or any extreme lowering of the carbohydrate tolerance by proteins, such as alleged

by certain writers in connection with the "oatmeal cure." Repair of traumatic inflammation and hypertrophy of the pancreas remnant are mentioned incidentally as the basis of the early tendency to recovery, and also hydropic degeneration of Langerhans' islands as an accompaniment of the lowering of tolerance by excessive diet. These are believed to have their parallels in human cases, and are to be described more fully hereafter.

Experimental Pneumonia.—The method of inoculation used by Blake and Cecil was by direct intratracheal injection under aseptic precautions, by the insertion of a small caliber, dry, sterile needle into the lumen of the trachea between the tracheal cartilages just below the larynx and the introduction of the culture by means of a Luer glass syringe inserted into the stock of the needle. Thirty-seven normal monkeys were injected. In thirty-two instances lobar pneumonia in all its aspects resembling the disease as seen in man was successfully produced. In five cases the monkeys failed to develop pneumonia. In one instance lobar pneumonia was produced by experimental contact infection. Normal monkeys inoculated in the nose and throat with large amounts of pneumococcus culture have failed to develop lobar pneumonia though carrying the organism in their mouths for at least a month. They have likewise failed to show any evidence of upper respiratory tract infection. Monkeys inoculated subcutaneously or intravenously with pneumococcus culture have in no instance developed pneumonia, but have either died of pneumococcus septicemia or recovered without localization of the infection in the lungs. These observations lead the authors to conclude that the pneumococcus is the specific cause of lobar pneumonia. The pneumococcus is unable to initiate an infection of the normal mucous membranes of the upper respiratory tract or to produce pneumonia following intravenous injection, but must gain access to the lower respiratory tract by way of the trachea in order to cause pneumonia. Lobar pneumonia is, therefore, bronchiogenic in origin. Invasion of the blood stream by the pneumococcus in lobar pneumonia is secondary to infection of the lungs. The character of the leukocyte reaction during the course of lobar pneumonia bears a fairly definite relation to the course of the disease.

Pathology of Pneumococcus Pneumonia.—In this paper the authors describe the pathology of pneumococcus pneumonia experimentally produced in monkeys, in order to show that the disease is identical with lobar pneumonia in man, and, they present observations concerning the pathogenesis of lobar pneumonia based on study of the pathology of lobar pneumonia in monkeys. In lobar pneumonia the pneumococcus primarily invades the lung tissue at some point or points near the root of the lobe. The pneumococcus subsequently spreads throughout the lobe by way of the interstitial framework and lymphatic system. Lobar pneumonia, therefore, is primarily an interstitial infection of the lung. Consolidation in lobar pneumonia begins in the alveolar tissue proximal to the hilum and progressively spreads to the more distal tissue until complete lobar consolidation develops.

Experimental Syphilis.—A study was made by Brown and Pearce of the infections produced in rabbits inoculated in the testicles with two strains of *Spirochaeta pallida* which had been carried in rabbits for several years. Infection resulted in all instances; the incubation period varied, as a rule, between two and three weeks and under properly chosen conditions could be reduced to approximately three weeks or less. The resulting infection pursued a typically cyclic or relapsing course which affected both the spirochetes and the associated lesions in the testicle. The specific reaction in the testicle showed considerable variation in the speed and sharpness with which successive phenomena occurred as well as in the character and extent of the processes themselves. These reactions were of two fundamental types. In one group of animals, the reaction was characterized by an intense cycle of acute exudation and infiltration with a lesser degree of proliferation, followed by crisis and subsequent recurrence of secondary cycles of proliferative reaction of a minor degree. In the other group of animals, the reaction was more chronic in character and consisted largely of infiltration and

proliferation. The progress of the reaction was more gradual, and sharp alterations in its course were absent. The infection progressed by a succession of stages with slight and irregular remissions. In a third group of animals, the reaction was subacute, combining at the same time the processes of exudation, infiltration, and proliferation. The first cycle of reaction was fairly acute and terminated in a definite crisis with moderate regression which in turn was followed by recurrence and more or less pronounced secondary cycles of proliferation. In all cases of outspoken infection, there was diffuse involvement of testicle, tunic, epididymis, and cord, but as the infection progressed, the lesions underwent many transformations, so that a variety of lesions was formed from processes which in the beginning were of a common type. Eventually, the reaction became more irregular and the infection became centered in one or more foci which were commonly situated in the epididymis, tunics, scrotum, or mediastinum testis. These centers served as residual foci of infection.

Nebraska State Medical Journal, Norfolk

March, 1920, 5, No. 3

- Roentgen Diagnosis of Diseases of Chest. E. W. Rowe, Lincoln.—p. 65.
Blood Chemistry with Reference to Surgical Risks. C. L. Husted, Falls City.—p. 72.
Preservation of Function in Joints. J. P. Lord, Omaha.—p. 74.
Tonsillar Diseases. J. B. McPherson, Hastings.—p. 77.
Influenza. H. J. Lenhoff, Lincoln.—p. 79.
Influenza. J. M. Patton, Omaha.—p. 80.
Influenza. C. Moore, Omaha.—p. 81.
Epidemic Cerebrospinal Meningitis in Crete. H. W. Quirk, Crete.—p. 86.
Meningitis in Crete in 1920. A. A. Conrad, Crete.—p. 87.

South Carolina Medical Ass'n Journal, Greenville

March, 1920, 16, No. 3

- Conservative Treatment of Compound Fractures. G. Benet, Columbia.—p. 62.
Contemplated Provision for Feeble-minded in South Carolina. B. O. Whitten, Clinton.—p. 66.
Making of a Children's Doctor. F. H. Richardson, Black Mountain.—p. 69.

Texas State Journal of Medicine, Fort Worth

March, 1920, 15, No. 11

- Are Some Methods Commonly Practised in Gynecology Constructive or Destructive in Results? B. Saunders, Fort Worth.—p. 391.
Appendicitis Sometimes a Gynecologic Disease. C. E. Cantrell, Greenville.—p. 393.
Chronic Duodenal Dilatation. H. Crouse, El Paso.—p. 394.
Intestinal Obstruction. J. W. Burns, Cuero.—p. 397.
Intestinal Obstruction; Report of Cases. R. L. Ramey, El Paso.—p. 400.
Cases of Injury of Abdominal Viscera without Visible External Signs. C. C. Nash, Palestine.—p. 401.
Reducing Mortality in Prostate Operations. A. O. Singleton, Galveston.—p. 403.

Virginia Medical Monthly, Richmond

March, 1920, 46, No. 12

- Abruptio Placentae; Case of Complete Separation Before Labor; Cesarean Section; Recovery. V. Harrison, Richmond.—p. 317.
Prevalence of Neglected Gynecologic Disorders. E. H. Richardson, Baltimore.—p. 320.
What Does the Obstetrician Owe the Pregnant Woman in the Way of Prenatal Care? B. Lankford, Norfolk.—p. 325.
Influence of Great War on Surgery. W. L. Peple, Richmond.—p. 328.
Symptoms and Treatment of Acute Intestinal Intoxication with and Without Acidosis. J. S. Weitzel, Richmond.—p. 330.
Nitrous Oxid-Oxygen in Mouth and Throat Operations. H. Harrison, Norfolk.—p. 332.
Results of Operation on Six Hundred Women for Disease of Pelvic Organs and Outlet. G. P. LaRoque, Richmond.—p. 334.
How Shall Doctors be Obtained for Rural Districts? J. A. Gibson, Leesburg.—p. 335.

Wisconsin Medical Journal, Milwaukee

March, 1920, 18, No. 10

- Plan for Broader Conception of Preventive Medicine. A. J. Patek, Milwaukee.—p. 397.
Communicable Diseases in Army. V. C. Vaughan, Ann Arbor, Mich.—p. 400.
Medical Reserve Corps and Civilian Practitioner. W. S. Middleton, Madison.—p. 407.
Application to Civil Practice of Therapeutic Principles Established in Treating War Injuries to Thorax. J. L. Yates, Milwaukee.—p. 414.
Some Phases of Reconstruction Surgery. J. W. Powers, Milwaukee.—p. 417.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 13, 1920, 1, No. 3089

- War Lessons for Radiology. C. T. Holland.—p. 353.
Some Points in Connection with Renal Disease. C. R. Box.—p. 356.
*Life History of First Case of Myxedema Treated by Thyroid Extract. G. R. Murray.—p. 359.
*Use of Antistreptococcic Serum in Quinsy. N. C. Forsyth.—p. 361.
Three Cases of Acute Perforation of Duodenal Ulcer; Laparotomy Recovery. E. Huntley.—p. 362.
*Papilliferous Carcinoma of Thyroid. B. Hughes.—p. 362.

Result in Case of Myxedema After Twenty-Nine Years.—When Murray first exhibited this patient in 1891, she was 46 years of age. She had then been ill for about five years. The condition was a typical myxedema. The patient was given thyroid extract prepared from a sheep's thyroid. A hypodermic injection of 25 minims of the extract was given twice a week at first, and later on at longer intervals. When the oral administration had been shown to be equally efficient, she took 10 minims by the mouth six nights a week so that 1 dram was consumed in the course of each week. On this dose she remained in good health, and free from the signs of myxedema. She continued to take liquid thyroid extract regularly until early in 1918, when it became difficult to obtain, so that she was given dry thyroid extract in a tablet instead. She enjoyed excellent health until early in 1919, when she developed edema of the legs, and died in May, 1919, at the age of 74 from cardiac failure. This patient was thus enabled, by the regular and continued use of thyroid extract, to live in good health for over twenty-eight years after she had reached an advanced stage of myxedema. During this period she consumed over 9 pints of liquid thyroid extract or its equivalent, prepared from the thyroid glands of more than 870 sheep.

Antistreptococcus Serum in Quinsy.—On the assumption that the primary cause of quinsy was a streptococcus, Forsyth determined to treat all cases of quinsy with antistreptococcic serum. Cases were selected in which the abscess had not perforated and in which the conditions were definitely acute. The following routine was adopted: Serum (10 c.c.) was injected at once; if there was any doubt of diphtheria 2,000 units of antidiphtherial serum were added. Ten cases only were treated. The most definite result obtained in these cases was the relief of pain in from six to twelve hours; the more or less acute pain when swallowing was eased some hours after that, but within a definite time before the abscess ruptured. In no case was incision of the abscess required by reason of the severity of the symptoms, and in all so treated there was pus discharging from the abscess on the fourth day of the illness. The temperature approximated to the normal one or two days after the serum injection.

Carcinoma of Thyroid.—One unusual feature in Hughes' case was the age of the patient, 13 years. The whole gland and the involved lymph nodes were removed. Three months after operation there was no sign of any recurrence and the patient was perfectly well.

Japan Medical World, Tokyo

March 6, 1920, 10, No. 10

- Alzheimer's Change in Neurofibrillae. M. Hayashi.
Study of Last Influenza Epidemic in Japan. S. Yabe.

Lancet, London

March 27, 1920, 1, No. 5039

- *Late Results of Surgical Treatment of Chronic Ulcers of Stomach and Duodenum. J. Sherren.—p. 691.
*Significance of Arneith's Reaction; With Particular Reference to Pulmonary Tuberculosis. H. S. Treadgold.—p. 699.
**"Positive Throat" in Diphtheria Convalescents. J. L. Brownell.—p. 706.
Life Assurance and Glycosuria. R. T. Williamson.—p. 708.
Diagnosis of Tuberculosis in Recruits and Pensioners. J. Guy.—p. 711.
*Bone Condition Analogous to Rickets in a Child of Five Months. H. K. Brade-Birks.—p. 712.
*Two Cases of Ichthyosis Hystrix in the Same Family. L. M. Davies.—p. 713.
Total Inversion of Parturient Uterus. W. G. Evans.—p. 713.

Surgical Treatment of Chronic Ulcers of Stomach and Duodenum.—Sherren maintains that the result of the operative treatment of chronic duodenal ulcer rivals that of any other major operation. With care during operation and with the after-treatment jejunal ulcer should become almost, if not quite, unknown. Gastrojejunostomy is the operation of choice in all except those in which the ulcer is involving the stomach or deeply eroding the pancreas. Both should be treated by excision. Among his cases "not quite well" are three in whom this latter condition was present. Sherren's successes more than two years after operation are a little over 80 per cent. of those operated on. This is considering those who cannot be traced or who died before the two-year period of other causes, thirty-two, as failures. The successes among those traced are over 90 per cent. Among 310 cases of chronic gastric ulcer in which operation was performed the mortality was 11. These figures include all ulcers treated by operation, except for acute perforation. All the partial gastrectomies except two are quite well, and none complain of any discomfort from the smallness of the stomach. I have been able to trace twenty-two patients treated by excision combined with gastrojejunostomy; all except two are quite well. Of the 219 survivors of those treated by gastrojejunostomy alone, of whom Sherren has been able to keep 187 under observation for over two years; 162 have remained perfectly well. To summarize the results: of the 310 cases, 220 have remained perfectly well for more than two years or died at a later date of other causes after having had no further gastric trouble. This is 75 per cent. of those operated on. Sherren emphasizes that while gastrojejunostomy combined with general abdominal exploration and dealing with other diseased organs is curative in the majority of cases of chronic duodenal ulcer, each must be studied and those eroding the pancreas or spreading to the stomach removed. Gastric ulcers which have perforated and are adherent to neighboring organs, indurated ulcers in the lesser curvature, and all in which there is any suspicion of malignancy must be treated by partial gastrectomy. He believes that gastrojejunostomy for chronic gastric ulcer will become the less frequent operation. Symptoms arising later if the correct operative procedure has been adopted are due to mechanical or ulcerative changes in the region of the anastomosis, both prevented by careful technic in the majority of cases, and becoming less frequent as individual experience ripens.

Arneth's Reaction in Pulmonary Tuberculosis.—A series of thirty cases representative of various stages of pulmonary tuberculosis were examined by Treadgold; all had tubercle bacilli present in the sputum. All cases were examined on at least three occasions over a minimum period of two months. The average time each case remained under investigation was 3.8 months, and the average examinations made were 4.15 per case, a total of 124 blood films being counted. Analysis of these cases showed that twenty-nine had a more or less marked shift to the left, and one a definite and continuous shift to the right. There were ten deaths, ten cases discharged unimproved after treatment, and ten cases definitely improved. Although these figures bear out, to some extent, claims made by other observers that the more marked the left shift the worse the prognosis, it also reveals the great danger of drawing any conclusions from single Arneth examinations. Again, two consecutive examinations showing a marked rise in the Arneth count are not necessarily indicative of the improvement in the lung condition of the patient. In view of the fact that the average tuberculous sputum usually contains considerable numbers of well preserved neutrophil leukocytes, films of tuberculous sputums were stained by Unna's polychrome-blue method, and the results contrasted with blood films of the same patients taken the preceding day. The first ten cases examined proved remarkably constant, the maximum variation in the count between the sputum and blood films being in no case more than 5 per cent. Further investigation showed, however, that the leukocytes of many perfectly fresh tuberculous sputums were disintegrated and impossible to count and the method was abandoned. On the whole, Treadgold's observations showed that a shift to the left is usually present

in cases of active pulmonary tuberculosis, the degree of shift being most marked, and generally progressive, in dying cases. It is less marked and is apt to remain fairly constant in cases which do not improve under treatment, while cases definitely improving usually show the least degree of shift, and this becomes progressively less as improvement continues. A constant and marked left shift in early suspected cases of pulmonary tuberculosis, where other sources of infection can be excluded, is presumptive evidence of active mischief. A left shift under 200 in old cases of "clinical arrest" is suggestive of recurrence and calls for minute and careful reexamination. Treadgold also reports on animal experiments.

Throat Antisepsis in Diphtheria.—A clinical study of fifty consecutive vaccine treated cases by Brownlie shows that local antiseptic throat applications are unreliable cures for the carrier and the positive throat. Diphtheria vaccine produces well defined degeneracy in morphological appearance of the cultured organism, followed by its complete dispersal from the locality invaded. In the past the diphtheria carrier has been subjected to hospital residence for weeks, perhaps months, which were avoidable. Diphtheria vaccine is effective in the treatment of the positive throat of diphtheria convalescents, and its use is administratively and economically sound.

Bone Condition Analogous to Rickets.—Brade-Birk's patient was breast fed. At the seventeenth week, when the child weighed 10 pounds 7 ounces, symptoms analogous to those of rickets were observed. The term "analogous to rickets" is used to prevent controversy as to terms. There seems to be a current belief that typical rickets cannot occur in a child so young; however, the signs in this case were typical.

Familial Ichthyosis Hystrix.—In Davies' cases the father's brother married the mother's sister. History of tuberculosis on father's side. No history of skin trouble or of illness of importance on either side. The mother's sister has four children, two of whom have typical ichthyosis. The mother describes the condition of her two boys at birth as follows: "They were born with their hands and their feet covered with a film, as if whitewashed." The white films refused to be washed off, but later, when the superficial layers had loosened, the underlying skin was rough and dry. When about 1 year old warts were first noticed on hands and feet, and these gradually spread and increased over rest of body. The other two children, who are unaffected, have been sleeping with them, and using the same towel. The mother has paid great attention to washing the boys. The two brothers are aged 12 years and 9 years, respectively. The skin of the face is dry and scaled, but clear of warts. Above the collar is a definite ring of grayish warts. The rest of the skin of the body is dry and scaly, and superimposed are numerous warts, varying in number in different localities. In the neighborhood of the joints, dorsal surface, and palms of hands and axillae the warts are especially numerous, and so closely packed that no normal skin can be seen. The penis also of the younger boy is covered with warts. The warts are grayish in color, and measure about 2 to 3 mm.

Medical Journal of Australia, Sydney

Feb. 14, 1920, 1, No. 7

Management of Diabetes. J. F. Wilkinson.—p. 141.
Neglected Factors in Prevention of Disease. F. S. Honc.—p. 145.

Feb. 21, 1920, 1, No. 8

Diagnosis and Quinin Treatment of Malaria. E. N. Bateman.—p. 163.
Chronic Mastitis. H. C. Rutherford.—p. 166.
Papulo-Urticarial Rashes Caused by Ringlets of Caterpillars of Moth. J. B. Cleland.—p. 169.
Hydrochloric Acid Poisoning with Sloughing of Part of Esophagus. J. B. Cleland.—p. 170.
Case of Nervous or Hysterical Fever. A. W. Campbell.—p. 171.

Archives des Maladies de l'Appareil Digestif, Paris

February, 1920, 10, No. 7

Appendicitis in Relation to Dysentery. Heuyer and Leveuf.—p. 385.
*Insufficiency of the Pylorus. C. Bonorino Udaondo and others (Buenos Aires).—p. 410.
*Cancer of the Duodenojejunal Flexure. A. Cade and A. Devic.—p. 419.

Gastric Myoma: Partial Gastrectomy. H. Bouquet.—p. 425.
*Changes in the Rectal Mucosa Following Intrarectal Ether Narcosis.
R. Savignac and J. Vidal.—p. 428.

Insufficiency of the Pylorus.—Bonorino recalls the fact that the organic and functional processes induced by true pyloric incontinence are not well known, though quite worthy of attention. He reports what he regards as a pure type of the anomaly in a syphilitic man of 36 with gastroduodenal ulcer and symptoms from the digestive tract for about three years. They included long periods of constipation followed by similar periods of diarrhea, but the stools contained no mucus or visible blood. Improvement in the general condition followed specific treatment, but symptomatic and dietetic measures were long required to abolish the symptoms of the ulcer and the occult blood in the stools. The exceptional feature of the case was the permanent gaping condition of the pylorus which in the roentgen picture behaved like a simple open tube draining the stomach, an absolute and permanent insufficiency of the pylorus. This insufficiency was probably due to adhesions around the pylorus holding it open. The lower margin of the stomach and the antrum seemed to be somewhat less movable than normal. The roentgen ray disclosed that when the opaque mixture reached the pylorus it passed on into the duodenum continuously without any contractions of the walls being observable. Surgical intervention was recommended, but the patient refused and left the service. Other conditions entailing insufficiency of the pylorus are reviewed in connection with this case.

Cancer of the Duodenojejunal Flexure.—Cade and Devic report a case of duodenojejunal cancer in a woman of 72 which presented some peculiar points of interest. Eighteen months before the patient entered the service of Cade she noticed that she was losing weight and that her strength was failing. Not until a year later did the first gastric symptoms appear. Then the patient began to be awakened occasionally nights by a moderate epigastric pain that was accompanied by a feeling of intense hunger. One month before entering the hospital she was suffering from vomiting spells and pain. The material vomited contained much bile, and the stomach was dilated. Peristaltic waves of rare intensity were observable. In view of the precarious condition of the patient, the certain indications of stenosis, and the fact that liquid nourishment could not be borne, an immediate gastro-enterostomy was done, which, however, resulted fatally thirty-six hours after the operation. The writers recall that Pic emphasized that gastric dilatation, accompanied by bile in the vomitus, was distinctly characteristic of duodenal cancer located below the papilla of Vater, as was shown at necropsy to be the case here. The feeling of intense hunger at night is accepted as a sign of duodenal ulcer, but here it was a sign accompanying cancer. It would seem that stenoses below the papilla of Vater are announced by two quite different series of signs, the one series being of a gastric order (duodenal reflux, vomiting, dilatation) and the other intestinal (constipation and at times even phenomena of occlusion). The first series is the more common.

Changes in the Rectal Mucosa Following Intrarectal Ether Anesthesia.—Savignac and Vidal state that as the result of rectoscopic studies on a series of cases, they were able to conclude that, while intrarectal etherization by the Monod method, slightly varied, and which they describe in detail, caused a light, acute, transitory rectitis, the inflammation was only superficial and produced no important subjective symptoms. About the only trouble was a slight tendency to constipation for a few days following the narcosis.

Archives de Médecine des Enfants, Paris

March, 1920, 23, No. 3

*Amyotonia Congenita. P. Haushalter.—p. 133.
Inherited Syphilis and Dystrophies. V. Hutinel and H. Stévenin.
—p. 145. Cont'n.
*Purpura in Young Infant. T. Reh (Geneva).—p. 179.

Amyotonia Congenita: Oppenheim's Disease.—Haushalter reports three more cases of Oppenheim's disease to be added to the list of 155 cases collected by Comby. In Case 1 he emphasizes that the infant's respiration was almost

entirely diaphragmatic owing to the atony of the inspirator muscles; also that the mother while pregnant with this, her eighth child, rarely noted any movements of the fetus, and they were unusually slight. In Case 2 the significant feature was that while the child, up to the age of 4, had remained flabby and inert, keeping whatever position he was placed in, he then underwent a rapid transformation. He gradually learned to walk, to carry things to his mouth, to get up from the floor, and even to dress himself. At 5 he could only say "papa" and "mama," but then he rapidly learned to talk; at 7 he started school; could write at 8, and at 9 he was in classes with boys of his age and did not seem to be their inferior mentally. His height was then 1.25 meters weight, 20.5 kg. There was no disturbance of circulatory, respiratory, digestive or urinary functions. His body was well proportioned. There was, however, a diffuse, generalized, muscular atrophy, in spite of which he could walk and run like other boys, without becoming overfatigued. Owing to the suppleness of his joints he could execute many tricks of contortionists. In Case 3 the congenital amyotonia predominating in the lower extremities, accompanied by diffuse muscular atrophy, continued to progress until death at 12 from bronchopneumonia. The habitual posture assumed by the child, together with the looseness of the joints and the muscular atrophy, had finally brought about a strange doubled-up condition of the body, the left side of the thorax resting on the anterior wall of the abdomen, the left hip joint on a level with the axilla, with excessive scoliosis similar to that sometimes seen in myopathies. While the lesions resembled those of a myopathy, this case could not be classed among myopathy cases owing to the fact that it was congenital.

Purpura in Infant.—The infant had an erosion in its mouth soon after birth and the pneumococcus gained access to the blood stream and induced symmetrical purpura and terminal pneumonia.

Bulletin de l'Académie de Médecine, Paris

Feb. 17, 1920, 83, No. 7

Hyphomycetoma. P. S. de Magalhães (Rio de Janeiro).—p. 137.
Epidemic Encephalitis. Chauffard.—p. 140.
*Movements of Fetal Lungs. Balthazard and Piédelièvre.—p. 141.
*Spasm of the Esophagus. J. Guisez.—p. 147.
The French Navy in the Protection of France Against Disease. H. Chevalier.—p. 149.

Intra-Uterine "Drowning" of the Fetus.—Balthazard and Piédelièvre declare that the possibility of intra-uterine movements of the fetal chest, similar to respiratory movements, is now accepted generally by obstetricians and medicolegal authorities. These movements may draw in fluid, and the fetus may actually "drown" in consequence. This may occur with otherwise normal childbirths, and it may cause suspicion of infanticide. The only way to determine whether the drowning occurred in the uterus is to examine sections of the deep lung, as, under normal conditions, débris of the amniotic fluid are often found in the more accessible parts of the lung, although only in small amounts. Reuter's technic shows fetal epidermic cells in the amniotic fluid and the crystals of cholesterol from the meconium. When these are found in histologic sections of the lungs, there can be no doubt that the fluids were drawn deep into the lungs by the premature movements of the respiratory muscles. Still other elements of these fluids can be detected by the technic described.

Spasm of the Esophagus.—Guisez relates that he has examined with the esophagoscope 420 cases of primary spasm of the esophagus. Most of them were grave and permanent, but all were a local pathologic condition and usually yielded to local measures. His experience has demonstrated, he says, that the esophagus is an actual organ, with an active function in passing the food along. If the food is swallowed in chunks, the chunks are arrested at the narrower points and drinking, to wash them along, aids in the demands made on the esophagus wall, which responds after many repetitions with a permanent contracture. The primal cause, therefore, is defective mastication and only when this is corrected can the cure be permanent. As a rule, the subjects with spasm

the esophagus are nervous or inclined to hysteria, but when there is a tendency to nervousness, the lack of proper mastication is the primal factor.

Bulletin Médical, Paris

March 11, 1920, 34, No. 14

The Question of the Care to Be Given the War Disabled. R. Le Fur.—p. 235.
Dangerous Syrups Listed in the Codex Français. Desquella.—p. 237.

March 13, 1920, 34, No. 15

The Military and Civilian Medical Service in French Colonies During the War. C. Simon.—p. 249.
Acute Cervical Arthritis Following Scarlet Fever. Mayet and Laval.—p. 251.

March 17, 1920, 34, No. 16

The Question of the Secondary Medical Personnel in Paris Hospitals. L. Brocq.—p. 263.
Treatment of Alcohol Addiction. D. Jaguaribe and F. Regnault.—p. 266.

Acute Cervical Arthritis Following Scarlet Fever.—Mayet and Laval state that the cervical vertebrae are a frequent point of attack for scarlet fever arthritis. Not only rheumatoid pains of short duration arise in this region, but genuine arthritis as well, which sometimes takes on a peculiar character. During the acute period the arthritis is characterized by pain and by a certain amount of swelling, sometimes taking the form of severe wryneck with extremely violent pain when any attempt is made to move the head. In some cases ankylosis results which may require orthopedic treatment by means of head and neck plaster casts (Minerva casts) applied under general anesthesia. They report a case of acute cervical arthritis, after mild scarlet fever, in which there was suppuration and intense but transient torticollis; it subsided after evacuation of the abscess under general anesthesia. The pus was found back of the deep vertebral aponeurosis and prevertebral muscles, having worked in between the elements of the anterior common ligament, in front of the axis and third cervical vertebra. By the twenty-fifth day the cure was complete, the movements of the neck normal.

Lyon Médical

March 25, 1920, 129, No. 6

Abscess in Lung. J. Chalier.—p. 249.
Beyrouth and Its Medical School. G. Gayet.—p. 284.

Abscess in the Lung.—The case reported by Chalier teaches that even with negative roentgen-ray findings, if the symptoms indicate a suppurative process in the lung, we should not hesitate to puncture. He introduced the needle at the point of least resonance and found pus at a depth of 6 cm. There was not more than 30 c.c. of pus, but prompt improvement followed its evacuation with speedy complete recovery. The general symptoms had dominated the clinical picture, progressive emaciation, with hollow eyes and extreme weakness, actual cachexia in a month's time, while the cough suggested acute tuberculosis. The abscess had developed after influenza with congestion of the base of the right lung.

Nourrisson, Paris

January, 1920, 8, No. 1

Diarrhea in Breast-Fed Infants. A. B. Marfan.—p. 1.
Medical Supervision of Wet-Nurses in the Provinces. P. Parisot.—p. 31.
Skin Tuberculin Reaction in Children. Germaine Mioche.—p. 42.

Diarrhea in Breast-Fed Infants.—Marfan states that while diarrhea in breast-fed infants is frequent, in its primary form it is almost never associated with symptoms of infection or intoxication, at least not so as to present any serious or lasting symptoms. It has no profound effect on the nutrition, and is very rarely of a grave nature. He opposes the idea advanced by many that diarrhea in breast-fed infants frequently requires that the child should not be given the breast for a time; he thinks such indications are rare. Nor does he think that a change of nurse is often indicated. In the foregoing respects a radical distinction is to be made between breast-fed and bottle-fed infants, for the general nutrition and growth of the latter are quickly affected by diarrhea; hypothyrepsia and athrepsia often result; toxic

complications (cholera infantum) or secondary infections may arise requiring varied and rather complicated dietetic treatment. In breast-fed infants, if the diarrhea is light, the first day the intervals between feedings should be lengthened and the time at the breast should be shortened. The intervals may be lengthened to four hours and the time at the breast may be reduced to five or six minutes. During the intervals the infant should be given a few spoonfuls of pure boiled water. The second day the intervals are shortened somewhat; the third day the time at the breast may be slightly lengthened. Thus, by degrees, according to the effect secured, a gradual return to normal is brought about. But in severe cases three or four feedings are entirely suppressed and pure boiled water is substituted, a quantity about equal to the amount of milk usually taken by the child when well.

Skin Tuberculin Reaction in Children.—Mioche states that on the basis of experience gathered during five years in Marfan's service, the following conclusions may be drawn as to the clinical value of the tuberculin skin reaction: 1. It is the procedure of choice among the various diagnostic methods in which local reactions to tuberculin play a part. 2. Its diagnostic value is incontestable. 3. Starting with zero in the newly born, the number of positive cutireactions increases progressively with the age of the subject. 4. In children under 1 year of age a positive reaction is a sure indication of progressing tuberculosis and usually of approaching death. In older children it is not a reliable index of tuberculosis in evolution unless supported by clinical evidence; and in adults its diagnostic value is practically zero. 5. As a method that will permit the examining physician to diagnose tuberculosis in infants it is incomparably better than all others, for by means of it he can recognize the presence of the disease at its very onset and thus perhaps be able to render some service.

Paris Médical

Feb. 28, 1920, 10, No. 9

*Fat Grafts. Maucclair.—p. 165.
Meat and Infant Feeding. G. Schreiber.—p. 169.
Polypoid Syphilitic Chancre of the Tonsil. G. Portmann.—p. 174.
The Menace from Typhus in Eastern Europe and Asia Minor.—A. Vaudremer.—p. 176.

Fat Grafts.—Maucclair expatiates on the numerous indications for and advantages of implants of adipose tissue and of the fatty bunches on the omentum, and reviews the literature on the subject. He has used fat grafts to isolate adherent tendons and muscles, to isolate nerves embedded in fibrous tissue, and to fill up depressions, to reinforce suture of the intestines, to plug and arrest bleeding in wounds of the liver and fill up the cavity after removal of a cystic tumor, to obliterate a fistula into the liver, to aid in suturing the uterus after myomectomy or amputation, to fill the cavity after an operation for osteomyelitis, to interpose between articulating surfaces, and to plug a persisting fistula into the pleura. The results on the whole have been very good in his own and others' experience. The reason why fat grafts have not been used more extensively seems to be on account of a mistaken impression that their vitality is very low.

Progrès Médical, Paris

Feb. 28, 1920, 35, No. 9

*Influenza After Pleurisy. Lortat-Jacob.—p. 91.
Rudiments of Alimentation. M. Loeper.—p. 92.
*Differentiation of Typhoid and Paratyphoid Bacilli. A. Sartory.—p. 95.

Influenza After Pleurisy.—Lortat-Jacob reports three cases out of a wider experience in which young women who had had pleurisy at some time developed galloping phthisis after a recent attack of influenza.

Differentiation of Typhoid and Paratyphoid Bacilli.—Sartory gives a table showing the different characteristics of the bacilli that may be cultivated from a patient with symptoms suggesting typhoid. The growth on fifteen different mediums can thus be compared. He prefers a peptone-glycerin culture medium after twenty-four hours in glycerin bile and then transfers to plates.

March 6, 1920, 35, No. 10

*Radio-Active Mud in Treatment of Adnexitis. M. Chifoliau and H. Guillard.—p. 103.

*Diabetes and Acromegaly. Lereboullet.—p. 106.

*Exophthalmos with Jugular Thrombosis. Cordier and Rollet.—p. 108.

Radio-Active Mud in Treatment of Adnexitis.—Chifoliau and Guillard have been utilizing the by-products of radio-active minerals, a radio-active mud, in cases of disease of ovaries and tubes, and have found it very satisfactory. They apply it in the vagina, a cylinder of the substance wrapped in gauze and molded to fit the lesion to be treated, while ice is applied to the abdomen. The mud is left in place for one or two days and after a pause of two or four days the application is repeated. The pain and fever seem to be reduced at once and the inflammatory process rapidly subsided, they say, permitting a conservative operation at need, the acute stage of the ovaritis or salpingitis being thus very much shortened. Sixteen cases are described in detail.

Diabetes with Acromegaly.—The circumstances of the case described confirm that alimentary glycosuria or diabetes observed with acromegaly is due to nerve irritation at the floor of the third ventricle, from enlargement of the sella turcica. Contrary to diabetes insipidus, which is due to the pituitary itself, the glycosuria type seems to be the result of irritation in the vicinity of the pituitary, not in the latter itself.

Exophthalmos with Jugular Thrombosis.—The protrusion of one eyeball occurred suddenly in the terminal phase of thrombosis in the jugular vein in a man of 30 with endocarditis and asystolia. The condition was like that with intermittent exophthalmos from venous stasis only it was permanent.

Revue Franç. de Gynécologie et d'Obstét., Paris

December, 1919, 14, No. 12

*Lipolysis in Fibromyomas of the Uterus. H. Keiffer.—p. 451.

*Radium Therapy in Menorrhagia and Metrorrhagia. P. Degrais.—p. 454.

Lipolysis in Fibromyomas of the Uterus.—Keiffer states that fibromyomas of the uterus may disappear during or after pregnancy by means of a complex mechanism, mainly through lipolysis, but associated with other degenerative processes. The details of lipolysis may be observed especially in the muscular fiber around the nucleus. The strands of connective tissue seem to resist longest the degenerative process. Toward the last the fibromyoma appears like a spongy tissue in the network of which is seen a complex mass in which fat droplets of various sizes, together with cellular refuse have accumulated. After childbirth some fibromyomas present the same characteristics as before pregnancy; others diminish in size, become softer, and seem to have disappeared, especially since the hemorrhages which accompanied them have ceased as well, but after three or four years the same fibrous bunches appear again and may develop into large growths. A third group of fibromyomas undergoes rapid and permanent retrogression.

Radium Therapy in Menorrhagia and Metrorrhagia.—Degrais having employed radium with success in numerous cases of menorrhagia and metrorrhagia, describes his technic and states what he regards as the indications for such treatment, namely, in cases associated with hemorrhagic metritis, uterosclerosis and fibromas. The results have been excellent, and on the basis of his experience with cases that have stood the test of time, Degrais believes that absolute cures can be effected by radium therapy.

Revue Médicale de la Suisse Romande, Geneva

March, 1920, 40, No. 3

Acute Appendicitis at Onset of Attack. E. Kummer.—p. 133.

*Influenza Does Not "Tuberculize." R. Burnand.—p. 145.

*Fixation Abscess in Influenza. L. Probst.—p. 159.

Critical Review of Procedures for Exploration of Stomach. E. Cottin and M. C. Saloz.—p. 163. Conc'n.

*Gastric Cancer with Pulmonary Lymphangitis. G. Turrettini and I. Gerber.—p. 177.

Does Influenza Predispose to Tuberculosis?—Burnand's experience at the Leysin Sanatorium confirmed the lack of any immunity to influenza in the tuberculous, but he was

unable to discover that influenza there or elsewhere had caused the flaring up of latent tuberculosis to any appreciable extent. There has been no recrudescence of tuberculosis throughout the country since the epidemic such as otherwise would be inevitable.

Fixation Abscess in Influenza.—Probst remarks that influenza is again the topic of the day in Switzerland, although the new epidemic is not so severe as in 1918 and 1919. His experience then and with recent cases has confirmed his previous announcements in regard to the benefit from a fixation abscess induced by subcutaneous injection of 1 c.c. of turpentine. He ascribes its efficacy to the hyperleukocytosis which it induces, as influenza is accompanied by pronounced leukopenia. He thinks this explains also why influenza is mild postpartum. The hyperleukocytosis of parturition renders the infection mild, and there is nothing so effectual, he declares, to induce hyperleukocytosis as the fixation abscess. He warns not to incise the abscess until the disease is subsiding (apyrexia), and then to make an ample incision and clear out the abscess thoroughly.

Pulmonary Lymphangitis from Gastric Cancer.—Turrettini and Gerber report a case of cancer of the stomach in a woman of 30 which ran its entire course without local subjective symptoms. After nine months of progressive weakness and anemia thrombophlebitis of the jugular and innominate veins led to palpation of a tumor mass in the stomach, soon followed by invasion of the lymphatics in the lungs by the malignant process. Necropsy showed that more than half of the walls of the stomach had been involved by the cancer.

Revue Neurologique, Paris

December, 1919, 26, No. 12

*Irritation in Pathology of Nervous System. Triantaphyllos.—p. 881.

*Suppression of the Babinski Reflex. Noïca and A. Radovici.—p. 891.

Amyotrophic Paralysis Following Tetanus Antiserum. J. Lhermitt.—p. 894.

*Intraspinal Treatment of Neurosyphilis. G. Marinesco.—p. 901.

The Significance of "Irritative Phenomena" in Nervous and Mental Pathology.—Triantaphyllos defends the view that there is no such thing as a formula of cellular change corresponding to so-called irritative lesions by which function is stimulated; that is, a formula that can be regarded as opposed to the destructive formula that diminishes the function. He holds further that every pathogenic agent in all pathologic conditions tend to abolish the function of the cell affected by the lesion. It is only when the pathogenic agent exerts an elective action on neurons that have a prohibitive effect on other neurons that the phenomena termed "irritative" appear. But these phenomena are not due to the fact that a so-called irritative lesion caused an increase in the function, but to the circumstance that a lesion with a destructive tendency has reduced inhibition (for the neurologic irritative phenomena) or has reduced the power controlling the normal ideation (for the psychic irritative phenomena).

The Suppression of the Babinski Reflex.—Noïca and Radovici give as the result of their experience that it is never safe to state whether the Babinski reflex is positive or negative if the foot of the subject is cold, as cold will often suppress the reflex temporarily.

Intraspinal Treatment of Syphilitic Disease of the Central Nervous System.—Marinesco reviews his experience in this line since 1910 and states that he has fourteen patients with tabes or general paresis whom he treated with salvarsanized serum over six and seven years ago. He gives a brief summary of three of the cases of general paresis in which the clinical improvement has persisted to date, except that on one patient, a physician of 35, who served all through the war with devotion and efficiency, recently had a relapse and died insane. The woman of 41 and another man are in clinical health to date, eight years after commencing the treatment.

Gazzetta degli Ospedali e delle Cliniche, Milan

Dec. 4, 1919, 40, No. 97

*Charcoal Impregnated with Laudanum in Therapeutics. I. Simon.—p. 1059.

Laudanum with Charcoal.—Simon has found that laudanum adsorbed by animal charcoal can be given with good results in acute and subacute enteritis without grave lesions of the bowel wall. He impregnates the charcoal with a 2 per cent. solution of laudanum, and states that the effect of the drug is realized with much smaller doses than otherwise, while the charcoal adsorbs toxins.

Dec. 11, 1919, **40**, No. 99

As Antidote for Strychnin. G. Giribaldi.—p. 1084.

Dec. 14, 1919, **40**, No. 100

Laria and the War. C. Pascale.—p. 1091.

Sodium Chlorid as Antidote for Strychnin.—Giribaldi cites authors who claim that sodium chlorid renders certain poisons less soluble, and describes research on rabbits and dogs which demonstrated that a strong solution of salt has a certain action in this line. The sodium chlorid must follow the strychnin in less than five minutes, either by the mouth or subcutaneously, for any effect to be apparent.

Riforma Medica, Naples

Feb. 7, 1920, **36**, No. 6

History of Symptomatic Treatment of Influenza. E. Maragliano.—p. 141.

Purpura with Uterine Myoma. G. Verrotti.—p. 145.

Thargic Encephalitis. P. F. Tunola.—p. 146.

Automatic Hernia. E. Aievoli.—p. 159.

Purpura with Uterine Tumor.—Verrotti has encountered two cases in which annular teleangiectatic purpura developed below the umbilicus in women of about 40 with multiple myomomas in the uterus. After hysterectomy, the dermatitis subsided in about a week.

Feb. 14, 1920, **36**, No. 7

Inaugural Lecture of Syphilography Course. Stanziale.—p. 170.

Influenzal Meningo-Encephalitis. D. Pace.—p. 175.

Multiple Cartilaginous Exostoses. G. Marsiglia.—p. 177.

Efficiency Phenomena. G. Molinari.—p. 182.

Influenzal Meningo-Encephalitis.—Pace reports a case of influenza and fever in a man of 41 who had not felt quite well since influenza four months before. The symptoms indicated acute congestion in brain and meninges, not improved by lumbar puncture, but lumbar puncture the fourth day seemed to arrest instantaneously the morbid process. In a second case the predominant symptom was delirium with high fever, but it yielded in the same way at once to lumbar puncture. Lymphocytosis was pronounced in the fluid in both cases. The retrospective diagnosis was influenzal meningo-encephalitis. The involvement of the brain in influenza is rare; he says that only a few cases have been reported in the different countries, including L. Litchfield's four published in THE JOURNAL, May 10, 1919, p. 1345.

Cartilaginous Exostoses.—Marsiglia analyses the literature on this subject and expresses the opinion that the exostoses are not local processes but develop from some single cause. This may possibly be the same cause responsible for rachitis, the effect in some cases being the latter, and in others, these exostoses. In a personal case described in a young man there were signs of rachitis along with the thirty-six exostoses, and when some of the larger ones were excised, the bone marrow ran out like oil from the gap left in the long bone. A familial and hereditary character was evident in this case. The thyroid was normal in aspect, but the short stature and rather backward mentality suggested possible lack of balance in the endocrine system.

Archivos Españoles de Pediatría, Madrid

December, 1919, **3**, No. 12

Two Cases of Achondroplasia. S. Cavengt.—p. 705.

Eczema in Infants. E. de Oyarzabal.—p. 712.

Eczema in Infants.—De Oyarzabal remarks that as the skin is so sensitive in children with eczema, it may be advisable to refrain from washing the eczematous regions with soap and water, and use olive oil, cold cream, a benzoin or hot 3 per cent. solution of boric acid. The region in children should be covered with a bandage to protect against

scratching. If in the face, and if it itches much, it is better to give small doses of bromid or chloral to insure the child's sleeping. Eczema of the scalp, he says, readily improves under a 2 per cent. salicylated yellow petrolatum or oil containing 1 to 5 per cent. anthrasol, cleansing once a day with olive oil and occasionally washing with an infusion of chamomile. Eczema, rebellious to all other measures, may yield to roentgen-ray exposures. "With these, admirable results are obtained."

Repertorio de Medicina y Cirugía, Bogotá

January, 1920, **11**, No. 4

The Amino-Acids in Metabolism. E. Gómez. A.—p. 186.

The Wassermann Reaction. J. Bejarano.—p. 195.

The Hygiene of Milk. G. Arbeláez R.—p. 205. Cont'n.

Estimation of the Clinical and Social Value of the Wassermann Test.—Bejarano insists that a decision as to whether a syphilitic can marry cannot be based on a single Wassermann test. A double plus reaction in inherited syphilis calls for treatment, and a triple plus reaction in acquired syphilis after a period of negative reactions justifies a prognosis of impending neurosyphilis. Even with negative blood reaction, an intense reaction in the cerebrospinal fluid suggests general paresis. He urges the appointment of a commission by the medical congresses to unify laboratory methods and control the work of different laboratories.

Revista Médica del Uruguay, Montevideo

February, 1920, **23**, No. 2

Catatonía with Stupor and Uremia Following Influenza. Elío García.—p. 49.

Headache with Mild Endocrine Disturbance. F. S. Garmendia.—p. 57.

Psychology and Psychiatry. C. Payssé.—p. 61.

Catatonía and Uremia Following Influenza.—García knows of only two cases on record in which dementia developed complete in two or four weeks, but in the case he describes the interval from the onset of symptoms was only one week in the previously healthy young man. Catatonía then followed at once, with progressive stupor and reduction of all the vital processes, the young man lying like a living statue until death the third month. When first examined, three weeks after the onset of the apparently mild influenza, the blood serum contained 0.82 gm. urea per liter and the urine 9.5 gm., and the cerebrospinal fluid a few days later contained 0.48 gm. per liter. At this time there had been a brief period of delirium but the stupor and catatonía which then developed persisted without intermission to the last. In another case of influenzal psychosis the blood serum contained 1.2 gm. urea and the puncture fluid 1 gm., but recovery was soon complete.

Headache with Mild Endocrine Disturbance.—Garmendia reports two cases of headache for which thyroid insufficiency was evidently responsible, and which yielded to thyroid treatment. In another case, latent chronic suprarenal insufficiency was finally detected and under epinephrin treatment, supplemented by recalcification measures, the patient regained strength and the headaches disappeared. In his fourth case a young woman had violent headaches during the menstrual periods, with occasional milder headaches in the intervals, and menstruation was scanty and painful. Tachycardia, a soft pulse, and pains in the region of the ovaries confirmed the assumption of ovarian insufficiency, and under ovarian extract treatment there has been no return of the disturbances during the four months to date. The symptoms in the suprarenal case had been great weakness, frequent nausea, pains in the left hypochondrium, and intense and frequent headaches. Small patches of slight pigmentation were found in the axillae and at the waist. The headache in the thyroid cases was in the upper and front part of the head and lasted the whole day, the skin was dry, and the outer portion of the eyebrows was scant of hairs.

Psychology and Psychiatry.—Payssé is alienist to the Vilardebo Hospital, and he here devotes fifty-seven pages to analysis of the methods of psychology and the necessity for applying them in psychiatry.

Semana Médica, Buenos Aires

Dec. 11, 1919, 26, No. 50

- *Urobilinuria with Continuous Malarial Fever. R. E. Reynolds.—p. 735.
 Vaccine Treatment of Foot-and-Mouth Disease. N. S. Lóizaga.—p. 738.
 *Mercuric Chlorid Poisoning. M. E. Pignetto.—p. 741.
 Vaccine Treatment of Diphtheria. P. Santillan.—p. 744.
 Tuberculin Treatment of Pulmonary Tuberculosis. Wimmer.—p. 746.
 Origins of Crystals. A. and A. Mary.—p. 747.
 Examination of the Eyes. R. Argañaraz.—p. 749.
 Dispensary and Preventorium. A. Casaubon.—p. 755.
 Work of University Instructor. (Docencia libre.) Garcia.—p. 757.
 Herpes Zoster Developing After Radium Treatment. Z. Guzman.—p. 762.

Urobilinuria and Continuous Malaria Fever.—Reynolds reports the case of a youth who had been sent to him with the diagnosis of pulmonary tuberculosis plus whooping cough. He found urobilinuria and a continuous fever, and was impressed by the way the physical signs in the lungs changed their location. The urobilinuria pointed to the liver, but the liver was not tender and the urobilinuria fluctuated from day to day. On this basis malaria was suspected and under quinin the urobilinuria promptly subsided, the supposed tuberculous lesions in the lungs cleared up, and the supposed whooping cough disappeared. Whenever the quinin was suspended, the urobilinuria reappeared. This is the most constant sign of continuous malarial fever, he reiterates, and it rises and falls with the fever, and yields with mathematical precision to quinin, even when the fever resists the action of the drug.

Prophylaxis of Mercuric Chlorid Poisoning.—Pignetto pleads for measures to put an end to the numerous cases of mercuric chlorid poisoning among women. He has had thirty-nine cases in his service alone in the last five years out of fifty-five attempts at suicides by different means. Ten died of the thirty-nine mercuric chlorid cases. Among the measures which he advocates to repress this almost epidemic of chlorid poisoning, is the enlightenment of the public in regard to the agonies from taking this drug. Few realize the tortures to which they are subjecting themselves when they take mineral poisons which are not speedily fatal.

Berliner klinische Wochenschrift, Berlin

Dec. 15, 1919, 56, No. 50

- Time Differences Between Electrocardiogram and Phonocardiogram of the Ventricle. T. Brugsch and E. Blumenfeldt.—p. 1177.
 *Lymphoid Foci in the Thyroid Gland in Addison's Disease. M. Dubois.—p. 1178.
 The Pathogenesis of Bone Cysts. K. Rohde.—p. 1184.
 The Spirochete Findings of Karl Spengler and S. Fuchs-von Wolfring. F. W. Oelze.—p. 1186.
 The Mode of Action of Iodin in Dysmenorrhea. Grumme.—p. 1188.

Lymphoid Foci in the Thyroid Gland in Addison's Disease.—In connection with the subject of lymphoid foci found in the thyroid gland in exophthalmic goiter, Dubois reports similar findings in six cases of Addison's disease, and states as the result of his investigations that in Addison's disease masses of genuine lymphatic tissue with typical germinal centers occur in the thyroid gland, and that this lymphoid tissue must be regarded as a heterotopic new growth, displacing the parenchyma. This new growth is not of an inflammatory nature, but is to be regarded as the result of an excitation arising from the suppression of the suprarenal system, which threw a heavier weight of responsibility on the thyroid gland. The formation of large follicles with germinal centers may have some connection with the status lymphaticus, which is constant in Addison's disease.

Deutsches Archiv für klinische Medizin, Leipzig

Feb. 18, 1919, 128, No. 5-6

- *Destruction of Albumin After Nephrectomy. E. Becher.—p. 261.
 *Hypertrophy of the Pylorus with Pernicious Anemia. Anna Kleemann.—p. 271.
 *The Albumin Quotient in Urine and Serum. B. Albert.—p. 280.
 *Suppurative Perimeningitis. P. Morawitz.—p. 294.
 *Syphilitic Aortitis. G. Hubert.—p. 317.

Residual Nitrogen After Nephrectomy.—Becher found a considerable increase of the residual nitrogen in the blood and tissues of a dog after nephrectomy. Retention alone cannot explain this; there must be increased destruction of albumin to account for all this waste.

Hypertrophy of the Pylorus with Pernicious Anemia.—Kleemann reports a case which confirms the frequent occurrence in pernicious anemia of symptoms which suggest cancer, and necropsy apparently confirms the scirrhus growth at the pylorus. But the microscope shows merely simple hypertrophy of the pylorus. It had developed in the course of the typical pernicious anemia in the man of 39. This may have been at first merely pylorospasm, but the hypertrophy soon followed. There had been also intermittent jaundice all through the disease, but the biliary apparatus seemed to be normal at necropsy, as also the pancreas and suprarenals, although there had been occasional alimentary glycosuria.

The Albumin Quotient in Urine and Blood.—Albert has materially simplified and shortened the technic for determining the ratio between the serum albumin and serum globulin in urine and blood serum. It is based on precipitation with trichloroacetic acid and centrifuging. This, together with parallel tests with other technics confirmed its reliability.

Perimeningitis.—Morawitz reports three cases of what he calls acute suppurative peripachymeningitis. It developed in two girls of 15 and a soldier, in the course of staphylococcus sepsis. The inner aspect of the dura was normal, but the adipose tissue between the dura and the periosteum of the vertebrae and the ligaments had become transformed into an abscess. It reached from the lumbar region to the neck in one of the cases. Lumbar puncture released pus, but the mind was clear throughout in all. The legs and lower trunk were extremely sensitive but not the arms. The pains and tenderness were most pronounced in the back, and especially in the lower thoracic and upper lumbar vertebrae. No osteomyelitic foci could be discovered. In one of the cases the perimeningitis seemed to be the only localization of the infection. Operative intervention should be considered when the perimeningitis is diagnosed in time.

Syphilitic Disease of the Aorta.—Hubert insists on prolonged specific treatment and that it must be vigorous. In 300 cases included 25 per cent. with tabes. In 60 cases the interval since infection averaged over twenty-three years. The range was from four to over forty years. The aorta was affected in 70 per cent. of all the cases of visceral syphilis, and in 14.6 per cent. of the total 1,485 syphilitics. In private practice, Romberg found it in 26.2 per cent. Hubert's 1,485 syphilitics included 750 men and 726 women, but twice as many men as women developed the aortitis. The pain or ache behind the upper portion of the sternum is almost pathognomonic. Some say they feel as if a stone were lying on the heart; others say that something is twisted or torn in this region. The pain may spread to both sides, to the back or neck or left arm. About a third of the patients complain of shortness of breath on exertion or vague stomach disturbances. The complexion often recalls that of cancer patients, but the exaggeration of the second aortic sound is the earliest symptom in most cases. A systolic murmur in the aorta was evident in some position in 75 per cent. of his cases.

Deutsche Zeitschrift für Chirurgie, Leipzig

July, 1919, 150, No. 3-4

- *Gangrene of Scrotum and Skin of Penis Following Erysipelas. Seemann.—p. 145.
 Gunshot Wounds of the Joints. Schenk.—p. 152.
 War Surgery in Russia. J. Halpern.—p. 184.
 Wound Infections in General. Wieting.—p. 213. Conc'n.
 *Spinal Protuberance as Sequel of General and Local Tetanus. H. Brunzel.—p. 258.
 *Gastric and Duodenal Ulcers in Children. P. Theile.—p. 275.

Gangrenous Erysipelas of Scrotum and Penis.—In Seemann's case deep-seated erysipelas had developed from a gunshot wound of the buttock and extended to the back of the abdomen, thighs and genital organs, and the penis became swollen to twice its normal size. The scrotum was puffing up like a balloon. Seemann punctured to relieve the pressure on the scrotum, 30 c.c. of a turbid, bloody, serous fluid being removed from either side. Examination of the fluid revealed streptococcus in pure culture. The whole scrotum and the skin of the penis, with the exception of a small strip

of the prepuce, soon became gangrenous. The gangrenous tissue was cut away, leaving the testes, spermatic cords and penis exposed as in an anatomic preparation. In one month the wound surfaces had healed sufficiently to consider undertaking repair measures. There was nothing of the scrotum left that could be used for plastic purposes. Seemann did not anticipate good results from a new scrotum, so he decided to reconstruct merely the penis. He drew the left testis through the inguinal canal and embedded it in the preperitoneal fat directly under and medial to the anterior superior iliac spine, and sutured together over it muscle and aponeurosis, allowing for drainage. This procedure could not be applied to the right testis because of an abscess in the abdominal wall. Seemann therefore removed the right testicle. The margins of skin were used to cover in part the corpora cavernosa and corpus spongiosum. To prepare for the covering of the balance of the penis, the incision wounds on the abdomen were freshened and drawn together with wire sutures. Following Pilz and Böhler, the fragment of prepuce was drawn down over the penis. A transverse flap was cut from the perineum, turned over 90 degrees toward the front, attached to the penis from below, and joined to the preputial fragment that was in place. A second long, wide strip was taken from the healthy portion of the lower abdomen and was used to cover the balance of the penis, being sutured to the preputial fragment, the perineal strip and the skin at the root of the penis. The end-result is entirely satisfactory. The penis is covered throughout with healthy and for the most part movable skin. The glans is exposed as after circumcision. The patient has no pain, and ability to cohabit has been preserved.

Spinal Protuberance After General Local Tetanus.—Brunzel reports a case of protuberance of the spine after tetanus in a girl of 9. It is the first instance on record, as far as he is aware, in which the patient recovered. The girl had been wounded in the left lumbar region by a charge of shot from a small shotgun used for shooting sparrows. The wound of entrance was about the size of a dime and located just below the twelfth rib. The kidney had been torn into three parts by the force of the explosion, as the gun had been fired at very close range. Twelve days afterward severe tetanus, with violent muscular spasms, trismus and fever, set in, but three months and a half after admission to the hospital the patient was dismissed with a small fistulous wound that had almost ceased oozing. She had had no spasms for more than two weeks. Shortly before the patient was dismissed it was noted that there was a small protuberance of the spine in the lumbar region. She could only bend at the hips; the back was held stiff. A roentgenogram revealed the presence of most of the shot in the region of the third and fourth lumbar vertebrae. The spine did not appear to be injured. The protuberance was evidently due to the extremely violent paroxysmal contractions of the muscles of the back, crushing vertebrae. Three years after the accident the patient had become a strong, healthy girl. The spine had recovered its elasticity, but the protuberance presented the same appearance as when the patient was dismissed from the hospital. Brunzel cites another case of a sergeant who suffered shrapnel injuries in the left humerus and in the left lumbar region. A month later terrible paroxysms of pain developed which were supposed to be due to an impinged nerve. A roentgenogram disclosed a shell fragment close to the second and third lumbar vertebrae. The spine was not injured. The pain crises continued and the patient had to be kept under the influence of morphin. An attempt to remove the foreign body had to be given up. In three or four weeks the pain crises gradually ceased and the patient recovered. A protuberance of the spine in the lumbar region was now discovered. On dismissal the back was still somewhat stiff, but the patient could stoop readily and was without pain. The discovery of the protuberance explained the clinical picture. The paroxysms of pain that had continued for weeks were without doubt due to tetanic muscle contractions from a purely local tetanus confined to the lumbar region.

Gastric and Duodenal Ulcers in Children.—Theile states that gastric and duodenal ulcers in children, while com-

paratively rare, are not unknown and occur much more frequently than is realized. Of 248 cases of ulcers of the gastroduodenal tract in children under 16, collected from the literature, there were 119 gastric ulcers and 185 duodenal ulcers. Of these cases, 89 were in boys, 98 in girls, and in 61 cases the sex was not mentioned. Theile reports a case of pylorus resection in a 2 year old girl, with good results, which he thinks will have the effect of increasing the confidence in this operation in the quite young. Tuberculous and uremic ulcers, and those in the new-born, give the least promise of success from operation. Although in typical marantic ulcers in infants the prognosis is very unfavorable, the good results secured from surgical intervention in the foregoing case will offer some encouragement. He describes further a successful operation for perforated gastric ulcer in a girl of 13. Appendicitis had been diagnosed as the idea of a perforated gastric ulcer was rejected as preposterous at that age. In a third case, gastro-enterostomy was done to relieve a hard duodenal ulcer, with stenosis of the pylorus, in a boy of 15, who had been presenting symptoms for about three months, vomiting at night, with great thirst. This is the youngest case of duodenal ulcer on record, he says.

Münchener medizinische Wochenschrift, Munich

Dec. 12, 1919, 66, No. 50

- Oxyuriasis of the Appendix. A. Lāwen and A. Reinhardt.—p. 1433.
*Aorta Changes and Their Clinical Significance. G. Hubert.—p. 1436.
*Contour of the Lungs in Roentgenograms. H. Chaoul.—p. 1438.
Stomach Spasms in Nervous Dyspepsia. A. Bittorf.—p. 1439.
Epidemiology of Influenza. R. W. Brandt.—p. 1439.
Torpid Ulcers Following Gunshot Wounds. Urban.—p. 1440.
Turpentine Injections (Klingmüller) in Acute and Chronic Gonorrhea. G. Krebs.—p. 1441.
The Significance in Roentgenographic Services of Variations in the Current as Supplied by the Power Plant. W. Steuernagel.—p. 1443.
Casein Therapy. P. Lindig.—p. 1443.
"Urology and the General Practitioner." C. Posner.—p. 1444.
"Treatment of Surgical Tuberculosis." E. Peters.—p. 1444.

Aorta Changes and Their Clinical Significance.—Hubert says that clinical changes in the aorta are a frequent finding in patients in middle age and in more advanced years. They are often noted when they do not seem to be causing the subject any trouble whatsoever. Nevertheless, they are usually of great significance, for almost without exception they are an indication of an organic pathologic condition in the aorta itself. One and the same symptom may be the expression of widely different diseases, and thus present a variable significance, from which fact diagnostic errors are likely to arise. Hubert takes this as his justification for discussing in detail the various diagnostic values that attach to the pathologic processes in the aorta. The changes in the aorta fall naturally into three classes: percussive, auscultatory and roentgenologic, of which the last is the most important. A diffused area of aortal dulness is a sure indication of a far advanced pathologic process. Whether sclerosis or syphilis of the aorta is present must be determined by other means, for in connection with aorta changes one must ever bear in mind the old saying: "The diagnosis must never be based on a single symptom." The accentuation of the second aortic sound, if accompanied by hypertrophy of the left ventricle and an increased blood pressure, indicates an induration of the kidney either from sclerosis or through chronic injury to the glomeruli. If the accentuation of the second aortic sound is only transitory, it will be shown by the fact that the increase in blood pressure will only be transitory. The most frequent cause for the accentuation of the second aortic sound is to be sought in the aortal wall itself. This symptom if present manifests itself early. Likewise, the most frequent cause for the systolic aortic murmur is not valvular trouble but some pathologic condition in the wall of the thoracic aorta.

The Peculiar Contour of the Lungs in Roentgenograms.—Chaoul states, on the basis of investigations conducted on living subjects and cadavers as well, that the peculiar contour that the lungs present in a roentgenogram is due to the blood-filled pulmonary vessels which appear as positive shadows. The appearance of a double contour often seen is not produced by a bronchial wall, as some have maintained, but is due, Chaoul thinks, to the shadows of blood vessels

running parallel to a bronchus. The crossings of the vessels and the bronchi cause the lighter and suddenly darker shadow streaks.

Wiener Archiv für innere Medizin, Vienna

March 1, 1920, 1, No. 1

- *Respiration Affecting Shape of Chest. K. F. Wenkebach.—p. 1.
- *Drumstick Fingers and Osteo-Arthropathy. F. Höglér.—p. 35.
- Palpation in Study of Pulse and Blood Pressure. J. Pal.—p. 77.
- *Pathology of the Lungs. I. H. Eppinger and R. Wagner.—p. 83.
- *Pathology of the Vegetative Nervous System. F. Depisch.—p. 147.
- *Pathology of Peripheral Arteries. J. Wiesel and R. Löwy.—p. 197.

Pathologic Respiratory Conditions as Affecting Shape of Chest.—Wenkebach's article supplements one published in 1907 on the pathologic relations between the respiration and the circulation. He here discusses the six main factors influencing the form of respiration and shape of the thorax, ascribing much importance to extreme leanness as this allows the so-called asthenia shape of the thorax to develop even without any constitutional anomaly or congenital predisposition. He also emphasizes the importance of the muscles of the back in quiet, unconscious respiration as well as in forcible inspiration. He comments on the advantage of humming with the lips closed, as a breathing exercise and for study of the action of the abdominal muscles. With this, the diaphragm is drawn up extremely high in the chest as the humming continues to the limit of expiration. Coughing is still more instructive for study of the muscles involved in respiration. He recalls that the diaphragm like all other muscles is subject to reflex influences, and its excursions can be modified from distant points. When breathing quietly, with mouth closed, if the mouth is opened suddenly, the diaphragm rises a little. Continuing the even breathing with the mouth open, it is evident that conditions in the respiration are quite different from what they were before. The sinking of the root of the tongue when the mouth is opened may explain this difference in the tonus of the diaphragm. Whatever the explanation, there is no doubt that this modified behavior of the diaphragm is an element not to be overlooked in habitual mouth-breathing.

Drumstick Fingers.—Höglér has coined the term "acropachy," from *akron*, "tip" and *pachy*, "thick," to define the condition and differentiate it from acromegaly. It accompanies four groups of diseases: those with abscess in the lungs; malignant disease; processes in the liver, mainly hypertrophic biliary cirrhosis, besides, unilateral acropachy from compression by an aneurysm or joint lesion. In one of the four personal cases described, there were evidences of lymphogranulomatosis and infantilism with the acropachy in the youth of 17. Under roentgen-ray treatment of the principal lymphogranuloma—in the chest—the tumor retrogressed almost entirely, and the fingers returned to approximately normal shape and size. The changes in the fingers with tabes and syringomyelia are not of this acropachy type. The various theories as to the etiology are compared, and the secondary and curable nature of the acropachy is emphasized.

Pathology of the Lungs.—Eppinger and Wagner reiterate that anything tending to modify the circulation and metabolism of the blood is liable to induce appreciable disturbance in the circulation as a whole even with a comparatively sound heart. In the last eight years they have encountered five cases in which the total circulation was much impaired from primary endarteritis of the finer ramifications of the pulmonary artery; the main artery was intact. They diagnosed the condition during life in three of the cases, the practical obliteration of the finer branches throwing extra work on the right ventricle alone, and this had become enormously hypertrophied. The left ventricle formed merely a crescent lying on the right ventricle, and the atrophy extended to the left auricle, which may even be smaller than usual, in comparison to the size of the right heart. The integrity of the valves is characteristic of these cases. They have found fourteen similar cases on record; of the total nineteen cases, eleven were in men and ten of the patients were between 20 and 40; one was over 60. The pulse is small and there is much cyanosis and edema when the right ventricle fails to do its work properly, but there is very little

dyspnea. There may be occasionally a tendency to bleeding from the lungs. Before this phase is reached, the extremely enlarged right heart may be the only sign of the condition. Cases are known in which there was some cyanosis early. A diffuse darkening of the lung in the roentgen picture testifies to stasis.

Bulbar Disease with Irritation of Only Half of the Vegetative Nervous System.—Depisch reports a case of this kind and compares it with others on record. They all testify that the fibers of the vegetative system become crossed on their way to the periphery, the same as the motor and sensory fibers. The primary cause was usually some localized hemorrhage in the medulla oblongata, entailing bulbar paralysis. The unilateral symptoms included a higher local temperature, the unilateral action of drugs, etc. He discusses the mechanism of the different symptoms, and gives considerable bibliography.

The Peripheral Arteries in Acute and Chronic Diseases.—Wiesel and Löwy exclaim that the peripheral vascular system has never been thoroughly studied. Their own research on twenty cadavers after long clinical study of the cases demonstrated that in all those in which death was due to insufficiency of the circulation, the middle coat of the smaller arteries showed constantly edema, degenerative processes or foci of calcification, etc., or all combined. These regular changes may be associated with myocarditis or they may alone dominate the clinical picture. They explain the inefficacy of digitalis in certain cases. The more advanced the peripheral changes, the less the action of digitalis, so that these changes should be suspected whenever digitalis fails in its expected action. This assumption is further justified by the efficacy of strychnin in raising the tonus of the vessels in such cases. These changes in the peripheral vessels must be an important factor in the pathology of stasis, especially in internal organs. They give five plates showing the changes found in the peripheral arteries and veins in their twenty cases.

Wiener klinische Wochenschrift, Vienna

Dec. 18, 1919, 32, No. 51

- Scurvy Menace in Vienna. Harriet Chick and Elsie Dalyell.—p. 1219.
- Oligodynamic Effects of Metals. G. Salus.—p. 1220.
- Mental Diseases in the Army. G. Stiefler.—p. 1223.
- *Hemorrhagic Diatheses. A. Kirch.—p. 1226.
- *Treatment of Trichophyton Infection. O. Sachs.—p. 1229.
- Submucosa Laryngitis in Relation to Erysipelas. R. Imhofer.—p. 1231.

Dec. 25, 1919, 32, No. 52

- Effect of the War on Eye Diseases Among the Civil Population. R. Seefelder.—p. 1245.
- Phototherapy in Severe Rectal Conditions Following Dysentery. A. Foges.—p. 1250.
- Technic of Vein Puncture. Charnass.—p. 1251.
- Gunshot Wound of Spleen; Extirpation; Recovery. S. Mitterstiller.—p. 1253.
- Remarks on Nuclein Treatment. J. Donath.—p. 1254.

Hemorrhagic Diatheses.—There has been an increase of hemorrhagic diatheses, Kirch reports, during the war period, usually associated with scurvy. The various forms are clearly distinguishable hematologically. Aside from infections, the restricted war diet was the cause. A hemorrhagic diathesis, he says, presupposes vessel injury, and as blood platelets are an important factor in blood coagulation, they may have the intravascular function of making the vessel walls more dense. A deficiency in blood platelets might thus contribute to the permeability of the vessels.

Treatment of Trichophyton Infection.—Sachs commends intravenous injections of a 40 per cent. solution of hexamethylenamin in the treatment of deep trichophyton infection, with large nodules. As a first dose 6 gm. (15 cm. of fluid) are injected; on the second or third day after the first injection the dose is increased to 8 gm. In one case 8 gm. were given as a first dose, which was increased to 12 and 14 gm. The number of injections required and the exact quantities of hexamethylenamin that will be needed cannot be definitely stated in advance. Of ten patients so treated, one was cured after a single injection of 4 gm., another after three injections of 4, 6 and 8 gm., respectively, in ten days; another patient received four injections (once 6 gm. and three times 8 gm.), and was cured in fourteen days.

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THE FUTURE OF OBSTETRICS AND GYNECOLOGY AS A SPECIALTY*

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Allow me to express my deep appreciation of the honor conferred on me at the last meeting of the section in selecting me to preside over this year's deliberations.

The honor, however, carries with it the obligation to deliver the chairman's address, the selection of the subject being left to your presiding officer. For a time I had it in mind to dodge the issue, as it were, and address you on a scientific subject. This course has decided advantages, since we physicians are accustomed to papers on scientific subjects, as we are wont to inflict them on a long suffering medical public on all occasions. On the other hand, the chairman runs no little risk of having his production, his address, far outclassed by the other scientific papers presented at this meeting. Consequently I have decided to attempt the "address" with the hope of holding your attention on account of the subject selected, since your presence here denotes that you are more or less interested in obstetrics and gynecology, although you may not be specialists.

THE SPECIALTY OF OBSTETRICS AND GYNECOLOGY

I would particularly call your attention to the title of my address, since it indicates the position I have for a long time taken and am prepared to defend regarding the specialty we are interested in. I beg you to note that the two divisions of the specialty have been linked together, and that the future of not two specialties but a single specialty will be considered. Again note what perhaps is a small matter, yet may not be without significance: The specialty is designated as obstetrics and gynecology and not the reverse. If obstetrics may be defined as the care of women during pregnancy, labor and the puerperium, and gynecology as the science of the diseases peculiar to women, it seems illogical to place what has to do with disease in advance of what has to do with care whereby disease may be prevented.

We are all more or less familiar with the discussion which has been carried on during the last twenty or more years regarding the place of gynecology as a specialty. While it probably has had little effect one way or another, for man's course in life is determined by inclination and self interest and not by what other people may say, it has shown certain fundamental

defects in our medical make-up. The gynecologists as a class have deliberately confined themselves to the surgical aspects of the diseases of women, some of them openly declaring they knew nothing of obstetrics and did not care to learn. As surgeons of a special part of the human body, they have become masters of their art. It was inevitable, however, that they should become discontented with a small field of surgery, and that they should ambitiously push on toward adjacent fields. Thus we see abdominal linked to gynecologic surgery, and the gynecologist operating on men as well as women on the ground that he is an abdominal surgeon as well as a gynecologist.

The general surgeon was quick to see the inconsistency of such a position, and declared that it was time to do away with a specialty that no longer fulfilled the requirements of a specialty. The assertion that gynecologic surgery is after all merely surgery of a special field and that it can be acquired by any surgeon who is willing to devote the necessary time to its mastery, and hence should be included in general surgery, has had more and more advocates as time has gone on. Thus we see the tendency to combine gynecologic with general surgery in hospitals and teaching institutions.

It is obvious that the gynecologist would have escaped the embarrassing position of being "hoist with his own petard" had he stuck to his specialty, or, rather, enlarged his specialty so as to include all conditions and changes in the female genital tract in which his special work naturally lies. This would have led him to devote more time to the field of obstetrics, not necessarily the actual practice of obstetrics, for that is a matter of detail to be worked out by each individual, but paving the way for his true mission as a specialist, the prevention rather than the cure of disease.

The truth of the matter is, if we are honest enough to admit it, that the gynecologist has only himself to blame for the present condition of affairs. He threw himself into the development of pelvic surgery to such an extent that things outside of the operative part of one division of the specialty failed to interest him. At the society meetings he would spend hours in the discussion of operative technic, and suddenly feel the need of fresh air when a paper was read on a non-operative topic equally important and necessary to his specialty as it should have been practiced. He was bored to extinction by every part of obstetrics, everything connected with the proper conduct of pregnancy, labor and the puerperium, which if uniformly carried into effect would have made a larger part of his operative work unnecessary. For, with the exception of tumors and the results of venereal infection, the greater part of the gynecologist's work has been

* Chairman's address, read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

devoted to the task of restoring parts or functions rendered defective by neglect or bad management during pregnancy, labor or the puerperium.

Both in theory and in practice we are very apt in this country to treat too lightly the words "specialty" and "specialist." It is the common experience of heads of departments in hospitals and medical schools to receive applications from practitioners with little or no experience for opportunities to become specialists in different lines of work. It is no uncommon occurrence to receive a letter from some one ambitious to become a specialist in gynecology asking to be appointed chief assistant for a period of six months or more. The letters go on to explain that the writers have performed quite a number of abdominal operations successfully, but that they want a larger experience than their practice affords before taking up gynecology as a specialty, with never a word about obstetrics, except that they have given up obstetric work with the exception of the operative part—not a word regarding opportunities in the clinic to work out certain nonoperative problems in which they should be interested. Such things apparently never have been thought of; ambitious to a degree, the applicants want experience which not infrequently they offer to pay for, whereby they may devote their whole time to surgical gynecology, through which they plan to restore to health women suffering from lack of care during childbirth.

Where lies the blame for such a misconception of the requirements of a specialty? Why is it that men above the average intelligence, as shown by their success in practice and their medical standing in their state, should think of a gynecologist merely as a man who is devoting his life to surgical carpentering work in a special field? Is not the answer that the medical schools and hospital clinics must assume the blame fundamentally in that they have divorced obstetrics from gynecology, belittled the former and for various reasons, not the least important being economic, have given undue prominence to the surgical aspects of the latter? The result is that the ground work absolutely essential for one aspiring to devote himself to one division of the specialty of obstetrics and gynecology is lost sight of and there is a wild scramble for a short cut to fame and fortune, usually through the dexterous handling of the scalpel.

TRAINING OF THE SPECIALIST IN OBSTETRICS AND GYNECOLOGY

Obviously there are two ways of becoming a specialist in obstetrics and gynecology—one by way of practice, the gradual elimination of all medical work except in the field the practitioner is especially qualified for and interested in, the other by way of the large medical school and hospital clinics in obstetrics and gynecology. Many eminent obstetric and gynecologic specialists have achieved distinction through the first route. Financial necessities and lack of opportunity will always compel certain members of the profession to adopt the practice route toward specialism. In fact, if the narrow training in some of the hospital clinics is continued, probably better specialists in obstetrics and gynecology would be produced through the practice than the hospital route, owing to the general broad training which must result from the work of a studious, conscientious and capable general practitioner during the time he is preparing to specialize. Handicapped by the necessity of earning a

livelihood while trying to perfect himself in his specialty, such a man, however, is always open to the temptation of choosing the path of least resistance, the surgical end of a specialty to the neglect of the ground work which, it is maintained, is absolutely essential to specialization in any field. Overwhelmed, buried by routine surgical work in a comparatively small field, he either remains content with a large income, or else satisfies his discontent by enlarging his surgical field and joining that large and it must be confessed ever enlarging company, men who started out to be obstetricians and gynecologists but ended in being general surgeons with a fondness for gynecology.

If there be a future for obstetrics and gynecology it must come, I believe, from the departments in the medical schools and from hospital clinics organized and maintained on the right basis. If the two divisions of the specialty be united it will flourish and be of immense benefit to womankind and future generations. If the two divisions of the specialty be separated in teaching institutions and in hospital clinics, in a generation or two at the farthest there will be no specialty of obstetrics and gynecology, nor will there be specialists in either of the two divisions. Obstetricians will cease to exist because the brightest of the rising medical generation will refuse to enter a specialty in which they are known as man midwives, where the work is of the hardest and the compensation very unsatisfactory. The surgically inclined bright young medical graduates of the future will certainly not choose gynecology as a specialty—why should they when they can be enrolled in a department of general surgery and become trained general surgeons of all parts of the human body?

It is time that the medical schools recognize the manner in which the obstetric teaching clinic has been neglected in the past, and take steps to see that such conditions are remedied. The obstetric teaching material must always be a great expense to an institution, for it is almost entirely composed of so-called charity cases. Women unable to meet the expenses of confinement seek the services of the indoor or outdoor departments of the obstetric clinic attached to a teaching institution because they have confidence that they will be well cared for. In order to avoid the great expense of providing adequate hospital teaching material for senior medical students, we see even today the continuance of the outpatient obstetric department where the student cares for the lying-in woman in her home, sometimes under, but more often without, competent supervision. Why this survival of a most time-wasting and illogical method of instruction in this particular branch of medicine? The explanation usually offered that the student by this method is taught under conditions he will have to meet when he begins practice does not explain why such a system is not in vogue in other teaching departments. Why not teach surgery and general medicine in the tenements? Surely the practitioner will not always be able to send his medical and surgical patients to a hospital, and must perforce treat fractures or pneumonia at the patients' homes. The true reason is that it is cheaper to build up an outpatient obstetric clinic with its wasteful and oftentimes poorly supervised teaching than to meet the expense of an adequate hospital inpatient clinic.

Almost any teacher of obstetrics will acknowledge that he prefers to instruct with hospital patients; but, he adds, for certain reasons the number of hospital obstetric beds at his command is not large, and hence

he utilizes the outpatient obstetric clinic to make up the deficiency. Would the heads of the departments of medicine or surgery take the same attitude? If their departmental teaching material were inadequate would they arrange for groups of students to be taught in the tenements? I think not. They would send forth a cry from the house tops about the shocking dearth of material until the governing body of the school or some benevolent gentleman or foundation provided for their teaching needs.

Why then the meek and lowly obstetrician? Is it true that he merits the gibe thrown at him by a gynecologist in a recent presidential address, who makes use of this remarkable sentence: "I may be wrong, but I have always maintained that a practitioner of medicine who is temperamentally fitted for the practice of obstetrics is entirely unfit to practice selected surgery or gynecology"? This is more than a gibe; it is a challenge. It says in substance to the obstetrician that he is a man infinitely inferior to the gynecologist. To be sure, he has certain bovine qualities fitting him to sit patiently by the bedside until a woman has had her baby; but perish the thought that he is in the same class with the brilliant, dashing gynecologist with his God-given surgical abilities. To make doubly sure that the obstetrician will keep his ladylike hands off the surgical side of the specialty of obstetrics and gynecology, the same essayist advocates that "the teacher of gynecology in cooperation with the psychiatrist of our medical schools should aid in selecting and directing men because of special fitness to the pursuit of this or any other important specialty." There are certain merits to this suggestion for, if during the course of this remarkable mental test these two collaborators, the gynecologist and psychiatrist, by any chance were to run across an applicant who had ambition to become an expert in everything, physical and functional, pertaining to the genital tract of women, it would be comparatively easy to have such a person become either a temporary or a permanent occupant of the psychiatric clinic.

The truth of the matter is that the obstetrician without adequate training in gynecology is handicapped as much as but no more than is the gynecologist without obstetric training. Both are unfinished products, and neither can afford to reproach or insult the other. Their deficiencies cannot be made good by adding diseases of children or abdominal surgery to their respective fields of labor.

As a matter of fact, the future of the specialty of obstetrics and gynecology depends on the policy of the medical schools toward the specialty in the next decade. They must face the issue now in order to provide for the future. If adequate funds and facilities are provided for departments of obstetrics and gynecology, and the two divisions combined under one head, the specialty will flourish; the subjects will be well taught, and high grade research work will be turned out. If, on the other hand, the policy of selecting separate heads for obstetrics and gynecology prevails, the reverse will take place. Obstetrics will languish because opportunities will not be afforded the department to consider and treat the results of obstetric complications and errors. Gynecology, separated from obstetrics, will tend to become more and more a surgical specialty, for reasons already set forth, and there will be no legitimate excuse for not making it a part of general surgery. Clinging with desperate grasp to abdominal surgery will not save it, for the

general surgeon is or should be a master of that part of surgery. Inevitably the chairs of gynecology will disappear, possibly weakly nourished for a while under titles such as professor of clinical gynecology, but eventually they will be absorbed by general surgery. Vain will be the appeals to avert the inevitable. Talk about research in gynecologic fields or superior work of the gynecologist as compared with the general surgeon will fall on deaf ears. United with obstetrics, gynecology will survive; separated, it will gradually cease to exist.

Time does not permit, nor is this the occasion to take up in detail the organization of the ideal department of obstetrics and gynecology. It remains to consider only one feature of such a department, since the future of the specialty under consideration will depend on how well this part is provided for. I refer to the opportunities that will be furnished young graduates to spend five or more years in equipping themselves for their special work. No matter what may be the permanent personnel of the department, it is essential for the future of the specialty that a way be provided for the thorough training of these young men in obstetrics and gynecology. It goes without saying that they should be recompensed enough for their hospital and teaching work to keep them free from financial worries. Their hospital service should be so arranged and graded that they will be as much at home in obstetrics as in gynecology, and vice versa. In fact, the two divisions should be treated as one subject, the patients on whom the studies are being conducted being in different groups for hospital administrative purposes only.

It is comparatively easy under such a system to see that the surgical side of the specialty is not over-emphasized. While in five years the assistant naturally becomes a trained obstetric and gynecologic surgeon, it is possible during this time to interest his eager young mind in other than mechanical problems. While he will be interested in surgery, he will recognize its limitations and be equally if not more interested in problems that will make surgery less and less necessary.

With a man so trained it makes no difference, if he goes into practice, instead of continuing his academic career, whether he decides to be a specialist in obstetrics and gynecology, or chooses to devote his time to one division of his specialty. One need not worry about the hardships of being up all night with a confinement case and then being obliged to do difficult hysterectomies the next day. These are details for each man to work out. So far as the future of obstetrics and gynecology is concerned, I myself am interested only in seeing that he keeps the faith and finds enough in his specialty to interest him so that he will do his regular work well and add a little something to the sum of human knowledge. Well grounded in obstetrics and gynecology, the specialty of his selection, I know that he will be interested in everything connected with it, and that, being interested, he will not be chasing after "the false gods" who seem to trouble some people so much.

RELATION OF ABDOMINAL SURGERY TO OBSTETRICS AND GYNECOLOGY

Finally, what about the relation of abdominal surgery to obstetrics and gynecology? If the preceding argument be correct, why is it necessary or even wise to include papers on abdominal in contrast to pelvic sur-

gery in the work of this section? The wisdom of such a course is at once apparent if it be borne in mind that the trained obstetric and gynecologic surgeon must be versed in abdominal as well as pelvic surgery in order to be competent to meet the emergencies which will arise in his special surgical work. While making no claims for specialization in abdominal surgery, the obstetric and gynecologic specialist must be prepared at any moment to resect the intestine and care for the appendix and gallbladder, if such surgery be demanded when the abdomen is opened for pelvic disease. This is only justice to the patient, and is common sense as well.

In order to be competent in surgical work of this description the obstetrician and gynecologist must not only have had the necessary technical experience but must be conversant with the literature and the constant improvements taking place in abdominal surgery. Hence it is fitting and a wise practice to include papers on this allied field of surgery in the work of the section.

Actual experience and technical skill in abdominal as contrasted with obstetric and gynecologic surgery should be acquired in departmental hospital clinics by cooperation with the general surgical clinics. Arrangements can easily be made for interchange of services at some period of the training, to the mutual benefit of the members of both the obstetric and gynecologic and general surgical staffs. In fact, this principle of free interchange of services should not be confined to surgery alone, but should apply to all departments of the hospital, where such an arrangement will make for better training in obstetrics and gynecology.

RECENT STATISTICS OF HEART DISEASE

WITH SPECIAL REFERENCE TO ITS INCREASING INCIDENCE *

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The statistics of heart disease are probably the least satisfactory of medical statistics because of the apparent impossibility of a precise and inclusive definition. No disease better emphasizes the principles and suggestions laid down by the late Dr. Charles A. Mercier, on the subject of causation, with special reference to causes of death. Mercier's work on "Causation and Belief" should be read by all who desire to do full justice to controversial questions in medicine concerning the so-called causes of disease or death, or the conditioning circumstances affecting the results of treatment. As observed by Mercier: "The cause of death is always a function of two variables—the power acting to maintain the unchange that we call life, and the action or actions that increase the work that the power has to do." He refers to a definition adopted by the registrar general, observing: "The fatal manifestation of a disease is, I surmise, what the registrar general means by a terminal condition or mode of death; but as he gives no indication whatever as to what he does mean, this can be no more than a surmise. In

such cases the disease may appropriately be called the principal cause of death, and the manifestation the precipitating or subordinate cause of death."

If so acute a mind as Mercier's could not arrive at a clear understanding of the terminology of disease, it is certainly a hopeless task for an average mind to attempt what seemingly defies analysis; but as a practical question it may safely be asserted that the ordinary definitions meet all reasonable requirements and that our vital statistics are approximately trustworthy except so far as modified by important and possibly far-reaching changes in the practice of classification. To no disease perhaps does this conclusion apply more than to heart disease, which, of course, is not a specific term but rather one which has simply the sanction of long continued use. In the earlier statistical reports, sudden death, for illustration, is of frequent occurrence, but is relatively rare in modern mortality investigations. As has been said by Dr. Theodore Fisher, "When we speak of sudden death, both medical men and those without medical training generally think at once of the heart"; but this by no means justifies the classification of a sudden death as being attributable, without the chance of error, to a diseased condition of the heart. There is no more illuminating discussion of sudden deaths than the treatise by Brouardel, whose masterly analysis brings out the fact that sudden deaths due to lesions of the circulatory system are by no means the only important causes or conditioning circumstances. He directs attention, for illustration, to lesions of the respiratory system, modifications of vascular tension, lesions of the digestive system and of the female genital organs, sudden death in fevers and in diabetes, diseases of the kidneys and alcoholism.

What is true of sudden death is even more true of dropsy and old age. These earlier terms, common in the practice of medicine fifty years ago, are now practically obsolete, it being clearly recognized that dropsy, for illustration, is a symptom and not a disease within the strict definition of the term. It is therefore grotesquely erroneous to compare the mortality from heart disease in modern registration reports with the returns of a generation ago, without the required correction, which frequently cannot be made for want of access to the original material. These remarks at the outset emphasize the urgency of extreme caution necessary in discussions of the changes in the incidence of diseases of the heart and circulatory system frequently bordering on the ridiculous and the grotesque. Before much progress can be made in scientific discussions of so-called heart disease, much further research in clinical medicine is imperatively called for.

No one has more clearly recognized this need than Sir James Mackenzie, perhaps the foremost authority on heart affections, and now the director of the Institute of Clinical Research of St. Andrews' University, Scotland. In his opening address, Sir James took occasion to lay it down as a first principle that, "as disease is made manifest to us only by the symptoms it produces, it is imperative that the first step should be to understand the nature and significance of symptoms." Calling attention to the vast amount of superficial and frequently thoroughly inaccurate information, he refers to the question of heart murmurs as evidence of heart impairment, although "the knowledge of how to assess the value of murmurs is lacking." Referring also to the practice of life insurance examinations for the purpose of ascertaining heart impairments, he remarks that life insurance examiners, whose duty it is to assess the

* Read before the Association of Cardiac Clinics at the New York Academy of Medicine, New York, Feb. 26, 1920.

value of symptoms, have not yet awakened to the fact that the methods employed are but a species of guess-work, and that they have not yet realized that accurate knowledge of this kind is absolutely necessary to the progress of medicine. Or, regarding the work of the ordinary doctor, who, he points out, "should not only be able to recognize the signs of disease, but able to say how much work a man with a given impairment should be able to perform," he comes to the lamentable conclusion that "this is the kind of knowledge which nowhere exists." This address by Sir James Mackenzie,¹ next to the work by Mercier, is one of the most valuable foundations for sane and conservative views on a subject which imperatively demands much more qualified consideration than it has thus far received, on the part both of the medical profession and of the laity.

HEART DISEASE AMONG MEN OF MILITARY AGE

It would obviously carry me entirely too far if I were to enlarge further on the clinical research aspects of heart affections and the problem of possibly profound changes in the relative rate of frequency occurrence during recent years. But I may properly direct attention to the importance of heart disease in childhood and youth, which has been made the subject of an admirable discussion by Dr. Charles W. Chapman, and the even more important question of "disordered action of the heart" (D. A. H.) or "valvular disease of the heart" (V. D. H.), in its relation to military service. The last named subject has been made one of extended inquiries by the Medical Research Committee, which include a brief but important discussion of terminology and an outline of symptoms, with a particular bearing on questions of statistical analysis. This work concludes with the suggestive observation that "the high incidence of the condition amongst men of sedentary occupation, and the frequency with which these men fail during training, call for more tender methods in the initial stages of training the conscript who for years has been accustomed to taking no exercise." This conclusion is applicable to the problem of occupational therapy as much as to the more restricted field of military usefulness. The work emphasizes the practical possibilities of heart disease prevention, and suggests a reconsideration of much of the advice summarized under the title of "What Heart Patients Should Know and Do," by Dr. J. H. Honan.

The relative frequency of heart diseases among men of military age has now been ascertained with reasonable accuracy, just as this has been the case in life insurance experience. In the latter, however, a certain element of selection operates, which is practically absent in military experience under the universal draft. The ratio of heart impairment in the army experience, represented by 85,143 cases, was 26.26 per thousand examined, or not quite 3 per cent. The rate was highest for the state of Washington, or 61.55 per thousand, and lowest for Wyoming, or 13.47 per thousand. It may be questioned whether the draft experience was sufficiently large and based on uniform methods of examination to justify final conclusions regarding the relative incidence of heart disease in different sections of the country.

The foregoing observation refers exclusively to valvular disease of the heart and endocarditis. Cardiac

hypertrophy and cardiac dilatation are represented by an impairment rate of 4.65 per thousand examined, the range having been highest for Nevada, or 10.63, and lowest for Arkansas, or 1.57 per thousand. Myocarditis and myocardial insufficiency caused an impairment rate of 0.72 per thousand, having been highest for Maine, or 16.40, and lowest in the District of Columbia, or 0.17 per thousand.

Combining all forms of organic diseases of the heart, the total rejections on this account were equivalent to 30.74 per thousand examined, the rate having been highest in the state of Washington, or 68.84, followed by Maine, with a rate of 55.70; Utah, with a rate of 54.60; Michigan, with 50.30, and Maryland, with 46.58 per thousand. It would not seem safe to rely on these returns for a true measure of the geographic incidence of heart disease, but the data are suggestive of a further inquiry into the facts. It may be suggested in this connection that much more extended medical consideration should be given to the statistical results of the defects found in drafted men, as presented in a Senate report to the Surgeon-General of the Army by Lieut.-Col. Albert G. Love and Dr. Charles B. Davenport. The conclusions of these officers on the general subject of organic diseases and defects of the heart are given in full as follows:

This group, which includes valvular disease of the heart, cardiac hypertrophy, cardiac dilatation, myocarditis, myocardial insufficiency, and endocarditis, is second in importance only to the great group of mechanical defects. Valvular disease of the heart was recorded in over 88,000 cases, cardiac hypertrophy in 11,389 more, myocarditis in 1,792, and endocarditis in 2,782. Altogether the group contains over 120,000 cases, or about 5 per cent. of the men examined. Of the 120,000 odd cases of organic defects of the heart, a large proportion properly enough was rejected for military service of any sort; namely, 90 per cent. There were, however, accepted for general military service, 2,872 cases of mitral insufficiency and 300 cases of mitral stenosis. One thousand one hundred and fifty cases of mitral insufficiency were placed in the limited-service group. Practically no cases were regarded as "remediable."

Recalling the words of caution of Sir James Mackenzie, it may safely be concluded that qualified ability for heart examinations on the part of many of the physicians employed in the draft examinations was wanting to give to the statistical results a full measure of scientific finality; but in a general way they may be relied on as sufficient for the purpose of emphasizing the important conclusion that all forms of heart impairment are not likely to exceed in relative frequency 3 per cent. of the men of military age, or about the same as were rejected on account of pulmonary tuberculosis (29.77 per thousand).

The results of life insurance experience are less applicable to practical requirements on account of the fact (1) that obvious cases of heart impairment do not present themselves for examination, and (2) that, in the words of Sir James Mackenzie, the methods of examination have hardly been sufficiently perfected to justify the rejection of a fair proportion of cases on the basis of mere murmurs, the true nature of which is not understood at the present time. In the experience of the Prudential Insurance Company of America, during the period 1915-1918, the rejections on account of heart impairments have been 24.4 per thousand examined, but the fact must not be overlooked that the practice of different companies varies and that while some are extremely cautious, others are grossly

1. The views of Sir James Mackenzie, in a more convenient form, are set forth in his treatise, "Principles of Diagnosis and Treatment in Heart Affections," London, 1916.

negligent in fully safeguarding their own interests against the ever-present risk of adverse selection.

INVESTIGATION OF THE MEDICO-ACTUARIAL COMMITTEE

An important contribution to the subject is the investigation of the Medico-Actuarial Committee into the mortality of males from organic diseases of the heart, which shows that the rate of mortality increases in insurance experience in about the same manner as

TABLE 1.—MORTALITY RATES, PER TEN THOUSAND EXPOSED TO RISK, FROM ORGANIC DISEASES OF THE HEART *

Policy Years	Ages at Entry					
	Males			Females		
	15-29	30-44	45 and Over	15-29	30-44	45 and Over
1.....	0.7	1.2	5.1	0.9	1.5	7.5
2.....	0.4	1.3	8.6	1.1	2.2	9.6
3-5.....	0.7	3.0	14.1	1.8	3.0	14.0
6-10.....	1.5	3.7	25.4	2.3	3.2	26.1
11-24.....	3.8	9.8	45.9	3.4	9.7	48.1
Total.....	1.4	4.0	19.9	1.7	3.3	19.6

* Medico-actuarial investigation, 1913.

among the public at large. Table 1 exhibits the mortality rates from diseases of the heart per 10,000 exposed to risk, according to the duration of insurance, for the three age periods 15-29, 30-44, and 45 and over.

The medico-actuarial experience is most suggestive as regards the relative incidence of heart diseases at different periods of life for the two sexes. Table 2

TABLE 2.—PERCENTAGE OF DEATHS FROM ORGANIC DISEASES OF THE HEART TO ALL CAUSES *

	Ages at Entry		
	15-29	30-44	45 and Over
Males.....	3.0	5.9	10.6
Females.....	3.3	5.3	10.7

* Medico-actuarial investigation, 1913.

shows the percentage of deaths from organic diseases of the heart in the mortality from all causes, according to age at entry and with distinction of sex.

The table confirms the previous conclusion and at the same time illustrates the practical value of the proportionate mortality figure regardless of its inherent limitations. To make this comparison complete, Table 3 shows the comparative death rates per 10,000 exposed

TABLE 3.—DEATH RATES FROM ORGANIC DISEASES OF THE HEART PER TEN THOUSAND EXPOSED TO RISK *

	Ages at Entry		
	15-29	30-44	45 and Over
Males.....	1.4	4.0	19.9
Females.....	1.7	3.3	19.6

* Medico-actuarial investigation, 1913.

to risk, according to divisional periods of life, with distinction of sex, disclosing practically identical results for both males and females.

STATISTICAL RESULTS OF THE PRESENT INVESTIGATION

Table 4 shows the mortality from different forms of heart disease in the United States registration area during selected years sufficient for the purpose of indicating the trend of the recorded mortality figure. This figure must not be confused with the probable actual mortality, which cannot be ascertained at present with-

out a thoroughly qualified reexamination of original death certificates, to preclude the risk of serious errors in the earlier classifications.

It will be observed that in this table the rate of deaths from pericarditis and acute endocarditis have decreased, and quite materially so. In contrast, all forms of heart disease have increased from 131.9 per hundred thousand of population in 1900 to 169.0 in 1918. Within recent years the practice has become almost uniform for registration officers and others concerned with the tabulation and analysis of causes of death to amplify more or less doubtful death certificates by means of subsequent correspondence with the attending physician. In the case of the Prudential, probably not less than 10,000 letters a year are sent out to correct original errors, which materially changes the

TABLE 4.—MORTALITY FROM HEART DISEASES, U. S. REGISTRATION AREA, 1900-1918

Year	Death Rates per Hundred Thousand of Population				
	All Forms of Heart Disease	Pericarditis	Acute Endocarditis	Organic Heart Disease	Angina Pectoris
1900	131.9	2.6	11.9	111.1	6.4
1905	152.1	1.7	12.5	131.2	6.7
1910	158.8	1.2	8.9	141.5	7.2
1915	165.1	1.1	9.1	147.1	7.7
1916	168.0	1.0	9.3	150.1	7.6
1917	170.9	1.1	8.9	153.1	7.9
1918	169.0	1.1	8.2	152.3	7.4

results of recent years when compared or contrasted with the past. It is regrettable that so much correspondence should be necessary, frequently to the annoyance of the attending physician, who alone is in a position to make out the original death certificate in exact conformity to rules of statistical practice as issued by the Census Office.

Table 5 shows the mortality from heart diseases in the original registration states, or such as constituted the registration area of 1900, being chiefly the states of New England, New York and New Jersey. In these states there has apparently been an increase of 52 per cent. in the mortality from heart diseases; but a large

TABLE 5.—MORTALITY FROM HEART DISEASES IN THE TEN ORIGINAL REGISTRATION STATES

Year	Population	Number of Deaths	Rate per 100,000 of Population	No. Deaths to Every 100 in 1900
1900.....	19,685,989	26,879	136.5	...
1905.....	21,431,243	34,636	161.6	118
1910.....	23,813,784	42,865	180.0	132
1915.....	25,841,353	49,742	192.5	141
1917.....	26,658,060	55,425	207.9	152

proportion, if not the major part of this increase is attributable to changes in death certification and classification, or the correction of death certificates in amplification of the original cause of death.

How far this conclusion affects the returns for a state like Massachusetts, where the subject has received careful consideration for many years, is shown in Table 6, in which separate age periods are considered in detail for quinquennial periods, commencing with 1868 and ending with 1917. This table is extremely suggestive and clearly emphasizes that the larger portion of the actual increase in the combined rate falls on the age period 40 and over, when, of course, heart diseases are relatively more common than at the younger periods of life. No convincing explanation has been forthcoming why the deaths from heart disease at ages 60 and over should have increased from 414.2 per hundred thousand of population to 1,613.5 during a

period of fifty years. There certainly is nothing startling in the textbooks on the subject which would explain this extraordinary increase, if true, as a pathologic phenomenon similar to the considerable increase in the cancer death rate, to which every writer on the subject gives more or less extended attention. The heavy rise in the incidence of heart affections in old age is, therefore, probably much more apparent than real, and in all probability chiefly the result of formerly erroneous methods of death classification and the transference of deaths formerly classified as dropsy, old age, sudden death, etc., to the more specific group of heart affections.

TABLE 6.—MORTALITY FROM HEART DISEASES IN MASSACHUSETTS

Death Rates per Hundred Thousand of Population						
Year	All Ages			Ages Under 5		
	Persons	Males	Females	Persons	Males	Females
1868-72	73.0	78.5	67.9	44.4	50.5	38.3
1873-77	83.1	89.1	77.5	45.8	50.4	41.2
1878-82	104.0	109.2	99.2	45.0	45.7	44.2
1883-87	126.4	130.6	122.5	62.7	65.5	59.8
1888-92	159.8	166.0	154.0	65.7	98.3	75.0
1893-97	156.4	162.5	150.6	77.4	86.8	67.8
1898-02	158.2	165.5	151.4	72.5	81.6	63.2
1903-07	191.7	201.5	182.3	69.5	79.6	59.2
1908-12	184.5	187.5	181.6	41.7	43.5	39.8
1913-17	215.1	218.5	211.8	32.8	34.3	31.3

Year	Ages 5-9			Ages 10-19		
	Persons	Males	Females	Persons	Males	Females
1868-72	14.0	11.6	16.5	22.2	18.9	25.4
1873-77	16.4	13.5	19.4	24.2	23.6	24.8
1878-82	23.3	22.9	23.6	25.0	24.4	25.6
1883-87	28.1	28.8	27.4	31.5	27.2	35.7
1888-92	31.5	28.2	34.9	37.2	36.4	37.9
1893-97	22.8	19.5	26.0	33.1	32.6	33.6
1898-02	20.5	19.4	21.7	26.9	25.1	28.7
1903-07	27.0	23.1	30.9	32.9	31.3	34.4
1908-12	26.7	23.7	29.8	32.5	28.7	36.3
1913-17	29.9	29.6	30.2	36.8	33.8	39.8

Year	Ages 20-39			Ages 40-59		
	Persons	Males	Females	Persons	Males	Females
1868-72	37.5	35.9	38.9	95.8	98.6	93.0
1873-77	41.6	40.0	43.1	110.6	115.0	106.4
1878-82	44.3	41.8	46.6	130.1	137.2	123.5
1883-87	47.0	44.5	49.3	162.4	159.4	165.2
1888-92	59.0	54.7	63.1	206.2	165.5	196.7
1893-97	52.5	50.2	54.6	200.0	209.3	191.3
1898-02	49.1	47.9	50.3	197.8	207.5	188.4
1903-07	55.1	54.3	55.9	239.9	259.2	221.3
1908-12	50.8	49.4	52.2	218.9	238.1	200.2
1913-17	56.6	55.8	57.4	256.3	283.2	230.3

Year	Ages 60 and Over			Ages 40 and Over		
	Persons	Males	Females	Persons	Males	Females
1868-72	414.2	510.0	333.2	187.7	210.7	166.0
1873-77	467.5	563.3	386.3	215.6	241.4	191.9
1878-82	622.0	712.4	545.5	278.3	305.1	254.3
1883-87	746.6	863.8	648.1	340.5	367.3	316.0
1888-92	970.3	1086.8	853.9	434.6	471.2	401.8
1893-97	1015.2	1157.6	898.9	442.7	477.7	411.3
1898-02	1091.5	1255.5	958.8	458.5	494.4	425.8
1903-07	1313.8	1511.6	1155.6	550.5	596.8	508.4
1908-12	1354.2	1487.8	1246.6	536.9	562.0	511.6
1913-17	1613.5	1750.2	1503.8	624.9	653.2	598.8

It may be useful to consider briefly here the relative incidence of different diseases, chiefly in adult life, and Table 7 presents the proportionate mortality from different causes, proving conclusively that, without reference to sex, heart diseases as a group are the most important affections, constituting 18.8 per cent. of the mortality from all causes at ages 40 and over. It is not conveniently possible to give this information by sex; but if the analysis were limited to females, cancer would occupy a much more important, if not a leading position in the relative standing of the different diseases.

Equally important is the fact brought out by the table that heart diseases at ages 40 and over constitute 85.8 per cent. of the mortality from heart dis-

eases at all ages; in other words, the disease is largely one of well advanced adult life. In this respect, however, cancer is even more important, for the mortality from malignant disease is 91 per cent. at ages 40 and over, of the mortality from this disease at all ages. In contrast, the proportion is only 37.7 per cent. for pulmonary tuberculosis, and 58 per cent. for lobar pneumonia.

It will also be convenient to compare the mortality rates for different years since 1900, and for different

TABLE 7.—DEATHS IN THE U. S. REGISTRATION AREA DURING 1917

	All Ages		Ages 40 and Over		Per Cent. of All Ages
	Number	Per Cent. of All Causes	Number	Per Cent. of All Causes	
All causes.....	1,066,711	100.0	586,323	100.0	55.0
Pulmonary tuberculosis.....	93,290	8.7	35,151	6.0	37.7
Cancer.....	61,429	5.8	55,929	9.5	91.0
Cerebral hemorrhage and apoplexy.....	62,417	5.9	59,822	10.2	95.8
Heart diseases.....	128,719	12.1	110,406	18.8	85.8
Lobar pneumonia.....	74,517	7.0	43,236	7.4	58.0
Kidney diseases.....	82,657	7.7	70,725	12.1	85.6

causes, and in illustration of the comparative importance which should be attached to the apparent increase in diseases of the heart. Table 8 shows, for illustration, that while there has been a considerable decrease in the mortality from pulmonary tuberculosis, and a practically stationary condition in the mortality from pneumonia and violence, deaths from old age and ill-defined causes have very materially decreased, so much so that in the latter case they have practically become quite negligible. The decrease in the mortality in old age is of particular significance in that there is a strong reason for believing that deaths from this group have been largely transferred to the present group of affec-

TABLE 8.—MORTALITY IN THE TEN ORIGINAL REGISTRATION STATES AT ALL AGES

Death Rates per Hundred Thousand of Population										
Year	All Causes*	Tu-berculosis	Cancer	Apoplexy and Cerebral Softening	Arterial Diseases, Embolism and Thrombosis	Pneumonia	Kidney Diseases	Old Age	Violence	Ill Defined†
1900	17.1	172.8	63.8	76.0	9.3	175.4	91.6	50.1	87.5	16.6
1905	15.8	155.6	73.5	82.9	16.2	148.7	103.1	37.8	103.6	7.9
1910	15.6	140.6	82.8	87.3	30.0	158.6	109.3	25.8	97.0	16.3
1915	14.2	126.1	91.6	92.6	33.3	147.9	114.3	16.6	94.4	2.2
1917	14.9	127.5	94.5	100.5	37.8	164.4	119.7	12.4	108.6	2.5

Number of Deaths to Every 100 in 1900										
1905	92	90	115	109	174	85	113	75	118	48
1910	91	81	130	115	323	90	119	51	111	98
1915	83	73	144	122	358	84	125	33	168	13
1917	87	74	148	132	406	94	131	25	124	15

* Rates per thousand.
† Principally dropsy, heart failure, sudden death, etc.

tions of the heart. The increase in the mortality from apoplexy and cerebral softening is probably a more accurate measure of the increasing intensity in life strain, and more so than the corresponding statistics for arterial diseases, embolism and thrombosis combined for the earlier portions of the periods, although for the last seven years of the period under consideration the rate has only increased from 30 per hundred thousand of population in 1910 to 37.8 in 1917.

The same conclusions apply to kidney diseases, which have increased from 91.6 per hundred thousand of

population in 1900 to 119.7 in 1917; but if the increase is considered only for the last seven years, the change is not of very material importance.

The question may here be raised that where so much doubt is cast on the unquestionable increase in cancer frequency, as measured by a change in the rate of incidence from 63.8 in 1900 to 94.5 per hundred thousand of population in 1917, why the much more startling and certainly extremely doubtful apparent increase in the mortality from heart disease should go unchallenged. The apparent increase in diseases of the kidneys is largely accounted for by the transfer of deaths from dropsy and the urinary and circulatory systems or groups.

Much interest attaches to the relative frequency of heart affections among the white and colored populations on account of disparity in the rates, of which no satisfactory explanation has thus far been forthcoming. For the registration area, 1914-1917, the information is shown in Table 9 that all heart affections, ages 40 and over, cause a rate of 536.2 per hundred thousand for the white population, against 672.4 for the colored. There can be no question, however, that the difference in the racial incidence of heart affections is real and not apparent. Numerous other investigations, including hospital experience, seem to sustain the point of view that the negro is more liable to this group of diseases, particularly to acute endocarditis, than is the white man. Since accurate diagnosis is more difficult in this case than in many other heart affections, it would seem a foregone conclusion that the higher rate of incidence is real, and for all practical

rate for the white race, the mortality from angina pectoris is only 48 per cent. of the corresponding rate for the white population.

Much has been made of the alleged decrease in heart affections in England and on the continent, and the alleged increase in this country. The facts are quite to the contrary, at least as regards England and Wales, to which the present comparison is limited. Table 10

TABLE 10.—MORTALITY IN ENGLAND AND WALES FROM SPECIFIED CAUSES OF DEATH

—Crude Death Rates per Hundred Thousand of Population—									
Year	All Causes*	Cancer	Pulmonary Tuberculosis	Heart Diseases	Apoplexy and Diseases of the Blood Vessels	Pneumonia, All Forms	Nephritis and Bright's Dis.	Violence	Old Age
1900	18.2	82.9	133.3	147.9	87.1	137.4	40.1	62.4	98.3
1905	15.3	88.9	114.6	142.3	83.9	130.5	37.6	57.1	92.8
1910	13.5	96.7	101.5	136.1	88.6	111.0	38.9	52.2	89.0
1915†	15.7	112.1	113.6	172.1	118.0	135.9	45.5	56.4	89.7
1917†	14.4	121.0	122.8	166.6	121.9	114.4	41.9	54.9	88.8

—Number of Deaths to Every 100 in 1900—									
1905	84	107	86	96	96	95	94	92	94
1910	74	117	76	92	102	81	97	84	91
1915	86	135	85	116	135	99	113	90	91
1917	79	146	92	113	140	83	104	88	90

* Rate per thousand.
† Based on civil population only. Years 1915 and 1917 are not strictly comparable with previous years or with United States data.

shows conclusively that heart diseases have apparently increased in England and Wales from 147.9 per hundred thousand of population in 1900 to 172.1 in 1915, the later figures being less useful on account of the effect of the war. Equally suggestive is the apparent increase in deaths from apoplexy and diseases of the blood vessels from 87.1 per hundred thousand in 1900 to 118.0 in 1915. It is to be observed that the decline in the deaths from old age is less marked in England and Wales, although suggestive, being 98.3 per hundred thousand of population in 1900, but only 88.8 in 1917.

International vital statistics require to be used for comparative purposes with extreme caution. Few are in a position to make sure of the comparability of the data without personal inquiry in different countries and personal interviews with registration officials, practicing physicians, teachers of pathology, and the like. There is unquestionably a difference in point of view in the medical practice of America and England which cannot properly be ignored. Such statistics as are available can be relied on only in the most general way; no far-reaching conclusions can be adopted unless based on a painstaking inquiry into the actual facts, and we should not blindly accept mere statistical information, which may or may not be conclusive.

APPLICATION OF FINDINGS TO PRACTICE OF MEDICINE

The subject is entirely too large and too involved to admit of being briefly considered for the practical purpose of rendering substantial aid to the practitioner or the student of clinical medicine. From a life insurance point of view there is hardly a more important group of affections than diseases of the heart, than which probably no other is more typical of what is summed up in the term "adverse selection." As emphasized, however, by Sir James Mackenzie, we are very far indeed from having attained to a position in which the medical judgment, arrived at as the result of even the most thorough examination, can be relied on with absolute certainty in a considerable proportion

TABLE 9.—MORTALITY IN THE REGISTRATION AREA, 1914-1917, BY RACE AND AGE

Death Rates per Hundred Thousand of Population						
All Ages						
All Races			White			
Persons	Males	Females	Persons	Males	Females	
Pericarditis.....	1.1	1.2	1.0	1.1	1.1	1.0
Acute endocarditis.....	9.1	9.4	8.8	8.8	9.2	8.4
Organic heart diseases...	148.4	152.1	144.5	146.8	150.2	143.3
Angina pectoris.....	7.6	9.4	5.7	7.9	9.8	5.8
Total.....	166.2	172.1	160.0	164.6	170.3	158.5
Ages 40 and Over						
Pericarditis.....	2.9	3.2	2.6	2.8	3.1	2.5
Acute endocarditis.....	19.6	21.0	18.2	18.7	20.3	17.0
Organic heart diseases...	493.7	501.9	484.9	486.4	494.9	477.2
Angina pectoris.....	27.5	33.8	20.6	28.3	35.0	21.0
Total.....	543.7	559.9	526.3	536.2	553.3	517.7
All Ages						
Colored			Number of Colored Deaths to Every 100 White Deaths			
Pericarditis.....	2.1	2.2	1.9	191	200	190
Acute endocarditis.....	12.8	12.5	13.1	145	136	156
Organic heart diseases...	169.7	178.0	161.3	116	119	113
Angina pectoris.....	3.7	3.8	3.7	47	39	64
Total.....	188.3	196.5	180.0	114	115	114
Ages 40 and Over						
Pericarditis.....	5.8	6.2	5.4	207	200	216
Acute endocarditis.....	34.4	32.0	37.1	184	158	218
Organic heart diseases...	618.7	618.1	619.4	127	125	130
Angina pectoris.....	13.5	12.6	14.6	48	36	70
Total.....	672.4	668.9	676.5	125	121	131

purposes a racial trait not explained on account of our present ignorance of the almost unexplored field of race pathology. The very much higher rate of incidence from angina pectoris in the case of the white population is also very suggestive, and is not explained by the possibility of erroneous diagnosis or death classification; for the rate for the white population is 28.3 per hundred thousand population at ages 40 and over, against only 13.5 for the colored. In other words, while the mortality from pericarditis is 107 per cent., in the case of the colored race, in excess of the normal

of borderland cases. Such attempts as have been made to reduce the experience which has been had to a statistical basis indicate, however, the far-reaching possibilities of really qualified research. The medico-actuarial mortality investigation, for illustration, considered the effect of an irregular pulse, of an intermittent pulse, of a pulse rate of from 90 to 100, and of a pulse rate over 100, on the subsequent expectation of life, with results which may safely be accepted at least as approximately conclusive, although the experience was not sufficiently large to be considered as final.

In the case of applicants with an irregular pulse, the ratio of actual to expected deaths was 95 per cent., but in this connection it is said in the report that:

The low mortality is probably due to the inclusion of many cases where an irregular pulse was found on only one out of two or more examinations. Several of the companies whose experience comprised the largest part of the data were asked to investigate their cases, and it was found that the number with a persistently irregular pulse was small, the abnormality having been found in the first, but not in subsequent examinations. The committee was shown the experience of a company on a group of risks with persistently irregular or intermittent pulse, insured on substandard plans. There were about 120 deaths and the mortality was more than 50 per cent. in excess of the normal. The experience did not show separately the results of irregular pulse and intermittent pulse. Cases in which either of these conditions was found in only one out of two or more examinations were not included.

In further explanation, it is pointed out that in this class "there were undoubtedly many cases in which the condition was merely temporary, due frequently to excitement under examination; while in the substandard group of the company whose experience has been mentioned, the condition was apparently permanent." It is therefore made clear that the statistical results of the investigation cannot be relied on as entirely conclusive, for it is pointed out that the death rate from heart disease in the group considered "was distinctly heavier than the normal." Among applicants with an intermittent pulse at the time of entry into insurance, the ratio of actual to expected deaths was 113 per cent. It is explained in the report that the previous comments apply to this class also, an investigation having shown that in the great majority of cases the intermittent pulse was found on only one out of several examinations.

The death rate from heart diseases in this group was, however, "markedly higher than the normal." It is therefore safe to assume that a persistent irregular and intermittent pulse, determined by precise methods of examination, are symptoms of considerable diagnostic value.

Applicants with a pulse rate of from 90 to 100 experienced a ratio of actual to expected deaths of 172 per cent. In this group the death rate "from heart disease and pneumonia, and especially from tuberculosis of the lungs, was distinctly above the standard." The experience, which is based on 332 deaths, would seem to suggest that a high pulse rate is decidedly more indicative of a physical impairment than an irregular or intermittent pulse.

Applicants with a pulse rate over 100 represent a rather small group of individuals, no doubt on account of the attitude of the companies to reject most of such applicants unconditionally. The ratio of actual to expected mortality among this group was 205 per cent. The explanation concerning the mortality of

this group of causes is, unfortunately, not sufficient for practical purposes. It is one of the lamentable defects of the medico-actuarial mortality investigation that the causes of death, in their relation to impairment, were considered only in a fragmentary manner, and not systematically presented for the larger purposes of clinical medicine.

The foregoing observations are, therefore, suggestive rather than conclusive. I have on more than one occasion suggested the urgency of a dual classification of deaths, known as the Budapest system, which would permit of a more precise judgment than is possible at present. To group the mortality from heart diseases, or the existence of impairments, without reference to secondary causes, frequently classed as primary, must needs lead to much confusion. To classify heart diseases as a group is in itself as misleading as the old classification of "fevers" and the modern classification of "malignant tumors," without reference to the site of the organ affected. Such affections as aneurysm of the valves, atrophy of the heart, displacement of the heart, fibroid disease of the heart, thrombosis or mitral stenosis are all indications of the serious limitations of the present method of a crude classification. Any one familiar with medical nomenclature is aware of the practical difficulties of a trustworthy and strictly comparable classification, even in the easily diagnosed case of valvular disease of the heart complicated by Bright's disease, or pericarditis complicated by some infectious disease of early childhood. There is, therefore, urgent need for an improvement in the statistical treatment of heart affections and in amplification of the death certificate, which should be made to include a few descriptive remarks to facilitate accuracy and uniformity in statistical analysis.

As an illustration of the foregoing, reference may be made to the etiology of pericarditis as presented by Dr. Robert B. Preble² in 1901. Dr. Preble, after pointing out that primary cases of acute pericarditis may clinically occur, although they are extremely rare, states that diseases in which "pericarditis appears as a complication are, in order of their frequency: pneumonia, 34 per cent.; rheumatism, 28.36 per cent.; chronic diffuse nephritis, 11.2 per cent.; tuberculosis, 10 per cent.; sepsis, 4.7 per cent.; aneurysm, 2.6 per cent., and typhoid, 1.7 per cent." He holds that the more extensive the pneumonia the greater the danger of this complication, but at the same time emphasizes the statistical difficulty of exact classification; for the mortality from pneumonia with pericarditis, according to Dr. Preble, is 92.4 per cent. Furthermore, pericarditis appears as a complication of all forms of nephritis, but particularly the chronic diffuse nephritis with contraction.

Reference may also be made here to a valuable paper on the four common types of heart disease, by Dr. Richard C. Cabot,³ in 1914. The discussion is based on an analysis of 600 hospital cases of "failing heart," found to group themselves (1) as rheumatic, (2) nephritic, (3) arteriosclerotic and (4) syphilitic. These four types represent 93 per cent. of the total, the remainder being affected by either goiter or doubtful conditions.

The obvious purpose of all statistical inquiries into the mortality from heart affections is to aid early diag-

2. Preble, R. B.: Etiology of Pericarditis, *J. A. M. A.* 37:1510 (Dec. 7) 1901.

3. Cabot R. C.: The Four Common Types of Heart Disease, *J. A. M. A.* 63:1461 (Oct. 24) 1914.

nosis and disease prevention. Whether or not heart affections are on the increase is quite secondary to the truth, which is not in controversy, that there is an immense mortality from these diseases in comparatively early adult life, which, in the light of modern knowledge, lies unquestionably within the domain of prevention and relief. It has been said in this connection⁴ that "greater accuracy of diagnosis and better statistics will hardly account for the remarkable increase in recent years in the percentage of deaths from heart disorders." The value of a periodic medical examination is therefore urged, and it is said that "the recognition of the signs and symptoms of decompensation seldom fails"; further:

The routine examination of the heart at this stage may show some well marked valvular or other lesion, but there will often be found only such signs as a hasty examination is most apt to overlook. These may be merely a change in the quality of the first sound with a slight increase in cardiac dulness, or there may be associated an irregular pulse volume. Always in this field symptoms should receive equal or greater weight than physical signs.

Finally, the suggestive observation is made, which is fully sustained by every statistical inquiry into the subject, that "it is not the too often impossible *early* diagnosis of cardiac disease which is to be emphasized, but the *earlier* diagnosis."

As I have had occasion to say before, heart affections are of the first importance to life insurance companies. Much progress has been made during recent years which gives the assurance that examinations are made today with a much higher degree of accuracy and thoroughness than in former years. An illustration of the scientific aspects of this question is the recent discussion on "Heart Murmurs—Their Influence on Mortality," by Dr. Oscar H. Rogers and Mr. Arthur Hunter, before the Actuarial Society of America. This paper is an admirable contribution to a very limited literature, which it is hoped will be enlarged by the research work of institutions which recognize the urgency of more qualified consideration. The paper brings out the fact that applicants with mitral regurgitation without hypertrophy experience a mortality ratio of actual to expected deaths of 181 per cent. Among this class, persons underweight experience a mortality of 166 per cent. and persons overweight, of 209 per cent. Applicants affected with mitral regurgitation with hypertrophy experience a ratio of actual to expected mortality of 225 per cent. The importance of hypertrophy is emphasized by selected cases of mitral regurgitation with a history of inflammatory rheumatism, according to which applicants with little or no hypertrophy experience a ratio of actual to expected mortality of 299 per cent., whereas applicants with moderate hypertrophy experience a ratio of actual to expected mortality of 455 per cent.

The group of risks with aortic obstruction was, unfortunately, rather too small for entirely trustworthy conclusions. The ratio of actual to expected deaths among applicants with aortic obstruction without hypertrophy and with minor impairments was 179 per cent. Out of 227 deaths among this class, seventy-three, or 32 per cent., were from heart disease.

Applicants with functional heart murmurs also represent a relatively small group of risks, so that conclusions must be accepted with reserve; but the ratio of

actual to expected deaths in this class was 114 per cent. The foregoing illustrations will serve the purpose of emphasizing the practical value in prognosis of statistical research practically limited to life insurance experience. I cannot do better than to restate the conclusions of Rogers and Hunter, which are deserving of most careful consideration:

Functional heart murmurs, if carefully selected, are insurable among young applicants at standard rates; among applicants over 40 years of age, at rates calculated to provide for a substantial extra mortality.

Mitral regurgitation, if carefully selected, may be insured on terms to provide for a mortality of from 150 to 250 per cent., ratings above 170 to depend on the degree of hypertrophy present in each case.

Aortic obstruction is probably 25 points less favorable than mitral regurgitation.

Hypertrophy of the heart, occurring in connection with heart murmurs, constitutes an additional impairment, and only moderate degrees of hypertrophy are insurable.

Irregular or intermittent pulse increases the hazard of heart murmurs, and if more than slight, the combination results in a very high mortality.

A heart murmur with a history of acute articular rheumatism is a very serious impairment.

COLLATERAL CAUSES OF DEATH

A qualified analysis of the mortality from diseases of the heart should include the collateral or subsidiary causes of death. This is possible only under the so-called Budapest system of dual death classification, which at present is not followed by a single registration department of this country. Some years ago, when I had occasion to discuss this question, I had an analysis made of the male mortality of the Prudential Insurance Company of America for the year 1909, limited, however, to only 2,686 deaths from diseases of the heart precisely registered as such, while in addition there were 1,855 deaths registered as due to other causes in which diseases of the heart were taken note of as a secondary or supplementary cause, disregarded for statistical purposes. There were, therefore, 4,541 deaths in which an impairment of the heart function contributed directly or indirectly to the death of the deceased. If this analysis is extended to all the different registered causes of death, some extremely interesting conclusions can be advanced which must unquestionably be of clinical, or at least prognostic, value. Thus, for illustration, there were 871 deaths from acute nephritis in this experience, of which 222, or 25.5 per cent., were complicated by diseases of the heart. There were 1,945 deaths from Bright's disease, of which 279, or 14.3 per cent., were complicated by heart diseases. In the aggregate ordinary male mortality experience of this company, out of 33,992 deaths, there were 20,547, or 60.4 per cent., without complications, while there were 1,855 deaths, or 5.5 per cent. of the total, complicated by diseases of the heart but in which cases heart disease was not specifically assigned as the immediate cause of death. It is the practice of the Prudential to classify all deaths in which both heart and Bright's diseases are stated on the death certificate under the latter term. It is, therefore, self-evident that unless these facts are taken into account, erroneous conclusions are unavoidable.

CONCLUSION

I may say that of 8,408 deaths of males, 1,811, or 21.5 per cent., were complicated by diseases of the heart; and by specific impairments, 531 cases were

4. The Early Recognition of Heart Disease, J. A. M. A. 66:1025 (April 1) 1916.

complications of valvular disease; 347 cases, of endocarditis; 339 cases, of myocarditis; 215 cases, of organic diseases of the heart not otherwise specified, and 169 cases, of cardiac asthma and dilatation, etc. In the same experience there were 390 deaths from Bright's disease complicated by arterial diseases, principally cerebral apoplexy, from which there were 307 deaths; and arteriosclerosis, from which there were seventy-three deaths.

The foregoing statement must be sufficient for the present purpose to emphasize the extreme importance of a complete collateral analysis of all the causes of death in any discussion of heart impairments, with particular reference to the question of a possible increase in the observed degree of relative frequency. To those who wish to pursue this question further, it may be suggested that the statistics of the Roosevelt Hospital are of particular value in this connection in that they are available for a period of more than twenty years, and so stated as to emphasize the relative importance of complications, or collateral impairments, as the case may be.

ROENTGENOLOGY OF TUBERCULOUS ENTEROCOLITIS *

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The early symptoms of ulcerative tuberculous colitis are not sufficiently characteristic to make possible a definite clinical diagnosis, even in the presence of pulmonary tuberculosis. If any benefit is to come from treatment, it is imperative that the disease be recognized early, and for this recognition the roentgen ray furnishes the most certain means as yet available. A positive and independent roentgen diagnosis of tuberculous colitis is difficult, however, for there are no pathognomonic roentgen signs, as the filling defect and the absence of the normal barium shadow in the cecocolon are signs of any ulcerative lesion. Even the finding of *Bacillus tuberculosis* in the stool is of no value in determining the nature of the lesion in the intestine unless a tuberculous lesion in the lungs or *Bacillus tuberculosis* in the sputum can be excluded. Every patient with indefinite abdominal complaint should, therefore, have a complete roentgenologic and general clinical examination. Tuberculosis has such a predilection for the ileocecal coil that a lesion in this part of the intestine, especially if associated with pulmonary tuberculosis, is most likely tuberculosis. Distal segments of the colon are seldom invaded; the disease almost always involves the proximal portion, especially the small bowel, ileocecal valve, cecum, appendix, and ascending colon (Brunner¹). Necropsies have demonstrated that from 70 to 90 per cent. of persons suffering with advanced pulmonary tuberculosis have tuberculosis of the intestine.

In reviewing the physiology of the colon, the following facts should be kept in mind for a better understanding of the abnormal colon: The cecum and ascending colon form a pouchlike expansion of the proximal part of the large bowel. Their walls are thinnest and therefore weakest, and capable of great distention. The interior depressions of the cecum

correspond with the surface haustra. It is definitely known that food remains in this portion of the colon longer than in any other, and it is thought that this delay is largely due to haustration and antiperistalsis. With these physiologic functions in mind, it is not difficult to understand how their loss by disease explains the emptiness and gap in the physiologic barium shadow seen in ulcerative diseases of the colon. The bowel contents pass with abnormal rapidity, because the normal functions which retard the physiologic progress are absent.

PATHOLOGY OF TUBERCULOSIS OF THE INTESTINE

The pathology of tuberculosis of the intestine may conveniently be divided into three types: (1) nodular; (2) ulcerative, and (3) fibrous.

In the nodular type the lesion is made up of conglomerate tubercles which are principally extraluminal in their earliest stages. The nodules are not infrequently seen alone, apparently unaccompanied by tuberculosis elsewhere; they may rarely be seen in association with chronic ulcerative tuberculous ileocolitis, and in such case may be the sequel of pulmonary tuberculosis. This type can hardly be recognized roentgenologically unless it produces obstruction or encroaches on the lumen of the bowel.

The ulcerative type is frequently associated with the nodular, but in a typical instance ulcerative tuberculous colitis is the primary lesion. However, it is possible for tuberculosis to be associated with it in other parts of the body. This type is evidenced by irregularity of bowel contour in the roentgenogram; in the terminal stages it produces obstruction.

The fibrous or hypertrophic type of tuberculosis is manifested by a marked increase of fibrous connective tissue; the tubercles are discrete and relatively sparse. The large amount of fibrous tissue indicates a marked resistance on the part of the patient. It is the terminal stage of healing tuberculous colitis and pericolicitis. This type gives practically the same roentgen picture as the ulcerative.

TECHNIC OF EXAMINATION

The technic of the examination is not difficult. In fact, it is the same as is used for all other diseases of the intestine. In the Mayo Clinic the enema is ordinarily employed; when necessary, the ingested meal is used; in a few cases both methods may be necessary. The enema is preferable since it demonstrates small irregularities of contour by actually outlining the bowel wall, whereas the ingested meal is so unevenly distributed throughout the normal bowel that its irregularity cannot be distinguished from that due to disease. This is especially true in cases in which there is little involvement. If the enema is employed, the colon is filled under observation up to and including the cecum. If the ingested meal is given, observations with the screen are made at intervals from the sixth to the eighteenth hour. Roentgenograms are made as a matter of record and for study.

ROENTGENOLOGIC SIGNS OF TUBERCULOUS COLITIS

The roentgenologic signs of tuberculous colitis are: (1) filling defects; (2) spastic phenomena, and (3) obstruction.

The first and most important roentgenologic sign of tuberculous ileocecal colitis is the filling defect, which is due to the ravages of the disease plus spastic manifestations. It is best seen during the screen

*From the Section on Roentgenology, Mayo Clinic.

¹ Presented before the Omaha Roentgen Society, March 27, 1920.

1. Brunner, C.: Tuberculose, Aktinomykose, Syphilis des Magen-Darmkanals, Stuttgart, Enke, 1907, p. 399.

examination with the opaque enema. Under pressure of the enema, the cecum and ascending colon are seen to fill irregularly and are decidedly narrowed in their transverse diameter. The normal haustral markings are absent, and Bauhin's valve is usually incompetent. After the pressure of the enema is relieved by shutting off the flow, the involved area usually empties and remains emptied, while the remainder of the colon may retain the enema for some time.

The filling defect and the localized absence of barium shadow in the cecum and ascending colon are not entirely characteristic of tuberculous colitis; I have seen them in ulcerative carcinoma of the cecum and chronic ulcerative colitis. Stierlin² has reported a case of carcinoma in the ileocecal coil with similar findings. Nevertheless, a lesion of the cecum and ascending colon without the physiologic barium shadow should always suggest the possibility of tuberculosis, and tuberculosis should be looked for in other parts of the body, particularly the lungs. If tuberculosis can be definitely demonstrated in the lungs, the lesion of the cecocolon, whether there is an absence of the physiologic barium shadow or not, is most likely tuberculous colitis.

Hypermotility has been emphasized by Brown and Sampson³ as an important roentgenologic sign of tuberculous colitis. The term hypermotility can hardly be applied to this phenomenon because, strictly speaking, hypermotility refers to the passage of bowel contents, at an increased rate, along the entire alimentary canal. Hypermotility in our cases was usually due to diarrhea or achylia, and was of no more value as a diagnostic sign than a six-hour retention in the stomach would be. The gap in the barium shadow, I believe, does not represent hypermotility, but is the effect of diffuse infiltration of the bowel wall which produces rigidity of the part of the intestine affected. It is apparent from this that the physiologic functions of the diseased segment of the colon have been lost and the barium passes through it without hindrance, just as it does through a stomach diffusely infiltrated with cancer. In the absence of diffuse infiltration, spasm stiffens the walls, giving the same motoric effect.

Béclère and Mériel⁴ state that an ulcerated mucosa manifests its irritability by an exaggeration of muscular peristalsis with an abnormally rapid progress of the contents of the intestine. I have never observed this muscular peristalsis, but I have seen marked spasm of the musculature of the colon due to irritability from an ulcerated mucosa, and I am inclined to think that Béclère meant spasm when he said peristalsis. Stierlin is evidently of the same opinion, for in discussing the same subject he mentions no acceleration of motility. Indeed, it has been demonstrated in operations, when the patient is under the influence of narcosis, that this spasmodic condition does exist and its extent is in proportion to the extent of the lesion. For example, if a solitary lesion is present, the spasm is localized and analogous to that seen in gastric ulcer. In this early stage of the disease usually there is no gap in the barium shadow of the ingested meal, but the irregularity of contour due to spasm may be visualized by the opaque enema even if the lesion is not demonstrable.

Stierlin, in 1911, first pointed out the absence of a physiologic barium shadow in the cecum and ascending colon in tuberculosis of the ileocecal coil. Much to his surprise, at a time when normally he expected to show the cecum and ascending colon in the roentgenogram, no shadow was visible; in its advance the shadow seemed to skip the cecum and the ascending colon. In this country Pirie⁵ was the first to notice this phenomenon. By observations at half-hour intervals, continued for from four to twelve hours, he was able to prove that the tuberculous cecum does not retain the barium which normally accumulates there.

Spasm is a manifestation which, to a greater or less degree, accompanies many if not all gastro-intestinal lesions. It is one of the most perplexing conditions with which the roentgenologist has to deal. For instance, lesions so slight as to cause no irregularity of contour demonstrable in the roentgenogram may exhibit marked deformity and narrowing due to spasm. Indeed, the absence of barium from an involved area of the bowel is caused usually by spasm and infiltration of the intestine rather than by hypermotility. This type of spasm is intrinsic in origin and constant in situation; it is present at a second examination and cannot be effaced by antispasmodics.

In our cases, tuberculosis has been more frequent in the small than in the large bowel. The lesions are seen most often in the ileum and the jejunum, but the latter is less frequently affected. They occur in the bowel anywhere from a few inches to 1 foot or more apart and usually become confluent near the ileocecal valve. The affected areas are not more than one-half to three-quarters inch in width. They are slightly elevated, may or may not be studded with tubercles, and involve the entire circumference of the intestine. Palpation of the areas reveals the presence of ulcers in the mucosa.

The roentgen diagnosis of tuberculous enteritis is less certain than that of tuberculous colitis. This is probably due to the physiologic and anatomic difference between the small and the large intestine. The obstruction which is occasionally noted is not characteristic, for it is observed in other pathologic conditions. However, I have observed another sign which may have diagnostic value, namely, delay with irregular filling and segmentation of the small bowel; but further study will be necessary to establish this fact.

SUMMARY

A lesion roentgenologically demonstrated in the ileocecal coil, with irregularity of bowel contour and without the physiologic barium shadow in the cecocolon, although it may represent any ulcerative process, is probably tuberculous if pulmonary tuberculosis is present.

The tuberculous lesions may be nodular, ulcerative or fibrous. They are usually associated to a greater or less extent, dependent on the stage of the disease. The nodular type is recognized by means of the roentgen ray only if it encroaches on the lumen of the bowel, and the ulcerative and fibrous types by irregularity of contour, and in the terminal stages by obstruction.

The presence of spasm must not be overlooked, since it often causes irregularity of contour and is diagnostic even when the lesion itself is not demonstrable.

2. Stierlin, E.: Die Radiographie in der Diagnostik der Ileozökal-tuberculose und anderer Krankheiten des Dickdarms, München, med. Wehnschr. 58: 1231-1235, 1911.

3. Brown Lawrason, and Sampson, H. L.: The Early Roentgen Diagnosis of Ulcerative Tuberculous Colitis, J. A. M. A. 73: 77-85 (July 12) 1919.

4. Béclère and Mériel: L'exploration radiologique dans les affections chirurgicales de l'estomac et de l'intestin, Rapport 25, Congrès français de Chirurgie, Paris, 1912, p. 103.

5. Pirie, H., quoted by Archibald, E.: The Rôle of Surgery in the Treatment of Intestinal Tuberculosis, National Association for the Study and Prevention of Tuberculosis, 1917, pp. 117-134.

The opaque enema generally is preferable to the ingested meal in demonstrating the filling defect and pasty phenomena which are roentgenologic signs of tuberculous colitis. A gap in the physiologic barium shadow of the cecocolon in the more advanced cases is demonstrated by the ingested meal, but unquestionably the disease will be demonstrated earlier by the enema.

THE DIAGNOSIS OF EPIDEMIC ENCEPHALITIS

VALUE OF NASOPHARYNGEAL WASHINGS AND OF CEREBROSPINAL FLUIDS *

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During the course of investigations carried on within the past year, Strauss, Hirshfeld and Loewe,¹ and Loewe, Hirshfeld and Strauss² established the fact that epidemic encephalitis was due to a filtrable virus. The successful cultivation of this filtrable virus was reported by us.³ The experimental work embodied in these reports demonstrated the close relationship of the virus and the micro-organism to the nasopharynx. Berkefeld filtrates of nasopharyngeal mucous membrane from fatal cases of epidemic encephalitis, and cultures of these filtrates when injected intracranially into monkeys and rabbits, produced the typical clinical and pathologic pictures of the disease. In view of these findings we were led to investigate, by animal inoculation and cultural studies, the nasopharyngeal washings and the cerebrospinal fluids of patients suffering from epidemic encephalitis. In this communication we desire to report our results and to point out their value in diagnosis.

Material from the nasopharynx was obtained by means of nasal irrigation with physiologic sodium chlorid solution, pharyngeal swabs, or the West tube. We have never seen any ill effects from any of these procedures. Nasal washings were filtered directly, unless the presence of an excessive amount of mucus made it necessary to shake the washings with glass beads. For the most part pharyngeal swabs were used, the swabs being carried as high up in the nasopharynx as possible and strong pressure exerted. The pharyngeal swabs were washed in several changes of saline solution, small quantities being used in order to procure a maximum concentration. The slightly turbid fluid so obtained was then filtered. In one case the thick, tenacious, mucopurulent nasal discharge was finely emulsified by grinding in a mortar with sand and physiologic sodium chlorid solution and then submitted to filtration. The filters used in the work were the standard 5 N or W. Berkefeld or Mandler filters, which we had found perfectly satisfactory as regards their ability to hold back the usual test organisms. All filtrates before being used were cultivated on ordinary laboratory mediums to insure sterility.

Our first nasal washing was injected intracerebrally into a *Macacus rhesus* monkey. Subsequently we con-

finied our work to the intracranial inoculations in rabbits and to cultivating in kidney tissue-ascitic fluid medium. From two to four medium or full-sized rabbits were thus inoculated intracranially with each filtrate:

The hair over the left half of the skull was first removed and iodine applied. The head was steadied with the left hand, the body and legs being held by the assistant. With experience, it was possible to dispense with the aid of the assistant. The skull of a rabbit is so thin in certain areas that it can be pierced without trephining. With the exertion of moderate pressure and with a boring movement, the needle with stylet in place was inserted perpendicularly to the lateral surface of the skull at a point 0.5 cm. behind and on a level with the upper margin of the orbit. Three c.c. hypodermic syringes with small bevel, so-called deep injection, needles of from 18 to 20 gage were found best adapted for this work. Throughout the entire procedure, strict asepsis was observed. The amount of filtrate varied; as a rule no difficulty was experienced in injecting 1 c.c., if done slowly.

Rabbits that succumbed were examined postmortem, an attempt being made to remove the brain in sterile fashion. Blocks of brain were taken in sterile physiologic sodium chlorid solution and in 50 per cent. glycerin for cultural study. The remainder of the brain was placed in 10 per cent. dilution of liquor formaldehydi for section. The sections were embedded in paraffin and stained with hematoxylin and eosin.

Cultural studies were carried out with the original filtrates and with the brains of animals injected with these filtrates. Filtrates of brains were mainly used, owing to the difficulty of obtaining the brains uncontaminated. All filtrates were inoculated in amounts of from 0.25 to 0.5 c.c. into a series of tubes containing the ascitic fluid-kidney tissue medium. The tubes were sealed with petrolatum to establish a more perfect anaerobiosis, and were then incubated at 37 C. The positive growths were evident in from five to seven days. In a few instances, rabbits were injected intracranially with these cultures to establish their virulence.

Cerebrospinal fluids removed from patients under sterile precautions were similarly subjected to culture and animal inoculation. The fluids were cultivated in amounts from 0.5 to 1 c.c. The larger amount, when injected intracranially into rabbits, proved to be too toxic, the animals succumbing rapidly without definite pathologic lesions being present. When the dose was reduced, the more typical pathologic lesions were produced. Several times, in order to determine their pathogenicity, the organisms isolated from the spinal fluids, and those recovered from the brains of the animals examined postmortem were reinoculated into animals.

RESULTS

Two c.c. of a filtrate of the nasopharyngeal washings, containing thick mucopurulent discharge, from an epidemic encephalitis patient, were injected subdurally into a *Macacus rhesus* monkey. One week later the animal developed apathy, elevation of temperature, and paresis of both hind extremities. This condition persisted for eight days and then gradually disappeared. Lumbar puncture on the sixth day of the illness revealed clear fluid under increased pressure. There were 16 cells per cubic millimeter, mostly lymphocytes.

The nasopharyngeal washings from fourteen other patients with epidemic encephalitis were injected into a

* From the Pathological Laboratory of the Mount Sinai Hospital.

1. Strauss, Hirshfeld and Loewe: New York M. J. **109**: 772 (May 3) 1919.

2. Loewe, Hirshfeld and Strauss: J. Infect. Dis. **25**: 378-383 (Nov.) 1919.

3. Loewe, Leo, and Strauss, Israel: Etiology of Epidemic (Lethargic) Encephalitis, J. A. M. A. **73**: 1056 (Oct. 4) 1919.

total of thirty rabbits. Twenty-five of these animals were examined postmortem, fourteen showing the characteristic lesions to a greater or lesser extent. The lesions consisted of meningitis with round cell infiltration, perivascular and adventitial infiltration with mononuclear cells, focal infiltration with round cells, punctate hemorrhages and edema. These lesions were present singly, but most often combined. It required from one to fifteen days for the animals to succumb. Nine of the fourteen rabbits showing lesions were dead within four days. The short period usually

discharged cured. In another case, Dr. Emanuel Libman made a diagnosis of encephalitis lethargica in a woman who was supposed to be suffering from toxemia of pregnancy, for which a therapeutic abortion had been performed. Washings from the nasopharynx were submitted to us for animal inoculation. Two animals injected with the filtrate of these washings died, one in twenty-four hours, and the other in four days. Microscopic examination of these brains demonstrated the characteristic lesions in both. The woman made a good recovery.

TABLE 1.—RESULTS WITH NASOPHARYNGEAL WASHINGS (BERKEFELD FILTRATES)*

No.	Case	Culture	Animal Inoculations (Rabbits)					Original Organisms					Diagnosis Established by—	
			No. Inoc.	No. P. M.	No. with Lesions	Time Days	Org. Rec.	No. Inoc.	No. P. M.	No. with Lesions	Time Days	Org. Rec.	Culture	An. Inoc.
1	Lea.....	Pos.	2	2	1	4	Yes	..	..	..	..	....	Yes	Yes
2	Tob.....	Pos.	2	2	2	1,4	Yes	2	1	1	8	Yes	Yes	Yes
3	Wein.....	Neg.	2	1	0	..	No	..	..	..	..	....	No	No
4	Bit.....	Pos.	2	2	2	8,15	Yes	..	..	..	..	....	Yes	Yes
5	M. S.....	Pos.	2	2	1	6	No	..	..	..	..	....	Yes	Yes
6	P. S.....	Pos.	2	2	2	1,1	Yes	..	..	..	..	....	Yes	Yes
7	G-h.....	Neg.	2	2	1	7	No	..	..	..	..	....	No	Yes
8	Eis.....	Pos.	2	2	1	2	Yes	2	2	2	7,12	Yes	Yes	Yes
9	Spar.....	Pos.	2	2	1	3	Yes	..	..	..	..	....	Yes	Yes
10	Sklo.....	Neg.	2	1	1	5	Yes	..	..	..	..	....	No	Yes
11	G-g.....	Neg.	2	2	0	..	No	..	..	..	..	....	No	No
12	Shuz.....	Pos.	2	1	1	2	No	..	..	..	..	....	Yes	Yes
13	G-n.....	Neg.	2	1	1	4	No	..	..	..	..	....	No	Yes
14	M-t.....	Neg.	4	4	0	..	No	..	..	..	..	....	No	No
15	Mach.....	Pos.	..	..	..	..	....	..	..	..	..	....	Yes	....
16	G-z.....	Pos.	..	..	..	..	....	..	..	..	..	....	Yes	....
17	W-h.....	Pos.	..	..	..	..	....	..	..	..	..	....	Yes	....
Total.....		Pos. 11	30	26	14	..	Pos. 7	4	3	3	..	Pos. 2	Pos. 11	Pos. 11

* Explanation of abbreviations in this table and Table 2: No. Inoc., number of animals injected; No. P. M., number of animals examined postmortem; No. with Lesions, number of animals examined postmortem which showed the diagnostic pathologic brain lesions; Org. Rec., organism recovered? Cult., diagnosis established by culture? An. Inoc., diagnosis established by animal inoculation?

TABLE 2.—RESULTS WITH CEREBROSPINAL FLUID

No.	Case	Culture	Animal Inoculations (Rabbits)					Original Organisms					Diagnosis Established by—	
			No. Inoc.	No. P. M.	No. with Lesions	Time Days	Org. Rec.	No. Inoc.	No. P. M.	No. with Lesions	Time Days	Org. Rec.	Culture	An. Inoc.
1	Wein.....	Pos.	2	2	1	3	Yes	2	1	1	12	Yes	Yes	Yes
2	P. S.....	Neg.	2	2	1	8	Yes	..	..	..	..	....	No	Yes
3	Sam.....	Pos.	2	2	2	1,4	No	2	1	1	14	Yes	Yes	Yes
4	Lea.....	Neg.	2	2	1	5	No	..	..	..	..	....	No	Yes
5	Mas.....	Pos.	8	5	3	2,2,5	Yes	4	2	2	7,10	Yes	Yes	Yes
6	M. S.....	Neg.	2	0	..	..	....	..	..	..	..	....	No	No
7	King.....	Neg.	2	1	1	4	Yes	2	2	1	6	Yes	No	Yes
8	Bit.....	Pos.	2	2	1	4	No	(derived from rabbit brain 131)				....	Yes	Yes
9	Bit..... (6 days later)	Pos.	2	1	1	6	Yes	..	..	..	..	....	Yes	Yes
10	Spa.....	Neg.	2	2	0	..	No	..	..	..	..	....	No	No
11*	Eis.....	Pos.	2	2	1	2	Yes	3	1	1	9	Yes	Yes	Yes
12	G-h.....	Neg.	2	2	1	1	No	..	..	..	..	....	No	Yes
13	Skol.....	Neg.	2	1	0	..	....	..	..	..	..	....	No	No
14	Shuz.....	Pos.	2	1	1	2	No	..	..	..	..	....	Yes	Yes
15	G-g.....	Neg.	2	2	0	..	....	..	..	..	..	....	No	No
16	G-n.....	Neg.	2	1	1	1	Yes	..	..	..	..	....	Yes	Yes
17	G-z.....	Pos.	..	..	..	..	....	..	..	..	..	....	Yes	....
18	Mach.....	Neg.	..	..	..	..	....	..	..	..	..	....	No	....
19	S-k.....	Pos.	..	..	..	..	....	..	..	..	..	....	Yes	....
20	G-n.....	Pos.	Organism also found in direct smear of centrifugalized fluid										Yes	....
Total.....		Pos. 10	38	28	15	..	Pos. 7	13	7	6	..	5	Pos. 11	Pos. 12

* Hemorrhagic spinal fluid. Lesions in animals tend toward hemorrhagic encephalitis type.

required enhances the value of the test. The diagnosis was confirmed by animal inoculations in eleven of the fourteen nasopharyngeal washings tested, or 78 per cent. The method was of distinct practical value in two instances. In one case, in the presence of a markedly bloody spinal tap, a differential diagnosis had to be made between intraventricular hemorrhage, cerebral neoplasm, cerebrospinal syphilis, and epidemic encephalitis. The symptoms and physical findings did not warrant making a definite diagnosis. One of the two animals injected with the filtrate of the nasopharyngeal washings of this patient succumbed within two days with the characteristic brain lesions. This patient subsequently ran the typical course of the disease, and was

Filtrates of nasopharyngeal washings from seventeen patients with epidemic encephalitis were cultivated on the kidney-ascitic fluid medium, with positive findings in eleven cases. Subcultures of many of these strains were taken successfully and carried along through several generations. In five instances the organism was recovered from the brains of animals injected with the virus of these nasal washings, and in three instances, from the brains of rabbits injected with the organisms isolated from these nasopharyngeal washings. Cerebrospinal fluids, drawn in sterile fashion from sixteen patients having epidemic encephalitis, were injected intracranially into rabbits in amounts of from 0.25 to 1 c.c. Fifteen of the twenty-nine rabbits that died showed the characteristic microscopic lesions.

even of these animals succumbed within four days, three within six days, and one, eight days after the inoculation. Animal inoculation, therefore, served to confirm the diagnosis in twelve of the sixteen cases tested, or 75 per cent.

Cerebrospinal fluids have yielded the filtrable microorganism in eleven of the twenty spinal fluids cultivated. It was found in one case on direct smear of the sediment of the centrifugalized spinal fluid. These strains were carried in one instance as far as the eighth generation. The same organism was recovered from the brains of eight rabbits injected with the spinal fluid itself, and from the brains of four rabbits injected with the organism derived from these spinal fluids.

CONTROLS

The filtrate of nasopharyngeal washings from a patient with influenza complicated by bronchopneumonia and sinusitis was injected intracerebrally into a *Macacus cynomolgus*, with entirely negative results.

TABLE 3.—CONTROLS

Nasopharyngeal Mucous Membrane:			No. Rab. Inoc.	No. Rab. Exam. Postmortem	No. Rab. with Lesions	Result
Case	Disease	Culture				
1. Lowy	Cardiovascular disease.....	Neg.	1	1	0	Neg.
2. S.	Appendicitis with peritonitis..	Neg.	3	0	0	Neg.
3. Y. R.	Megaecolon	Neg.	2	1	0	Neg.
4. F.	Mediastinal tumor	Neg.	2	0	0	Neg.
5. B.	Carcinoma of stomach.....	Neg.	3	0	0	Neg.
6. Sa.	Postoperative hemorrhage ..	Neg.	2	0	0	Neg.
7. P.	Empyema-lung abscess	Neg.	2	0	0	Neg.
Nasopharyngeal Washings:						
1. Giv.	Sinusitis	Neg.	1	1	0	Neg.
2. Roth.	Sinusitis; bronchopneumonia	Neg.	2	2	0	Neg.
3. K.	Mastoiditis	Neg.	1	1	0	Neg.
4. B.	Pyelitis	Neg.	1	1	0	Neg.
5. R.	Appendicitis; postop. pn. ..	Neg.	1	1	0	Neg.
6. Re.	Empyema	Neg.	1	1	0	Neg.
7. D.	Cholelithiasis	Neg.	1	1	0	Neg.
8. T.	Nephrolithiasis	Neg.	1	1	0	Neg.
Cerebrospinal Fluids:						
1. Lew.	Brain abscess	Neg.	3	0	0	Neg.
2. Wach.	Brain tumor	Neg.	2	2	0	Neg.
3. Bay.	Psychasthenia	Neg.	2	0	0	Neg.
4. Blake	Uremia	Neg.	2	0	0	Neg.
5. Lutz	Multiple sclerosis	Neg.	1	1	0	Neg.
6. Dug.	Tuberculous meningitis.....	Neg.	1	1	0	Neg.
7. Fleigl	Cerebrospinal syphilis.....	Neg.	1	1	0	Neg.
8. S.	Spinal cord tumor.....	Neg.	1	1	0	Neg.

Filtrates of the nasopharyngeal mucous membrane from six patients dead of diseases other than lethargic encephalitis were used to control our rabbit inoculation experiments. Cases from the surgical wards were preferred, so as to eliminate the possibility of contact with the disease under investigation. Of the fourteen rabbits injected intracranially, only one died, and the brain of this animal had no demonstrable pathologic lesions. Encephalitis could not be produced in six rabbits by the intracranial inoculation of filtrates of nasopharyngeal washings from two patients, one suffering from influenza with bronchopneumonia, and the other from uncomplicated influenza.

Control cultural studies were carried out on the filtrates of seven nasopharyngeal mucous membranes and eight nasopharyngeal washings. This material was obtained postmortem or in vivo from cases other than epidemic encephalitis, with surgical cases preferred. Tissue-ascitic fluid cultures of this material were negative.

Cerebrospinal fluids of four cases (brain abscess, brain tumor, psychasthenia and uremia) were inocu-

lated into nine rabbits in amounts of from 0.25 to 1 c.c. The brains of the two animals that died showed no gross or microscopic lesions.

Cultures were made of the cerebrospinal fluids in seven neurologic cases and one case of uremia with entirely negative results.

CONCLUSIONS

1. The Berkefeld filtrates of nasopharyngeal washings from cases of epidemic encephalitis produce characteristic lesions when injected intracranially into rabbits. This finding has served us as an aid to diagnosis in 78 per cent. of the cases so tested.

2. A minute filtrable organism, identical with that described before by us,³ has been recovered in eleven of the seventeen nasopharyngeal washings cultivated, or 64 per cent.

3. Inoculation of rabbits with the cerebrospinal fluids of patients with epidemic encephalitis confirmed the diagnosis in twelve of the sixteen fluids injected, or 75 per cent.

4. Cultures of cerebrospinal fluids have been positive in ten out of twenty cases, or 50 per cent.

5. Our positive results with cerebrospinal fluid sharply differentiate this disease from poliomyelitis.

6. Our control studies have been uniformly negative.

LIPURIA ASSOCIATED WITH CHRONIC NEPHRITIS *

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Almost all of the recorded instances of fat in the urine appear under the caption "chyluria." The several features of this condition which are now more or less well recognized are the occurrence of fat, fibrinogen or fibrin, red and white blood cells in the urine, the direct quantitative relationship between the fat ingested and that excreted in the urine, and lastly, the increase in fat elimination during rest in the recumbent posture. Both the parasitic (filarial) and the nonparasitic forms have been explained by a fistulous communication of the lymphatics with some part of the urinary system. In 1908, Magnus-Levy¹ stated that lipuria could arise only in this manner. Five years later, Sakaguchi² found that the average fat elimination through the urine in health and in a variety of diseases was about 8.5 mg. per day, and that this amount could be increased fourfold by fat ingestion. Only in one case of chronic parenchymatous nephritis did the fat rise to 73 mg. This the author thought was probably due to an altered permeability of the renal tubules. In the course of their work on the behavior of stained fat in the animal organism, Mendel and Daniels³ noted that rats fed on lard stained with sudan III excreted both fat and dye in the urine. Dr. Amy L. Daniels has kindly permitted us to insert two typical protocols of unpublished experiments.

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1. Magnus-Levy, A.: Ztschr. f. klin. Med. **66**: 482, 1908.

2. Sakaguchi, K.: Ztschr. f. physiol. Chem. **48**: 1, 1913.

3. Mendel, L. B., and Daniels, A. L.: J. Biol. Chem. **13**: 71, 1912-1913.

RESULTS OF EXPERIMENTS

Rat 1 received food containing 75 per cent. of lard stained with sudan. The next day the urine was distinctly pink. The residue obtained after evaporation of the ethereal extract was quite pink and contained fat as shown by the melting point and by the odor of acrolein on heating.

Rabbit 4 received 8 c.c. of sudan-stained oil administered by stomach tube. The following day the urine was pink and contained fat, as shown by the melting-point test and by the formation of a grease spot when brought in contact with paper.

More recently the work of Sanes⁴ and Kahn⁴ also indicated that an abnormal permeability of the renal capillaries or epithelium might be a factor in the production of lipuria. The data at our disposal appear to support this view. At least, the available evidence makes it probable that there are at least two types of lipuria, the one associated with a fistulous communication, the other entirely due to an abnormal permeability of the renal cells.

REPORT OF CASE

History.—A white farmer (clinical number 4928), aged 37, who had never lived in a tropical region, married, and the father of four children, admitted to the University Hospital, Aug. 2, 1918, admitted a gonorrheal infection about one year previously but denied syphilis, though his wife had had two miscarriages. His family history was not significant. He had undergone two operations: an appendectomy, in 1913, and another operation for peritoneal adhesions one year later. He had also suffered from smallpox and scarlatina. His present illness began in March, 1918, with headache, swelling of the ankles and dyspnea. July 1, 1918, he first noted that his urine appeared cloudy and oily. Physical examination detected an edema of the legs, a hypertrophied heart, and blood pressure of 150 systolic and 100 diastolic. Blood examination revealed a moderate secondary anemia and a strongly positive Wassermann reaction, which was negative on three subsequent occasions after arsenical treatment. The patient was discharged much improved, Sept. 13, 1918, but was readmitted, November 26 of the same year, with headache, generalized edema and fulness of the abdomen. The heart was large, the liver palpable and tender, the blood pressure: systolic, 190, and diastolic, 120. In spite of treatment the headache increased in severity, and the eyegrounds, which were normal on the first admission, now showed albuminuric retinitis and retinal hemorrhages. The signs and symptoms of pneumonia developed, and death, which occurred, Dec. 16, 1918, was preceded by vomiting, convulsions and coma.

Urine Examinations.—The urine was always cloudy. Its specific gravity ranged from 1.013 to 1.018. It was neutral or alkaline, and contained much albumin and many casts and occasionally a few red and white blood cells. Fat globules were never present. The renal dietary test (August 6) showed a maximum specific gravity of 1.021, a variation of specific gravity of 17 points. The night urine measured 220 c.c. and had a specific gravity of 1.018. A sample of the turbid urine was evaporated to dryness and extracted with alcohol-ether mixture. The extract was precipitated with acetone. The precipitate gave positive tests for phosphorus and glycerol, thus indicating the presence of lecithin. The filtrate responded to the test for cholesterol.

The influence of fat ingestion on the fat content of the urine was studied by Bloor's method. The results are shown in the accompanying tables.

A second dietary test was performed, December 12. The maximum specific gravity was 1.020, the variation of specific gravity was 12, the night urine measured 950 c.c., and its specific gravity was 1.008. No retention of nitrogen or chlorin was found during a period of five days.

Blood Examinations.—The results are expressed in terms of milligrams per hundred cubic centimeters of blood. Owing to external conditions it was not possible to carry out

all the determinations that we had in mind. August 6 (three hours after the midday meal), the urea-nitrogen content was 37; the uric acid, 3.8; the creatinin, 2; the cholesterol, 180; the glucose, 110; the chlorids, 703; the carbonates, 6 per cent. by volume, and the plasma proteins, 4,440. December 15 (patient in coma), urea nitrogen was 17.8, and the carbonates of the plasma were 44.7 per cent. by volume.

Necropsy Findings (by Dr. Frank Paul).—Each pleural cavity contained about 300 c.c. of yellowish, watery fluid which coagulated spontaneously. The lower lobes of both lungs showed bronchopneumonia. The heart showed hypertrophy and dilatation, especially of the right side. The aorta was normal throughout. There was no enlargement of the thoracic duct or other lymphatics. The abdomen and its contents were normal except for the kidneys. These measured 13 by 8 by 3 cm. and weighed 215 gm. On section they cut with little or no resistance. The cortex measured 1 cm., was soft, and presented a yellowish, fatlike appearance. The capsules stripped easily. The pelvis contained an unusually large amount of fat. Frozen sections stained with sudan gave negative results. Further microscopic examination of the kidneys disclosed the fact that the tubules in the cortical region were swollen, and that the cells were large, cloudy and granular but not fatty. In some, the lining cells were entirely absent. The glomeruli were enlarged, and many showed an increase in connective tissue but no fatty or amyloid degeneration. A large number were adherent to the capsular wall. The capsules were thickened and very vascular. The capsular epithelium showed proliferation in

EFFECT OF FAT INGESTION ON THE URINARY FAT ELIMINATION

Date	Period	Fat Urine, Gm.	Cholesterol in Urine, Gm.	Comment
Aug. 21	12- 2 p.m.	0.15		
	2- 4 p.m.	0.06		
	4- 6 p.m.	0.08		
	6- 8 p.m.	0.035		
Aug. 23	10-12 m.	0.084		
	12- 2 p.m.	0.120		Noon meal rich in fat
Aug. 26	10-12 m.	0.1215		
	12- 2 p.m.	0.168		Noon meal rich in fat.
Aug. 28	8-12 m.	0.024	0.0003	
	12- 4 p.m.	0.116	0.0009	No breakfast; noon meal rich in fat.

certain instances. Areas of round-cell infiltration were present. The medulla was very vascular. The tubules were not as large as in the cortex. Their lining cells were clear. There was a slight increase in connective tissue. Section of the kidney stained by Levaditi's method for spirochetes were negative. Excepting for a marked degree of endarteritis, microscopic examination of other organs, including the brain, was negative.

COMMENT AND CONCLUSIONS

The clinical, chemical and pathologic data suggest progressive nephritis, possibly of syphilitic origin, associated with lipuria and terminating in uremia. The lipuria was influenced by the amount of fat in the diet. The absence of coagulated protein, the scarcity or absence of cells in the urine, and the apparent absence of a fistulous communication, indicate that the lipuria was due to an altered permeability of the renal epithelium. The presence of lecithin and cholesterol are worthy of note (though both substances have been found by a number of authors on previous occasions). In this case there was no increase of cholesterol in the blood. The occurrence of typical uremic symptoms without cerebral edema or retention of urea has also been pointed out before. The incidence of syphilis in this case recalls the work of Stengel and Austin,⁵ who noted the frequent occurrence of doubly refractile bodies in the urine in nephritis associated with syphilis.

4. Sanes, K. I., and Kahn, Max: On Nonparasitic Chyluria, Arch. Int. Med. 17: 181 (Feb.) 1916.

5. Stengel, A., and Austin, J. H.: Tr. Assn. Am. Phys. 29: 312 1914.

ACUTE PERFORATION OF MECKEL'S DIVERTICULUM BY FOREIGN BODY (FISH-BONE)

REPORT OF CASE *

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We have failed to find in the records of the St. Louis City Hospital any case similar to the one reported herewith, which we consider of sufficient interest and rarity to merit detailed mention.

REPORT OF CASE

History.—C. A., white man, aged 39, admitted to the hospital, Feb. 11, 1920, had suffered from abdominal pain for two days prior to admission. At first the pain was generalized, cramplike and intermittent. It was mild in the beginning, and the patient worked as usual on the first day. On the second day, the pain was more severe, confining the patient to bed. He was nauseated, but did not vomit. Late in the day, he had a severe chill. On the day of admission, the pain had become localized to the right lower portion of the abdomen, but was constantly increasing in severity. A self-administered dose of castor oil in the early morning had effected a large bowel movement, but there was no vomiting. Nausea had continued.

Examination.—The patient was well developed and well nourished. The head, neck, chest and extremities were normal. The abdomen was slightly distended; there was distinct muscular rigidity on the right side. Slight tenderness was present in the appendicular region. There was no dulness in the flanks, and no masses were palpable. Tenderness was elicited on the right side by rectal examination. The leukocyte count was 19,600. The systolic blood pressure was 135; diastolic, 80. A diagnosis of acute appendicitis was made, and an operation was performed.

Operation.—Under ether anesthesia the peritoneal cavity was opened by a vertical incision through the right rectus muscle. The appendix was found to be fastened with light adhesions to a large omental mass which lay just below the brim of the pelvis on the right side. After being freed, the appendix was removed in the usual manner. Further exploration revealed a loop of lower ileum, approximately 3 feet from the ileocecal valve, enclosed in the omental mass. When the omentum was separated, a pouchlike structure was found springing from the intestine, and slightly nearer the tip than the base of the pouch was a small perforation through which a stiff, slender sharp-pointed foreign body protruded. Some pus and intestinal contents were present in the omental mass. The mesentery was very edematous and contained a group of greatly enlarged glands. The loop of ileum which had been encased in omentum was cyanotic, lusterless, and apparently hope-

lessly damaged by infection and constriction. Accordingly, about 6 inches of damaged bowel bearing the perforated, pouchlike structure were resected, and end-to-end anastomosis was performed. Exploration revealed no other diverticulum in the small intestine. The incision was then closed in layers without drainage.

Postoperative History.—The first twenty-four hours following operation were normal, but on the second day the abdomen became markedly distended and tender. The pulse was rapid, the temperature elevated, and incessant vomiting developed. The wound was reopened, February 13, at which time a general peritonitis was well established. The intestinal loops were distended, dull red and lusterless. The intestinal wall immediately above and below the site of resection showed some small gangrenous areas, the mesentery showed some thrombosis, and there was some leakage at the line of anastomosis. Several inches of damaged intestine were fastened outside the abdominal cavity (to be opened a few hours later). Drains were placed, and the wound closed loosely. From this time the symptoms of general peritonitis increased steadily in severity. The patient succumbed to this condition, February 17.

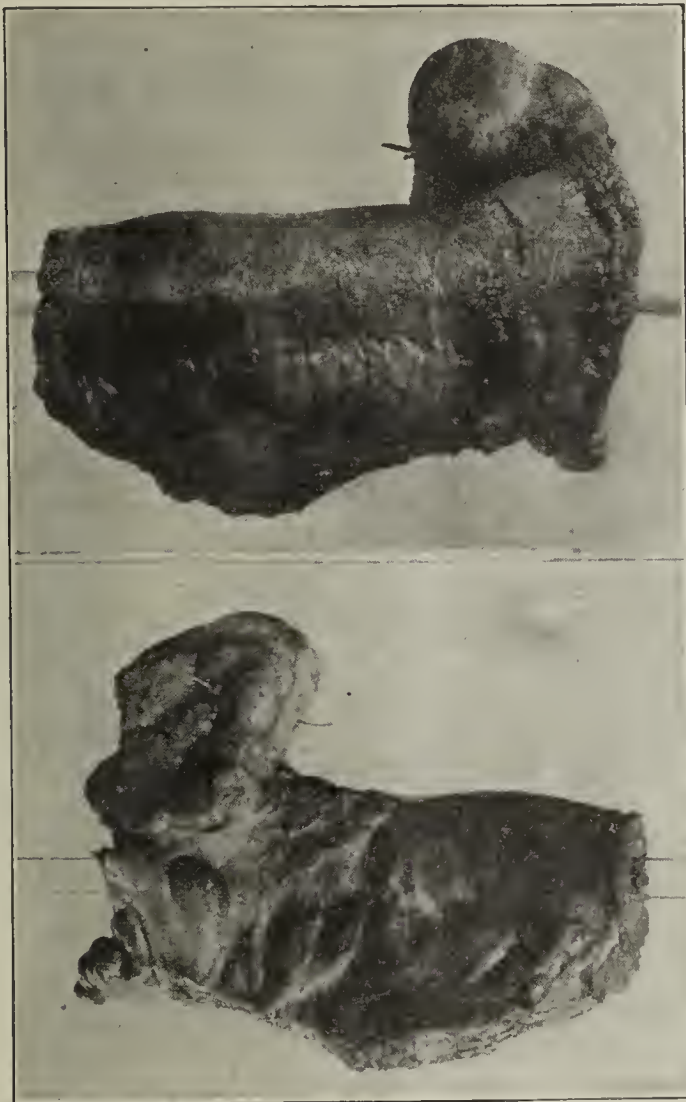
Examination of Specimen.—The specimen consisted of a 6-inch section of lower ileum, from which a pouchlike diverticulum sprang, about midway between the mesenteric attachment and the free border. The lumen of the diverticulum was continuous with the lumen of the intestine, but was somewhat less in diameter. The length of the pouch was 3.5 cm., and it ended in a globular extremity. The structure of the wall of the diverticulum was identical with that of the adjacent ileum, and the layers of intestine and diverticulum were directly continuous. Lying within the lumen of the diverticulum was a slender fish-bone, one end of which was firmly impacted in the wall, while the other sharply pointed extremity protruded through a perforation located about halfway between the base and tip.

Microscopic examination of sections from the diverticulum revealed normal intestinal structure modified by inflammatory changes.

The diagnosis was Meckel's diverticulum, with acute perforation due to impacted fish bone.

COMMENT

Through several excellent clinical articles—those of Richter¹ and McDonald² being especially commendable—Meckel's diverticulum has become well recognized as a cause of various surgical lesions. It may cause intestinal obstruction, intussusception and volvulus; it harbors foreign bodies as does the appendix, and may be the seat of acute inflammation and perforation. Its pathology is closely analogous to that of the appendix, and its symptomatology is practically the same. Gebele³ collected the records of four cases of simultaneous acute diverticulitis and acute appendicitis, while Pearce⁴ has added the report



Above, hardened specimen with glass rod in lumen of intestine and fish-bone projecting from perforation in diverticulum; below, opposite side of specimen after removal of the half of diverticulum nearest the camera.

1. Richter, H. M.: Vitelline Duct Malformations, Surg., Gynec. & Obst. 2: 668, 1906.
2. McDonald, A. L.: Meckel's Diverticulum as a Cause of Surgical Lesions, Journal-Lancet 38: 259 (May 1) 1918.
3. Gebele: Zur Kasuistik der Entzündung des Meckelschen Divertikels, München. med. Wehnschr. 55: 1236, 1908.
4. Pearce, W. F.: Perforation of Meckel's Diverticulum and Accompanying Appendicitis, U. S. Naval M. Bull. 13: 546 (July) 1919.

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of a case of acute appendicitis with simultaneous acute perforation of Meckel's diverticulum.

Stern⁵ collected records of fifteen cases of acute perforation in 1917, and added two of his own; his list, however, is incomplete and comprises only a fraction of the total number of cases reported. Among the foreign bodies found in Meckel's diverticulum are coproliths, apple seeds, cherry stones, needle, Murphy button (reported by Peck⁶), fish bones, orange peel, ascarides and threadworms. These foreign bodies are usually found incidentally, and are seldom directly responsible for the perforation. We have found reference to only two other cases of perforation due to fish bones.

Aside from mere academic interest in this unusually rare case, we may deduce the practical lesson that if at operation the appendix does not seem sufficiently involved to account for the severity of the symptoms, then Meckel's diverticulum should be borne in mind in searching for the seat of trouble. We incline also to the belief that had we in this particular case instituted early enterostomy and abdominal drainage instead of primary resection, we might have secured a more happy result.

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UTERINE RUPTURE AT TERM AFTER PITUITARY EXTRACT

COMPLICATED BY PREMATURE SEPARATION OF THE
PLACENTA *

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Uterine rupture is one of the most serious complications occurring during pregnancy. It is fortunate that the condition is a rare accident, since the emergency is followed by such high fetal and maternal mortality. Individual reports as to the frequency of the complication vary from one in 250 cases (Tauffer) to one in 6,100 cases (Leopold¹). Statistics from the Berlin Frauenklinik (Koblanc²) give a frequency of one in every 462 cases; New York Lying-In Hospital (Lobenstine), seventy five in 60,000 cases, or one in 800; Moscow Maternity (Ivanoff, 1877-1901) one in every 956 cases, or 124 cases in a series of 118,581 confinements. Freund,³ collecting statistics of seventeen investigators, reported a frequency of one in every 2,114 cases; in the Royal Maternity Charity in London for the years 1827-1856, eight cases in a series of 48,996 pregnancies, or one in 6,150 cases. The statistics with few exceptions are taken from hospital reports and do not show the true frequency, since it often occurs that the patient succumbs at once at home, or else survives the immediate shock of an incomplete rupture to die later when the delayed death is incorrectly attributed to peritonitis or some other condition.

Rupture of the uterus may be complete or incomplete, and may occur at any time during pregnancy

or labor. Brandt states that it occurs eight times more frequently in multiparas than in primiparas. Spontaneous rupture during early pregnancy is one of the rarest accidents. Baisch,⁴ in 1903, collected eighteen instances of rupture during pregnancy from scar, trauma, overdistention, or diseases of the chorion. Incarceration and placenta praevia may be determining factors, as illustrated in Arnold Lea's cases in which rupture occurred spontaneously at six months and seven and a half months, respectively. During the puerperium, a dissecting metritis with sloughing may terminate in rupture. Yet the great majority of cases rupture during labor and may either be spontaneous or follow trauma. The predisposing causes are numerous, and much stress is laid on the degenerative changes or weakening of the uterine musculature resulting from tumor growths, overdistention, and the scars from myomectomies, perforations and cesarean section. Frequently, however, microscopic evidence of any degeneration of the myometrium is wanting. Becker has reported an interesting case of repeated spontaneous rupture, and has collected twenty-seven similar cases from the literature. Within recent time the profession has been aroused by the many cases which occur in pregnancies following cesarean section. As early as 1886, Krukenberg⁵ stated that rupture occurred in 50 per cent. of such cases; and even in 1914, Rongy⁶ concluded that 3 per cent. of these women will have a ruptured scar with a 50 per cent. mortality. Prolonged labor following a disproportion between passages and passengers with undue thinning of the lower uterine segment predisposes to rupture. Among the many exciting causes we include uterine manipulation and the untimely use of oxytocics. My purpose in this paper is to report a case of uterine rupture occurring after the use of a small dose of pituitary extract.

Dale,⁷ in 1906, had noticed that pituitary extract caused rhythmic contraction of the nonpregnant uterus. The extract was introduced in obstetrics in 1909 by Bell of the Royal Infirmary of Liverpool to overcome uterine inertia and check the bleeding of placenta praevia and of cesarean section; also by Foges and Hochstaetter of Vienna in the same year. These three investigators began the use of the preparation soon after the announcement of Frankl-Hochwart and Froelich that pituitary extract had a marked stimulating effect on the uterus of a pregnant animal.

Like all powerful physiologic principles that have been introduced in therapeutics, it was enthusiastically accepted as a valuable addition to the obstetric armamentarium. Reports began to appear illustrating its widespread acceptance, before its value, limitation and dosage were determined clinically. The dictum of the manufacturers of the product that "the drug was remarkably free from danger even when given in enormous doses" was accepted. Thus, Edgar,⁸ in 1913, advocated its employment with an incompletely dilated cervix for uterine inertia in doses of from 0.1 to 0.4 gm. Gousew,⁹ in 1913, after using the extract in forty-eight cases, declared that "irregular pelvis not

5. Stern, K.: Ueber Perforation des Meckelschen Divertikels, Deutsch. Ztschr. f. Chir. **111**: 343, 1917.

6. Peck, C. H.: Murphy Button Retained for Three Years in Meckel's Diverticulum, Ann. Surg. **69**: 134, 1909.

* From the Woman's Clinic, University of California Hospital.

1. Leopold: Zur Behandlung der Uterusruptur, Arch. f. Gynäk. **36**: 324, 1889.

2. Koblanc: Beitrag zur Lehre von der Uterusruptur, 1895.

3. Freund: Deutsch. med. Wchnschr., June 5, 1890; abstr. Am. J. Obst., 1890.

4. Baisch: Beitr. f. Geburtsh. u. Gynäk. (Hegar's), 1903, No. 7, p. 249.

5. Krukenberg: Ueber das Verhalten alter Kaiserschnittnarben bei nachfolgender Schwangerschaft, Arch. f. Gynäk. **28**: 421, 1886.

6. Rongy: New York M. J. **99**: 878, 1914.

7. Dale: J. Physiol. **24**, No. 3, 1906.

8. Edgar: Pituitary Extract in Uterine Inertia, Am. J. Obst. **68**: 20 (July) 1913.

9. Gousew: Med. Press & Circ., Feb. 5, 1913.

beyond a medium degree of contraction were no contraindication for its use even when the presenting part stood above the inlet." The employment of pituitary extract in contracted pelvis to force the presenting part through the brim and pelvic cavity, and to stimulate labor pains in such malpositions as face and occiput posterior presentations, was not infrequent. It does not excite comment, therefore, that in the light of our knowledge of the powerful stimulating action of the drug, its indiscriminate use was followed by numerous complications. Thus, reports of fetal asphyxia, maternal collapse, tetanus uteri, premature separation of placenta and uterine rupture began to appear, the last resulting in a high mortality for mother and child.

McNeile¹⁰ cites a case and collected statistics of fifteen cases of rupture after pituitary extract with thirteen maternal deaths; Wertenbaker¹¹ reported two additional cases of rupture, and numerous isolated reports of the same complication have appeared from time to time in the literature. The usual dosage was 0.1 gm., which was repeated when deemed necessary. On the strength of the many unfavorable reports following the administration of the drug in labor, the initial enthusiasm has been replaced by a more conservative notion as to its field of usefulness, and Norris¹² declares that the "innumerable reports of rapidly and safely terminated labors constitute the real danger of pituitrin." Most obstetricians today are keenly aware that in hypophysial extract we have a powerful therapeutic principle that can be employed in labor only when certain conditions are fulfilled in the presence of definite indications. Briefly stated, pituitary extract has no place in a normal labor, and its use should be limited to uterine inertia coming on when the head is well engaged without disproportion between the child and the mother's pelvis, with complete dilatation of the cervix, and without undue thinning of the lower uterine

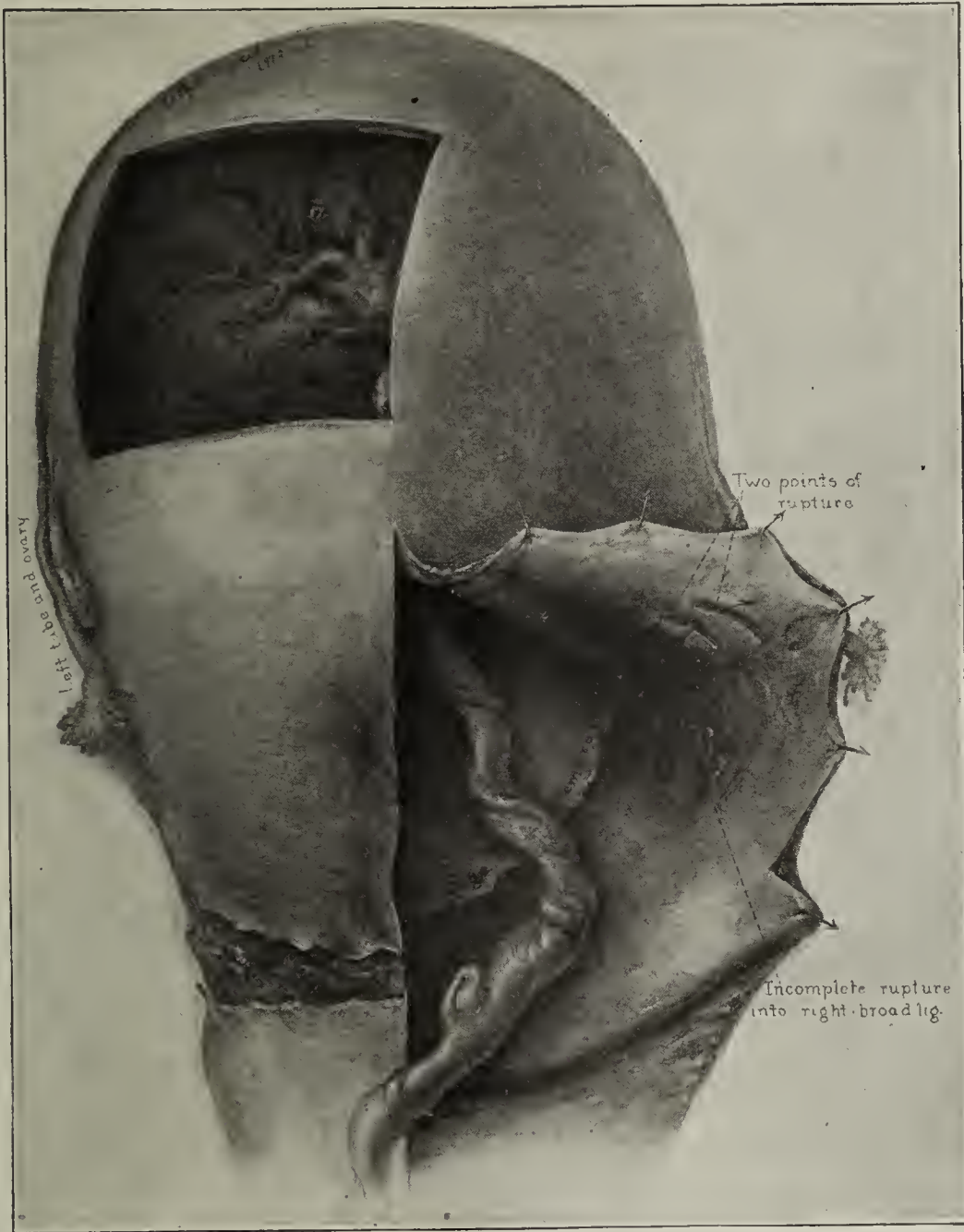
segment. The consensus is that a 1 c.c. ampule equivalent to 0.1 gm. of the drug is too large a dose, and that one half or one third of this amount is within safe limits and may be repeated frequently.¹³

The following case occurred in the obstetric department of the University of California Hospital:

REPORT OF CASE

Mrs. E. C., multipara, aged 44, 5 feet 7 inches in height, whose abdomen at term was not pendulous, and whose pelvis was normal, had had seven spontaneous miscarriages between one and three months, and eight full term pregnancies. She had never been curetted or had had any other gynecologic procedure. Her sixth labor was terminated by a midforceps operation for fetal indications. The fetus weighed 11 pounds.

The seventh labor terminated spontaneously in ten hours, the child weighing 9 pounds. Our interest centers in her eighth full term pregnancy. When the patient was at term she had a sudden hemorrhage without pain. She could not be persuaded to enter the hospital, and refused to report for further examinations and was not seen again until midnight two weeks later, when she entered the hospital. She had been bleeding slightly for a week before entry, and had lost about 200 c.c. a few hours previous to admission. Examination revealed a soft abdomen, left occipito-anterior position, with a floating head. The cervix was undilated, and there were no signs of hemorrhage. The uterus was irritable, and contracted irregularly. One hour after entrance, the membranes ruptured spontaneously. Five hours later, weak pains began. The fetal heart was not heard at any time during the labor. At 9 a. m. the cervix was completely dilated; the head was well fixed. Because of



Incomplete and complete rupture in right uterine segment: normal implantation of placenta; premature detachment 5 cm. in extent.

the good condition of the mother, the absence of fetal heart sounds, and the cessation of all signs of hemorrhage, there was no indication to deliver the patient. One-third c.c. of pituitary extract (pituitrin, B. W. & Co.) was given intramuscularly, and the pains, which had been irregular, became more frequent and stronger. For one and a half hours the advance of the head was slow but steady, and then the pains became very weak and infrequent. The patient's condition at this time was good. With the head at the level of the spines, one-third c.c. of pituitary extract was repeated. Contractions began immediately, but were not

10. McNeile, L. G.: Rupture of Uterus at Term, *Am. J. Obst.* **74**: 432 (Sept.) 1916.

11. Wertenbaker, William: Spontaneous Rupture of Uterus Following Administration of Pituitary Solution, *J. A. M. A.* **68**: 1612 (June 2) 1917.

12. Norris, R. C.: Use and Abuse of Pituitrin in Obstetrics, *Am. J. Obst.* **71**: 741 (May) 1915.

13. In addition to the references already given, the following will be found of interest:

Brodhead: Spontaneous Rupture of Uterus During Labor, *Tr. New York Obst. Soc.* **17**: 51 (Nov. 9) 1909.

Davis: Review of Literature and Case Reports on Uterine Rupture, *Surg., Gynec. & Obst.*, July, 1913.

tetanic, yet in a few minutes the patient complained of air hunger, went into extreme shock, and died within a few minutes after the administration of the drug.

At necropsy when the abdomen was opened, there was considerable free blood in the pelvis. There had been retroperitoneal bleeding, which had started in the right broad ligament and had extended along the vertebral column up to the lumbar region. The fundus of the uterus was intact, but the entire lower uterine segment to the right of the midline posteriorly was so thinned that only the peritoneum remained, and the body of the child could be seen through this layer. Here there were two slitlike ruptures of the peritoneum about 4 cm. long.

When the uterus was opened, the placenta was found attached to the fundus, but had separated over an area about 5 cm. in diameter. This condition explained the bleeding during pregnancy. An incomplete rupture was present on the right side, extending into the broad ligament through the uterine vessels. The child was in the left occipito-anterior position, weighed 10 pounds, and its palms and soles showed beginning maceration.

Microscopic examination revealed the typical invasion of the myometrium by blood cells at the site of rupture, but no degeneration of the uterine musculature in the region of the placenta or elsewhere.

COMMENT

There were no predisposing causes of rupture, that is, no cicatrix from previous operative procedures or sepsis, nor prolonged labor, the duration from first pain to time of rupture being less than six hours. Before the necropsy, it had been suggested that the premature separation of the placenta might have led to a weakening of the uterine walls by a diffuse hemorrhagic infiltration of the muscle fibers, but this was not confirmed at postmortem or by subsequent microscopic examination. Moreover, the site of rupture in the lower segment was remote from the placental site, namely, the fundus. Pituitary extract employed in a conservative manner was administered in the presence of well established indications and in doses well within the limits of safety, with disastrous results.

THE TECHNIC OF NERVE SUTURE

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In a previous paper,¹ brief consideration of the surgical principles of peripheral nerve injuries as well as a few points of technic were discussed. The importance of the latter would seem to warrant further presentation in greater detail than was possible in the scope of the former article. On the utmost consideration of minute points of technic, more exacting perhaps than in almost any other field of operation, may depend,



Fig. 1.—Lines of incision for exposure of the musculospiral nerve: *A*, exposure of the upper and middle thirds. The incision begins three finger breadths below the posterior angle of the acromion and is carried directly downward in the long axis of the arm to about the level of the insertion of the deltoid; it then turns abruptly outward to a point about 1 cm. dorsal to the insertion of the deltoid and thence continues directly downward approximately 6 cm. In the middle posterior part, the skin is widely undermined so as to bring in view more of the long head of the triceps. In the upper angle the outer and long heads of the triceps are separated; below, the outer head is split in the direction of its fibers. *B*, exposure of the middle and lower thirds. The incision begins at about the level of the insertion of the deltoid and on a plane slightly posterior. It is carried directly downward in the long axis of the arm from about 6 to 8 cm. and then passes abruptly anterior to the cleft between the brachialis anticus and the longitudinal fibers of the supinator longus. Both lines are perpendicular except in the lowermost part, whence the line curves slightly anterior into the antecubital fossa. In the upper part of the wound the outer head of the triceps is split in the direction of its fibers, thus exposing the nerve; the nerve is then exposed in the lower angle and traced upward. The outer head of the triceps at this point is tunneled under, and retracted with a band of gauze. Thus the entire nerve from its middle third to its termination in the antecubital fossa is exposed without permanent damage to any of the muscles.

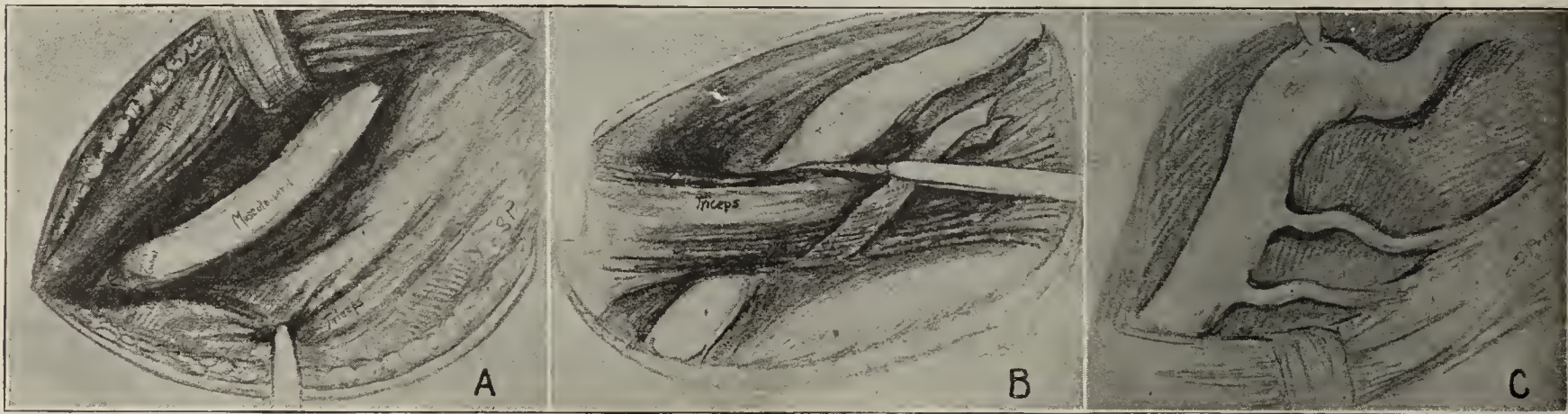


Fig. 2.—The musculospiral nerve has been exposed in its middle and lower thirds by the incisions outlined in Figure 1 (the nerve has been somewhat enlarged out of proportion). *A*, the long and lateral heads of the triceps have been separated, exposing the musculospiral nerve; a piece of gauze is shown passing beneath the lateral head. *B*, the nerve has been exposed in the lower third; the lateral head of the triceps is shown tunneled under and retracted by means of a piece of gauze; the gauze retractor stops the hemorrhage from the muscle and serves as an excellent retractor. *C*, the nerve has been mobilized in both its middle and lower thirds and has been drawn into the anterior part of the wound. The nerve was caught in dense scar; the point of constriction may be noticed; muscular branches are seen which have been freed but carefully safeguarded.

I think that this report should serve to emphasize that:

1. There is danger in the indiscriminate use of hypophysial extract in labor, especially in the doses usually given, namely, 1 c.c. ampules.

2. Even when employed for the strictest indications and in small doses, complications may ensue so rapidly that they cannot be met adequately even in well equipped hospitals.

in large measure, the ultimate results of peripheral nerve surgery.

POSITION OF THE PATIENT

Sheets should be placed so as to permit free movement of the extremity. This is necessary in some cases in efforts to move the limb in order to approximate the nerve ends and also to enable the surgeon to alter the

1. Stookey, Byron: *Surgical Considerations of Peripheral Nerve Injuries*, Surg., Gynec. & Obst. **27**: 362 (Oct.) 1918.

incision and exposure. As a practical point it will be found helpful to cover the foot and lower limb, not involved in the operative field, with sterile stockinet, and also the forearm in operations on the upper extremity. The hand should be covered when not to be included in the operation with a tight fitting rubber or cotton glove. Both of these coverings fit snugly, permit of accurate observation of individual muscular

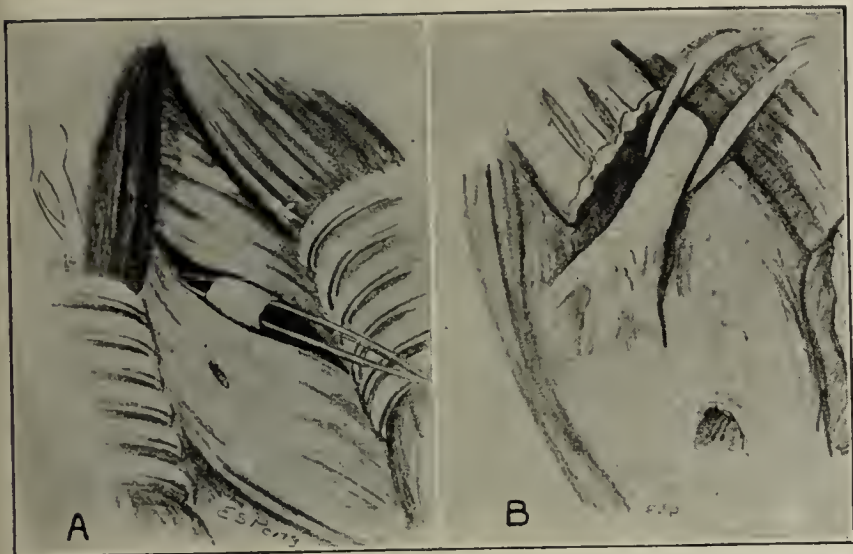


Fig. 3.—Exposure of the posterior interosseus nerve: *A*, the brachioradialis and extensor carpi radialis longus and brevis are retracted laterally; the extensor communis digitorum, mesially, exposing beneath the supinator brevis. The fibers of the supinator brevis are separated by blunt dissection in the direction of their course. In this manner the posterior interosseus nerve is readily identified. The forceps are shown passed beneath it. In most incisions an attempt is made to find the nerve at once by cutting through the supinator brevis parallel to the nerve. By so doing, unless the incision is directly over the nerve, frequently most hard to gage, difficulty is encountered in finding the nerve. However, by first splitting the fibers of the supinator longus, which run at right angles to the nerve, the latter is almost instantly found. *B*, the nerve having been identified as described above, the fibers of the supinator brevis are cut following the course of the nerve. The muscle is retracted and the nerve freely exposed to the point at which it breaks off.

movements and palpation of individual tendons during the electrical examination, and also admit of free movements of the extremity without deranging the draping and without loss of time.

MANAGEMENT OF OPERATIVE FIELD

By beginning the incision below and extending it upward, much of the troublesome venous bleeding, due to veins being cut successively as the incision is increased, may be avoided. When possible, the superficial scar should be excised. The skin edges should be well undermined so as to include the fatty fascial layer and to bring the fat with the skin edges into the new line of closure. Unless this is done, the line of union will stretch and a broad scar result. The flaps should be prepared for closure before searching for the nerve, all bleeding points tied, and the undermined edges packed with gauze after making certain that the proper line of closure has been insured. Unless this is done before nerve suture is accomplished, the extra maneuvering, coincident with preparation of the flaps, may derange the delicate line of nerve sutures.

When the deep scar is extensive, it is best to identify the nerve both above and below in normal areas, selecting, if possible, such points within the field as offer anatomic guides to the nerve in question;

for example, the ulnar nerve in the ulnar groove behind the elbow, or its relation to the flexor carpi ulnaris tendon in the forearm, or the median nerve just under the mesial border of the biceps muscle, etc.

In following the nerve from above down and from below up, care must be taken to safeguard the delicate branches to adjacent muscles. This factor, together with the close proximity to large vessels, compels the neurosurgeon to advance slowly and with extreme caution. The nerve may be retracted conveniently by passing moist tapes, about 1 cm. wide, around the nerve, beginning on the side on which there are either large vessels or important branches, so as to avoid including them. The ends of the tapes are clamped with artery forceps, the weight of which may suffice to hold the nerve in any desired position, without injury to the nerve.

While dissecting through the scar, the knife should be changed frequently so as to have at all times one that is sharp. The scar is often penetrated with stray neuraxes which seem to give to nerve scar a denser and harder consistency than is usually found, owing, possibly, to the presence of neurokeratin.

When feasible, the deep scar should be excised. Frequently this is not possible. Instead, after the nerve has been freed, the scar may be infolded on itself and sutured. In this manner a smooth bed may be made, new scar formation avoided and troublesome scar hemorrhage circumvented. When a smooth bed for the nerve cannot thus be made, either a small part of a muscle belly (not a cut and raw muscle surface, for this only increases scar formation) may be sutured so as to form, by its fascial covering, a smooth surface for the nerve; or a fatty flap may be passed around the

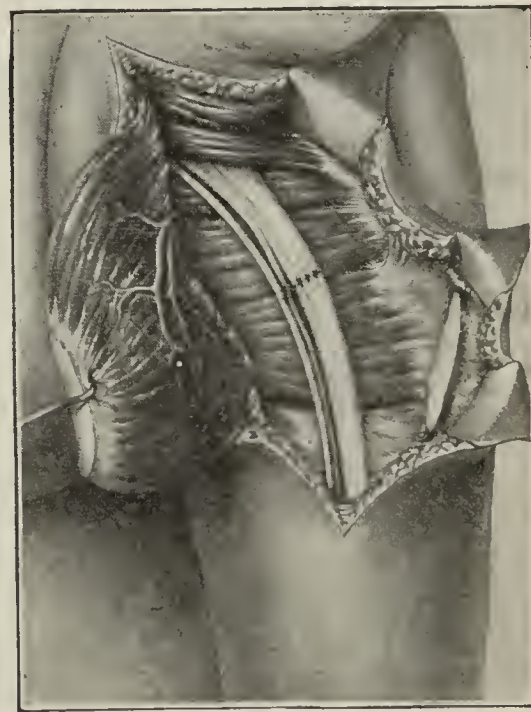
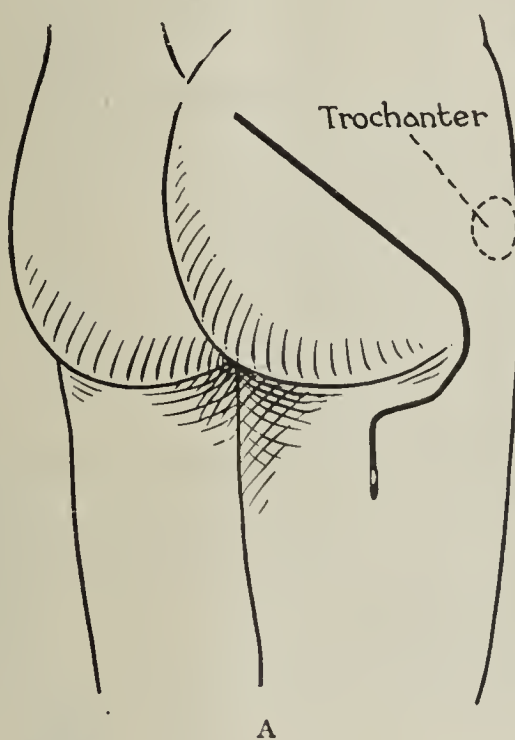


Fig. 4.—Incision and exposure of the sciatic nerve in its upper third: *A*, question mark skin incision. It begins above at approximately the level of the posterior inferior spine, extends obliquely downward and outward, about three finger breadths mesial and inferior to the great trochanter. It then curves over the gluteal fold toward the midline of the thigh posteriorly, from which point it may be continued any distance down the thigh. The skin is widely undermined until the insertion of the gluteus maximus insertion is exposed. *B*, exposure of the sciatic nerve from the lower border of the pyriformis to its entrance into the thigh. The gluteus maximus muscle is split in the direction of its fibers, by blunt dissection down to its insertion into the gluteal ridge. The insertion is then cut transversely across, about 2 cm. from the bone, so as to admit of resuture. The whole muscle is then reflected upward and medially. If the incision is rightly placed, the blood vessels are also reflected upward, consequently with very little attendant bleeding. The nerve may be followed any distance into the thigh by direct prolongation downward of the exposure.

nerve or only under it. A free transplant will tend to form additional scar and should be avoided. Care should be taken to suture the fatty flap to adjacent

tissues on both sides of the nerve in order that constriction about the nerve may be prevented. Generally speaking, if the line of nerve suture has been made so as to obtain epineural approximation, no further protection of the nerve trunk is necessary.



Fig. 5.—Suture of the sciatic nerve and the nerve to the hamstrings. The external and internal divisions have been separated and the scar removed, after which the ends were brought together. The widely separated ends of the small nerve to the hamstrings have been found in the scar, freed and sutured. The upper inset shows the level of the incision; the lower inset, the tissue removed from the external and internal popliteal nerves.

the cotton, they stand out in contrast against the white background, and they remain in place when placed at any given point on the cotton. Furthermore, at the end of the operation the underlying tissues, as a result of being covered constantly with moist cotton, are not traumatized or dried, and appear as fresh as when first incised. When such pads are not used, the threads are often hard to find in the tissues and may become more or less adherent to them.

Constant irrigation is maintained with salt solution, particularly when the nerve ends are cut and during the time they are being sutured. This helps to arrest oozing from the scar tissue and bleeding from the nerve ends, and avoids trauma connected with sponging. If sponges are used, small bits of moist cotton are placed over the nerve ends. If the bleeding is more profuse, bits of torn muscle held over the bleeding points will be found useful.

The nerve being freed, the surgeon should palpate the parts involved as well as the whole nerve trunk exposed in the field.

Operative electrodes are then applied and each stimulus carefully noted by inspection and palpation. Occasionally responses may be appreciated by palpation which might otherwise have passed unnoticed. It must be remembered that even though a negative response results, it cannot always be interpreted to mean that neuraxes have not penetrated the scar and passed into the distal stump. Although having passed the scar, they may not have reached their ultimate destination within the muscle; or, having gained the muscle, they may not yet have formed the motor end plates. Hence a negative response cannot always be held to imply failure in

downgrowth. The whole clinical ensemble as well as the anatomic field must be taken into consideration.

SPECIAL INCISIONS

For musculospiral nerve injuries in the upper and middle thirds, the position and incision described by Stookey and Guild² will be found to facilitate exposure and will also be found to be physiologically economical, in that no muscles are cut transversely, but they are split in the direction of their fibers.

For exposure of the middle and upper thirds, the arm should be placed perpendicular and at right angles to the body, with the forearm flexed over the chest, resting on a folded pillow and held in position by an assistant.

The landmarks for the skin incisions are: above, the posterior angle of the acromion; and below, the tip of the olecranon. The incision begins three finger breadths below the acromion, and continues downward to about the level of the insertion of the deltoid; thence it turns somewhat abruptly outward to a point about 1 cm. dorsal to the insertion of the deltoid, and continues directly downward approximately 6 cm. In the middle posterior part of the incision the skin edges are widely undermined.

In the upper angle of the wound, the posterior border of the deltoid and the long and outer heads of the triceps can be identified. The two heads of the

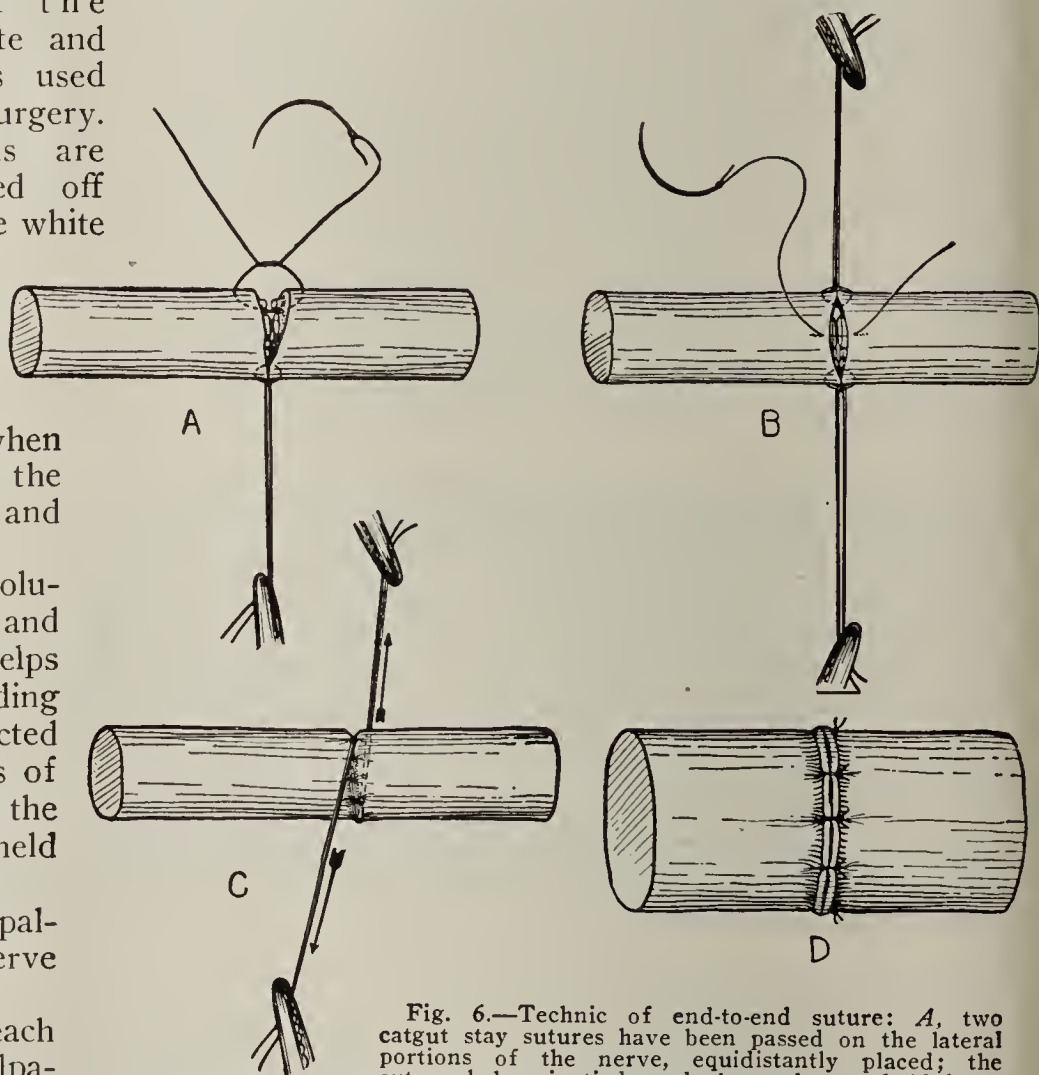


Fig. 6.—Technic of end-to-end suture: *A*, two catgut stay sutures have been passed on the lateral portions of the nerve, equidistantly placed; the suture below is tied, and the ends are held by a pair of forceps; the suture above shows the direction and depth of the bite; the suture is rather deep, passing between the funiculi, becoming, really an epineural, perineural, epineural suture; this suture is tied in like manner and clamped; these two sutures bring the deeper parts of the nerve together, prevent hemorrhage, and serve as a means of fixation of the nerve. *B*, the two stay sutures are shown in place and the nerve held in position while the fine silk epineural sutures are passed; sufficient sutures are used to insure epineural approximation; the sutures are placed so as to evert the epineural edges when tied. *C*, the anterior part of the nerve having been sutured, the stay sutures are reversed, exposing the under surface for suture; this shows the obvious advantage of the two lateral stay sutures over the single suture. *D*, the suture is here shown completed, the knots tied on one side and the epineural edges everted, insuring smooth epineural contact within.

2. Stookey, Byron, and Guild, Stacy: A Method of Exposing the Musculospiral and Posterior Interosseus Nerves, *Surg., Gynec. & Obst.* 28: 612 (June) 1919.

triceps are separated in their fascial plane, and the incision carried downward through the glistening aponeurosis, beneath which the nerve will be found. The nerve is now traced to the lower angle of the wound. At this point, the nerve will be found passing abruptly toward the anterior part of the arm. The triceps in the anterior part of the incision is now

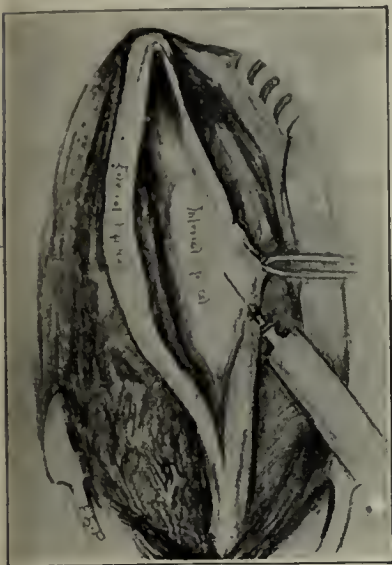


Fig. 7.—Intraneural injection of salt solution; internal neurolysis after liberation of both divisions of the sciatic nerve. This patient showed return of function in seven weeks.

incised perpendicularly in the direction of its fibers. The intervening muscle belly can be tunneled under and a complete exposure of the nerve thus obtained from the lower border of the teres major to the junction of the lower and middle thirds, with essentially no permanent damage to any of the muscles.

For exposure of the middle and lower thirds, the anterior incision described above is carried from the level of the insertion of the deltoid downward for from about 6 to 8 cm.; it then passes abruptly anterior to the cleft between the brachialis anticus and the lon-

gitudinal fibers of the supinator longus, and thence downward, more or less perpendicularly, curving slightly inward to the antecubital fossa. The usual incision for the lower third of the musculospiral nerve is not sufficiently perpendicular and is placed too far anterior, near the belly of the biceps.

For further details and for a description of the exposure of the posterior interosseus nerve, the reader is referred to the original article.

For exposure of the sciatic nerve in its upper third, the incision advocated by Klotz is modified so as to permit one to follow the nerve into the thigh without an additional incision.

The incision begins approximately at the lower inferior spine of the innominate and is carried obliquely downward and out to a point about three finger breadths mesial to the great trochanter, thence curving downward and inward over the gluteal fold to the median line of the thigh posteriorly. The incision is more or less the shape of a question mark. The lower and outer angle of the skin incision is undermined until in line with the attachment of the gluteus maximus. This attachment is freely exposed. The deep incision is now made parallel to the fibers of the gluteus maximus, separating them in the direction of their course, beginning above at the upper angle of the skin wound and carried directly downward to a point three finger breadths below the great trochanter and thence downward across the insertion of the gluteus muscle. The insertion is cut approximately 2 cm. from the bony attachment and the whole muscle reflected toward the median line. If the incision has been correctly placed, the main vessels are reflected upward on the muscle and little bleeding is encountered. The nerve is freely exposed from the lower border of the piriformis to its entrance into the thigh. By means of this skin incision the nerve may be traced any distance farther down the thigh merely by a direct prolongation downward in the midline.

OPERATIONS AVAILABLE

Neurolysis, i. e., liberation of the nerve either with or without intraneural injection of salt solution under pressure so as to perform, as it were, an internal liberation; end-to-end suture, with or without transposition of the nerve; nerve transplantation, either fresh autogenous or homogenous grafts preserved on ice in petrolatum or liquid petrolatum, or nerves preserved in alcohol, are the operations of choice. Nerve crossing, partial or complete, may be of limited value in certain selected cases in which the anatomy may admit of utilizing adjacent nerves. Here obviously only motor nerves having related cortical centers should be employed.

Certain operations are mentioned in order that they may be avoided, since it has been shown that they are of no value and may actually do harm. Nerve flaps, so ardently advocated by Mackenzie of Portland, are worthless, as Huber³ and I⁴ have shown in experimental work and in a critical review of all cases. Huber has also shown that suture à distance offers no practical hope of regeneration. Hofmeister's lateral implantation is also to be avoided.

The value of tubulization has not yet been definitely determined, though Huber's elaborate experiments, nearly concluded, will no doubt admit of their evaluation. He has found that Cargile membrane treated in 95 per cent. and absolute alcohol persists in the tissues for five or six months and causes little or no local reaction, whereas the usual membrane is absorbed within two or three weeks. Huber's Cargile membrane may, therefore, have a particular field of usefulness, not only in nerve surgery, but wherever such membrane is used to prevent adhesions and where it is desired to have it remain longer in the tissues than is possible with any other.

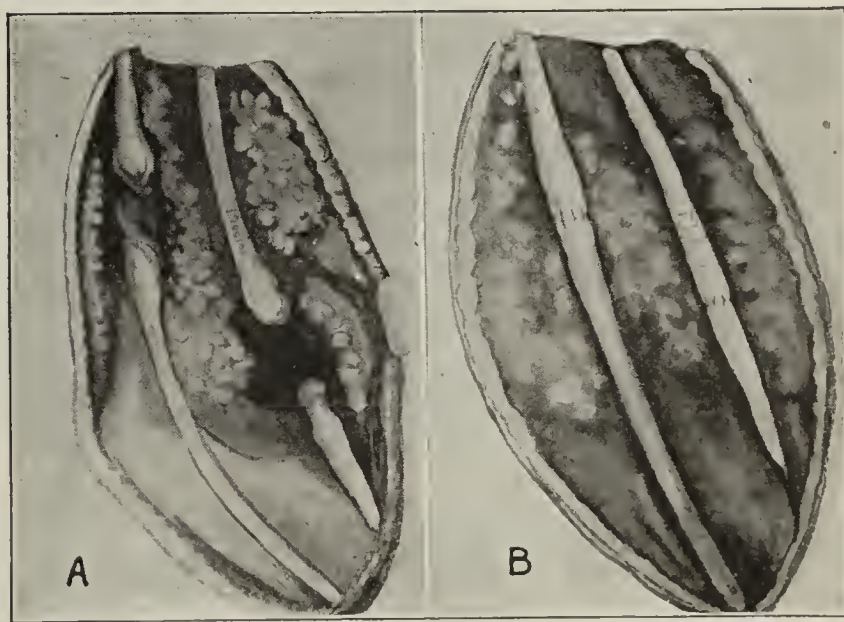


Fig. 8.—End-to-end suture of the median and ulnar nerves after transposition of the latter and the formation of a fatty bed for the nerves by means of a fat flap: A, the median and ulnar nerves are exposed; the ulnar has been transposed before severing its anatomic continuity in order to prevent axial rotation and prevent distortion of the nerve pattern. B, median and ulnar nerves have been sutured; fat flap has been passed beneath the nerves, covering over the scar tissue bed.

SUTURE MATERIALS

For stay sutures, 00 plain catgut is used. Fine silk offers the best material for grafts and epineural stitches

3. Huber, G. C.: A Study of Operative Treatment for Loss of Nerve Substance in Peripheral Nerves, *J. Morphol.* 2: 1895; Transplantation of Peripheral Nerves, *Arch. Neurol. & Psychiat.* 2: 466 (Oct.) 1919.
4. Stookey, Byron: The Futility of Bridging Nerve Defects by Means of Nerve Flaps, *Surg., Gynec. & Obst.* 29: 287 (Sept.) 1919.

in end-to-end suture. The silk should be very fine, preferably Corticelli AAA, which contains three strands. These are untwisted and separated, waxed and passed on fine curved or straight needles. They are boiled at the time of operation and again waxed with sterile wax, after which they are ready for use. Silk thus treated has a certain amount of stiffness and lends itself readily to the delicate tying with forceps so essential to accurate approximation. Further, the silk passes through the small nerve grafts with greater ease and is finer than other forms of silk available. Instead of waxed sutures, arterial silk dipped in liquid petrolatum just before using will be found satisfactory.

All nerve sutures should be tied very carefully with forceps. On the manner of tying and the degree of tension may depend the accurate approximation of the epineurium and the end-to-end apposition of the nerve grafts.

TECHNIC OF END-TO-END SUTURE

A 00 plain catgut suture is passed on each side of the nerve, equidistantly placed, taking a deeper bite than the epineurium. While this suture passes somewhat within the nerve, it really becomes an epineural, perineural and epineural suture; for, if a smooth needle is used, the funiculi are pushed aside and the suture then lies between the funiculi in the perineural connective tissue and hence does very little harm to the nerve. By these sutures the nerve in its deeper parts is brought together, hemorrhage between the nerve ends is avoided, thereby diminishing the amount of scar between the nerve ends, and tension is taken off the finer epineural sutures.

They may also serve to prevent axial rotation, particularly if they are placed before the excision of the intervening nerve scar is completed. These sutures are tied, leaving the ends about 3 inches long, to which artery forceps are clamped. They then serve to fix the nerve and facilitate in placing the fine epineural sutures.

The silk epineural sutures are then passed on the anterior surface between the two stay sutures. With very fine tooth forceps the *epineurium only* is grasped and each suture accurately placed and then tied with forceps so that the epineural edge is everted. If the sutures have been properly placed, eversion of the epineurium is easily accomplished and gives a smooth line of union on its inner surface. Each suture is cut as it is tied, sufficient sutures being used to insure complete approximation—the number naturally depending on the size of the nerve.

By reversing the two catgut stay sutures, i. e., by passing the one over and the other beneath, the under-surface is readily brought into view and sutured in like manner.

The advantages of the two stay sutures over a single stay are obvious. If a single stay is used, the nerve rotates in remaining sutures, and the nerve is not so easily fixed or its under surface brought into view. If the single stay suture is tied the lateral edges of the nerve become everted, making epineural approximation difficult.

In the presence of a small nerve defect, end-to-end suture may be accomplished by slight stretching, by transposition and by altering the position of the limb. Nerve stretching should be done with considerable caution, since the distance gained can be accomplished only by taking up the normal laxity of the nerve trunk in its contiguous parts, or by multiple tears, either within the nerve trunk or from the spinal cord. When excessive stretching is done, both are accomplished, not only but also, karyolysis of the anterior horn cells ensues, with

subsequent degeneration of the neuraxes within the central stump, an unfortunate result to be studiously avoided.

Stretching should be done only up to the point of taking up the normal laxity of the nerve within its bed.

I have seen two cases in which overstretching was done in a two-stage operation, in which a considerable

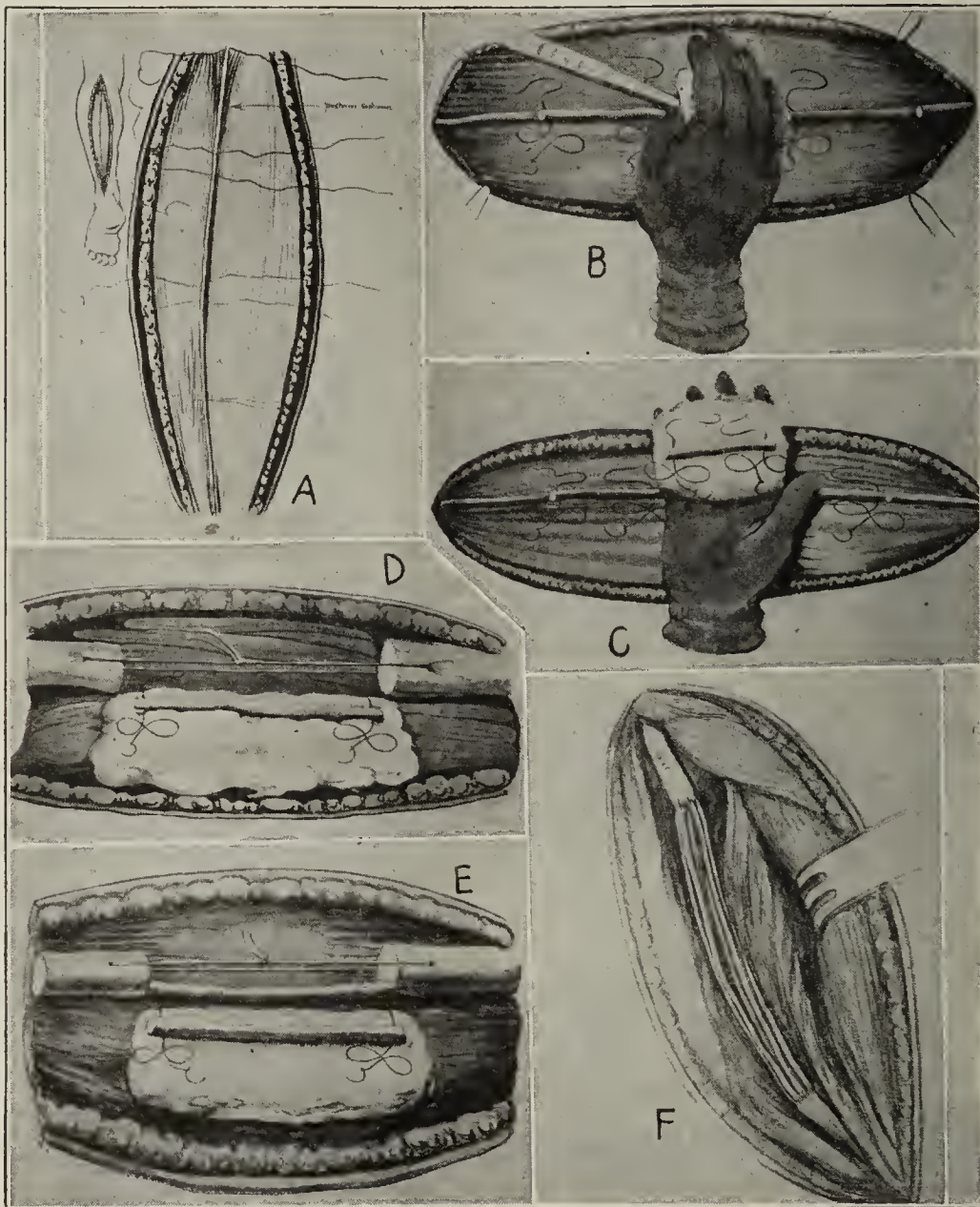


Fig. 9.—Technic of nerve transplant: A, cutaneous nerve on dorsum of leg is laid bare; the nerve segments are measured and the sutures are passed at precise intervals. B, a moist cotton pad about 4 inches square, smoothly folded, is placed over a nerve segment so as to include the sutures; by slight maneuvering with forceps, the sutures and the nerve transplant become adherent to the pad and may be lifted up with the pad; the transplant is not touched. C, the cotton pad is shown on which the nerve transplant is lifted together with the sutures, neatly curled, so as to avoid any entanglement; the transplant may then be carried to the operative field without handling and without danger of the threads tearing out, or the graft falling. D, the cotton pad is folded back parallel with the nerve segment and placed in the field, carrying the transplant in position for suture; the segment may be flooded off the pad by a small stream of salt solution. E, the first segment is shown sutured in place with the second segment ready for suture; after all grafts are in place the stay suture may be removed; it is used merely to facilitate suture of the delicate grafts. F, multiple autogenous grafts are shown sutured in place; in this instance the distance bridged was 12 cm.

interval intervened between the first and second operation. The nerve in both instances showed at the second operation marked sclerosis and internal hemorrhage throughout the nerve trunk, with subsequent scar formation as far as the nerve could be palpated. Normal nerve cross areas could not be obtained either central or distal, owing to scar, which was not present at the first operation.

Transposition of the nerve may permit defects to be overcome which might otherwise prevent end-to-end suture. A nerve may be freed and raised out of its bed over quite a distance without interfering with its nutrition. In transposing, care must be taken to safeguard nerve twigs and prevent the formation of sharp angles or kinks.

Huber³ has shown experimentally the value of the multiple autogenous and homogenous grafts, as well as those preserved in alcohol and on ice, in petrolatum and liquid petrolatum. A few cases of successful grafts have been reported in France. The technic of the graft is such that unless done by those having considerable practice it is conceivable that the results may be disappointing. The utmost regard for minute points of technic is essential. Success depends in a measure on the accuracy with which the grafts are brought end on and in precise contact with the cross area of the central and distal stumps. If the sutures are not correctly placed, or if they are not tied properly, just sufficient tension being employed, the nerve ends are likely to be inverted. In place of the graft being end on, it may be turned so that its lateral surface lies against the central cross area. While neuraxes may penetrate, the probability of such penetration is greatly diminished by such faulty approximation. For these reasons, in estimating the ultimate value of the graft, the individual technic must be considered, for it plays a predominating rôle.

A sufficient number of grafts should be taken to cover the cross area of the central and distal stumps. Unless this is done, many central neuraxes, having no path down which they may grow, may become lost, though Huber has shown that a few are able to penetrate and grow down in the small connective tissue spaces between the nerve transplants. The aim of the surgeon should be to connect each funiculus with a graft. This may be accomplished by suturing each graft separately in the desired position. In this manner the central and distal connections may be established with a certain degree of precision. This is often not possible; nevertheless, it should be essayed. For the most accurate surgery, we must await more definite knowledge concerning the internal topography, such as Elsberg⁵ and Riley have signaled they are doing.

TECHNIC OF THE GRAFT

When the nerve is freed from the scar tissue and the nerve ends successively incised until a satisfactory cross area is obtained and before the nerve continuity is completely severed, one or two stay sutures are passed at the proper level, so as to hold the nerve in alignment, prevent rotation, and help in fixation of the nerve ends during suture.

The distance to be bridged is accurately measured with a centimeter compass.

A skin nerve, such as the radialis or the cutaneous surae medialis on the dorsum of the leg, may be used.

In order to save time, a second team may lay bare the nerve. Preferably a degenerate nerve should not be used such as one would find in the lower leg on the same side as a sciatic nerve injury. The sheath cells in such a nerve are no longer in the active stage; there may also be some increase in connective tissue, particularly if the injury to the parent nerve is of some standing. It is possible that whatever neurotropism there may exist would be diminished in such a nerve, as compared with a fresh transplant. However, this is of academic interest rather than of real importance. In view of the downgrowth of neuraxes in preserved specimens, one must question the value of the rôle imputed to neurotropism.

The nerve having been laid bare over the desired length, fine waxed silk sutures on curved or straight, smooth needles are passed in accordance with the distance to be bridged, as measured with the compass. A small margin is allowed for cutting the nerve segments.

The sutures are all passed in one direction, the nerve being held tense by small forceps either central or distal to the grafts. Under no circumstances should the *nerve segments* to be used in the graft be held by forceps.

The sutures are then curled carefully so as to prevent entanglement; the needles all on one side, and the free ends on the other.

The nerve segments are cut with sharp fine scissors or a thin knife, avoiding crushing the nerve ends.

Each segment is then picked up by covering it with a small, smooth, moist cotton pad. If the cotton pad is carefully placed over the nerve and sutures, they adhere to the moist cotton and each segment may thus be lifted from the wound and placed in the operative field.

By folding the cotton pad so that its free border is parallel to the transplant, the latter may be placed between the nerve ends so as to be in exact position for suture.

By means of the cotton pad the nerve is not handled, the threads do not become entangled, danger of pulling out the suture is eliminated, and the nerve may be manipulated into its proper position for suture with the least trauma. A small stream of salt solution will be found helpful in flooding the nerve off the cotton. During the process of suture, the nerve is irrigated with warm salt, thus creating a clear field and aiding in accurate funicular approximation of the graft. In this manner, each transplant is sutured separately, both distally and centrally, with whichever funiculus is desired. The sutures are tied with forceps and cut short.

The accuracy of the graft depends in a measure on the correct placing of the sutures, the exact amount of tension in tying, and the manipulation with the sutures during the process of tying.

471 Park Avenue.

Prevention of Normal Dissipation of Heat as Factor in the Pathology of Children.—A. Czerny expatiates on heat stagnation as an important element in the pathology of older children, the same as it has long been recognized in the case of infants. He states (*Therapie der Gegenwart*, January, 1919), that children used to overcrowding at home do not suffer from the heat stasis in school as much as children used to good hygienic conditions at home. The possibility of heat stasis must be borne in mind not only for well but for sick children as an element in the clinical picture, and the advantages of out-of-door living and sleeping should not be restricted to tuberculous children.

5. Elsberg, C. A., and Wood, A. H.: Problems in the Diagnosis and Treatment of Injuries to the Peripheral Nerves, *Arch. Neurol. & Psychiat.* 2: 645 (Dec.) 1919.

SPECIFIC NATURE OF THE HEMOLYTIC STREPTOCOCCUS OF SCARLET FEVER*

RUTH TUNNICLIFF, M.D.

CHICAGO

On account of the important part that hemolytic streptococci play in scarlet fever and its complications, various observers have undertaken to study the relation of these cocci to scarlet fever by means of immunity experiments.

Moser and von Pirquet¹ concluded that the streptococci from cases of scarlet fever were different from those in other diseases. They found that the serum from scarlet fever patients agglutinated scarlet fever streptococci in low dilutions, the serum from other children but rarely; that normal horse serum agglutinated streptococci from various sources, but only in low dilutions (from 1:4 to 1:64), while the serum of horses immunized with streptococci cultivated from the heart's blood of fatal cases of scarlet fever agglutinated the same streptococci in high dilutions (from 1:1,000 to 1:64,000). The same effects were produced on streptococci cultivated from the heart blood of cases of scarlet fever, which were not used in producing immunity (from 1:1,000 to 1:16,000), while streptococci from other diseases were agglutinated at only a little higher dilution than by normal horse serum (from 1:4 to 1:250), and the serum of horses immunized with the latter streptococci agglutinated streptococci from scarlet fever patients only in the same proportion as normal horse serum.

By means of immune serum, Meyer² differentiated streptococci of angina (scarlatinal, rheumatic, simple) from those of pyogenic infections, but found gradual differences in the reaction of the anginal streptococci which spoke against an identity among them.

The agglutinating action of serum from cases of scarlet fever on scarlatinal streptococci was studied also by Salge.³ He found that those from scarlet fever were agglutinated by scarlatinal serum, but that it caused no agglutination of streptococci from other sources; however, he did not control his work by testing serum from other streptococcus diseases.

After repeating the experiments of Moser and von Pirquet, Aronson⁴ concluded that in no case could he differentiate between streptococcus groups by the most careful agglutination.

Neufeld⁵ also concluded that no specificity of streptococci isolated from scarlet fever could be shown by means of tests with immune rabbit serum.

Moser and von Pirquet⁶ later showed that the serum of horses immunized with scarlet fever streptococci did not produce agglutination of all streptococci cultivated from scarlet fever blood.

Weaver⁷ made an exhaustive study of agglutination of streptococci with human serum. He came to the conclusion that the agglutination of streptococci from cases of scarlet fever was in no way specific and could be of no value as a means of diagnosis. He found that

some of the streptococci from scarlet fever were agglutinated by almost all scarlatinal serums, others only by some, and many not at all. Streptococci from scarlet fever were agglutinated also by serum from cases of lobar pneumonia and erysipelas at about the same dilutions as by scarlatinal serums, and the same was true with the few specimens of typhoid blood and puerperal fever serum examined. As the experiments were made before hemolytic and green-producing streptococci were differentiated, it is possible that some of Weaver's strains were not hemolytic and may even have been pneumococci.

Rosswald and Schick⁸ found that Moser's anti-streptococcus serum (serum of horse immunized with scarlet fever streptococci) agglutinated many, but not all, strains of streptococci from scarlet fever patients. They isolated a streptococcus from a case of surgical scarlet fever, which was agglutinated by Moser's serum in high dilution. They concluded that the streptococci from scarlet fever that were not agglutinated by the immune horse serum belonged to a different group from those that were agglutinated.

Ruediger⁹ immunized sheep with different strains of streptococci, and found that many strains of hemolytic streptococci from scarlet fever were agglutinated by the serum of the sheep immunized with a streptococcus isolated from a scarlet fever throat, but not by the serum of sheep immunized with a hemolytic streptococcus isolated from a phlegmon of the leg. Of the eleven strains obtained from scarlet fever patients, three were not agglutinated by the scarlet fever sheep serum. Two of these organisms had each been passed through more than fifteen rabbits; the third was obtained from the suppurating cervical glands of a very mild case of scarlet fever which had appeared at the end of the fourth week. He also obtained agglutination of hemolytic streptococci isolated from erysipelas and tonsillitis in as high dilutions of the serum as in some of the scarlet fever strains.

In my study¹⁰ of the opsonic index in scarlet fever I found that the variations in the index for the scarlatinal hemolytic streptococcus even in mild cases indicated that practically from the first the scarlet fever patient is subject to a definite streptococcus infection. In the beginning of the attack the streptococco-opsonic index in the majority of cases was below normal; as the acute symptoms subsided the index rose above normal, to which it soon returned; definite local streptococcal complications were inaugurated by a depression in the streptococco-opsonic index, which rose again as improvement took place. These changes were specific for the hemolytic streptococcus, no changes occurring with staphylococci, pneumococci or *Streptococcus viridans*. Similar results were obtained by Banks.¹¹

Recently Nakayama¹² studied agglutination of hemolytic streptococci with immune rabbit serum with considerable similarity in the results with various strains of streptococci from scarlet fever; but no distinct line could be drawn between streptococci obtained from the throat and from ordinary suppurative processes. His absorption experiments did not give decisive results; the agglutinins and opsonins did not always run parallel in the serum of the same rabbit, and it did not seem possible to classify streptococci by means of opsonins.

* From the John McCormick Institute for Infectious Diseases.

1. Moser and von Pirquet: Wien. klin. Wchnschr. **15**: 1086, 1902.

2. Meyer, F.: Deutsch. med. Wchnschr. **28**: 751, 1902.

3. Salge: München. med. Wchnschr. **49**: 1729, 1902; Zentralbl. f. Bakteriologie, I, Ref. **32**: 643, 1903.

4. Aronson: Deutsch. med. Wchnschr. **29**: 439, 1903.

5. Neufeld: Ztschr. f. Hyg. u. Infektionskrankh. **44**: 161, 1903.

6. Moser and von Pirquet: Zentralbl. f. Bakteriologie, I, Orig. **34**: 560, 714, 1903.

7. Weaver: J. Infect. Dis. **1**: 91, 1904.

8. Rosswald and Schick: Wien. klin. Wchnschr. **18**: 3, 1905.

9. Ruediger, G. F.: J. Infect. Dis. **3**: 755, 1906.

10. Tunnichliff, Ruth: J. Infect. Dis. **4**: 304, 1907.

11. Banks: J. Path. & Bacteriol. **12**: 113, 1908.

12. Nakayama: J. Infect. Dis. **24**: 489, 1919.

It has been found that the opsonin reaction may serve as a means by which green-producing streptococci may be reliably differentiated (poliomyelitis,¹³ measles,¹⁴ rubella,¹⁴ influenza¹⁵). Therefore the experiments outlined below were made to study once more the question of the specificity of the hemolytic streptococcus in scarlet fever, especially in regard to opsonification, as agglutination of streptococci is uncertain.

A sheep was immunized with a hemolytic streptococcus, isolated from the throat of a severe acute case of scarlet fever. The sheep was inoculated intramuscularly weekly, at first with killed cultures, later with small numbers of living cocci. Opsonins were produced after the first injection, agglutinins after the sixth. The cocci were grown on goat blood agar twenty-four hours and suspended in physiologic sodium chlorid solution. Normal sheep leukocytes, collected in 0.2 per cent. sodium citrate solution and washed once in physiologic sodium chlorid solution, were used in the experiments. The serum, normal and immune, was heated for one-half hour at 56 C. to remove the thermolabile element, and then diluted to determine the point of opsonic extinction. The mixtures of serum, leukocytes and coccal suspension, equal parts, were incubated twenty-five minutes, smears stained with carbolthionin, fifty polymorphonuclear leukocytes counted, and the number of cells taking part in phagocytosis noted. Spontaneous agglutination of streptococci did not interfere with the opsonic determinations. The agglutination experiments proved very troublesome. Plain neutral broth (Weaver⁷), calcium carbonate broth (Ruediger⁹), blood glucose broth (Hamilton and Havens¹⁶) and phosphate broth (Dochez, Avery and Lancefield¹⁷), all were found unsatisfactory on account of spontaneous clumping of the organisms. As I had previously observed that streptococci grow more diffusely in ascitic dextrose broth than in plain or dextrose broth alone, this medium was used. One part of ascitic fluid was added to four parts of 0.2 per cent. dextrose broth p_H 7.4. The cultures were incubated twenty-four hours, centrifuged, the supernatant fluid removed, and the organisms were washed once or twice with plain meat infusion broth p_H 7.8 and finally suspended in this medium. In the tests, the serum dilutions were made with plain broth, the dilutions running from 1:5 to 1:1,000, and an equal part of bacterial suspension was added to each tube of diluted serum, and the mixtures were incubated for one hour and fifteen minutes at 55 C., and then left at room temperature for three hours. A tube containing suspended cocci in broth but without serum and one with cocci in normal sheep serum diluted from 1:5 to 1:100 or higher were included in each agglutination test. As a rule the results were clear at the end of the incubation period. The immunizing streptococcus, however, was always included in each experiment to serve as a standard. Four strains were found to agglutinate spontaneously and therefore could not be tested.

The following hemolytic streptococci were used: 27 strains isolated early in the attack of scarlet fever,

2 before the appearance of the rash (throat 20, otitis media 1, mastoid 1, finger 2, empyema 2, gland 1); 9 from the throat and 2 from ears during convalescence; 1 from wound from possible case of scarlet fever; 3 from blood, cerebrospinal fluid and knee of suspected case of scarlet fever; 26 strains were isolated from cases which were not scarlatinal in origin—normal throats 5; influenza 5, empyema 2, sputum 2, lung 1; measles 2, throat, ear; erysipelas 3; diphtheria, 2; mastoid, 1; otitis media, 1; chronic rhinitis, 1; meningitis, 1; acute tonsillitis, 1; horse pneumonia, 1; acute sinusitis, 1; blood in lethargic encephalitis, 1.

All of these strains but one produced a wide zone of hemolysis (from 2 to 4 mm.) on goat blood agar plates, after twenty-four hours' incubation. The streptococcus that produced a narrow zone of hemolysis was isolated from the ear of a scarlet fever patient during the sixth week of the disease. The size of the colonies varied somewhat, but were generally small, round and smooth. The strains from erysipelas, influenza and lethargic encephalitis produced, as a rule, larger, flatter colonies than the others. With a few exceptions the streptococci fermented lactose and salicin, but not mannite or inulin, and hence would be classed as *Streptococcus pyogenes* (Holman¹⁸). Two scarlet fever strains, one from the finger and one from an empyema, fermented lactose and mannite but not inulin and salicin (*Streptococcus hemolyticus* one); one diphtheria streptococcus originally an anaerobe fermented salicin but not lactose, mannite or inulin (*Streptococcus equi*).

Of the hemolytic streptococci isolated from the throat and the complicating lesions of early cases of scarlet fever, all gave marked phagocytosis with the immune sheep serum except the two mannite fermenters, the point of opsonic extinction being from 1:30 to 1:1,500, 1:150 being the point at which phagocytosis ceased for the majority of the strains. The contrast between the specimens with normal and immune serum was very striking on account of there being little or no phagocytosis of these scarlatinal streptococci in normal heated sheep serum when first isolated.

Three scarlet fever streptococcus strains agglutinated spontaneously and could not be tested. One streptococcus from a gland, though opsonized, was not agglutinated by the immune sheep serum. The other twenty-three scarlet fever strains were all agglutinated by the immune serum at a dilution of from 1:50 to 1:2,000, 1:500 being the dilution at which the majority of the cocci ceased to agglutinate. Only an occasional strain agglutinated at 1:5 with normal sheep serum.

The hemolytic streptococcus from the finger and the one from empyema, both mannite fermenters, as well as the strains from otitis media of two scarlet fever cases in the fourth and sixth weeks, and from the wound, blood, cerebrospinal fluid and knee of two suspected cases of scarlet fever, were neither opsonized nor agglutinated by the immune sheep serum. The two mannite fermenters agglutinated spontaneously and could not be used for agglutination tests.

None of the hemolytic streptococci isolated from the throat late in scarlet fever, except in the instances to be noted, and none from sources other than scarlet fever, were opsonized by the immune sheep serum in dilutions higher than by normal serum; and none of these cultures were agglutinated by either normal or

13. Mathers, George, and Tunnicliff, Ruth: A Reaction of Immunity in Acute Poliomyelitis, J. A. M. A. **67**: 1935 (Dec. 23) 1916. Mathers, George, and Howell, K.: J. Infect. Dis. **21**: 292 (Sept.) 1917. Nuzum, W., and Willy, R. G.: Ibid. **22**: 258 (March) 1918. Davis, W. M.: Ibid. **24**: 176 (Feb.) 1919.
14. Tunnicliff, Ruth: J. Infect. Dis. **22**: 462 (May) 1918. Tunnicliff, Ruth, and Brown, M. W.: Ibid. **23**: 572 (Dec.) 1918.
15. Tunnicliff, Ruth: J. Infect. Dis., Ibid. **26**: 405 (May) 1920.
16. Hamilton, C. D., and Havens, L. C.: Hemolytic Streptococci, J. A. M. A. **72**: 272 (Jan. 25) 1919.
17. Dochez, A. R.; Avery, O. T., and Lancefield, R. C.: J. Exper. Med. **30**: 179 (Sept.) 1919.

18. Holman, W. L.: J. Med. Res. **34**: 377 (July) 1916.

immune serum. Here it may be said that one reason why the results of these experiments indicate a greater specificity than those of certain other observers is probably the heating of the serum, which destroys the labile factors that participate in the action of normal serum.

Hemolytic streptococci obtained from the throats of nine patients during convalescence from scarlet fever, one during the second, the others during the third and fourth weeks, were not agglutinated by the immune serum and not opsonized in higher dilutions than with normal serum. It is noteworthy that cultures of four of these patients had been taken previously and hemolytic streptococci obtained which reacted positively with the immune serum, but that during the third week the cultures of two of them gave only a few colonies of hemolytic streptococci, which in the one case tested did not react with the immune sheep serum. Cultures from both of these patients showed large numbers of hemolytic streptococci during the fourth week, which were opsonized and agglutinated in high dilutions with the immune serum. Neither patient complained of sore throat, but the tonsils were slightly redder than normal. From one patient hemolytic streptococci were isolated one week later, which were not opsonized or agglutinated by the immune serum. Further studies of scarlet fever patients along these lines must be made. The results so far indicate that the hemolytic streptococci isolated from the throat at the onset of the attack of scarlet fever are immunologically different from most of those obtained during convalescence, and that some of the hemolytic streptococci in complicating lesions may differ immunologically from the streptococci in the acute stage of scarlet fever. These results also suggest that immune sheep serum may be helpful in diagnosing suspected cases of scarlet fever and in determining the length of quarantine for patients with purulent discharges.

ABSORPTION EXPERIMENTS

Absorption experiments were made to determine whether the agglutinins and opsonins could be absorbed by the heterologous streptococci, from scarlet fever and from other sources, as thoroughly as by the immunizing coccus. Immune serum was therefore treated with the homologous and with two other hemolytic streptococci, one from a scarlatinal otitis, the other from erysipelas. The otitis streptococcus was opsonified and agglutinated by the untreated immune sheep serum. Killed centrifuged organisms were suspended in the immune serum, which then was incubated two hours and refrigerated for twenty-four hours, and finally centrifuged, the supernatant serum being removed. This process was repeated three times, when the serum was found no longer to opsonify or agglutinate the immunizing coccus. Absorption with the two scarlet fever streptococcus strains removed the opsonins and agglutinins for the nineteen scarlet fever streptococcus strains tested, but absorption with the erysipelas streptococcus failed to remove the opsonins and agglutinins for the scarlet fever streptococci. These results indicate clearly that the hemolytic streptococci that prevail in the throat in the acute stages of scarlet fever form a group immunologically closely related and apparently peculiar for scarlet fever.

CONCLUSIONS

The serum of sheep immunized with hemolytic streptococci from the throat in the acute stage of scarlet fever has been found to contain opsonins and agglu-

tinins for the hemolytic streptococci that prevail in the throat and complicating lesions early in this disease but not for hemolytic streptococci from other sources such as erysipelas, mastoiditis, measles, influenza, diphtheria and the normal throat. The results of absorption tests also indicate that the hemolytic streptococcus from scarlet fever forms a distinct group, scarlatinal streptococci removing the opsonins and agglutinins for these cocci, while absorption with a hemolytic streptococcus from erysipelas has no such effect.

These results suggest that the hemolytic streptococcus of scarlet fever form a distinct group from the immunologic point of view. Possibly the serum produced with this scarlatinal streptococcus group may prove of use in the diagnosis and treatment of scarlet fever, and eventually, perhaps, in determining the length of infectivity.

Clinical Notes, Suggestions, and New Instruments

A CASE OF UNUSUAL URINARY CALCULI

AUGUSTUS HARRIS, M.D., BROOKLYN

The stones shown in the accompanying illustration were removed from the bladder of a patient suffering from prostatism, and their unusual form prompted me to present the case.



Urinary calculi, about half their actual size.

REPORT OF CASE

A rather feeble man, aged 75, was admitted to the urologic service at the Kings County Hospital, Feb. 1, 1920, suffering with an attack of acute retention of urine. He stated that an ambulance surgeon from another hospital had tried for two hours to pass instruments into the bladder without success.

On admission, the patient appeared weak and was suffering severe pain. The pulse was irregular and of poor volume. Two members of the house staff tried to catheterize but failed. There was moderate bleeding from the urethra, and apparently a false passage had been made. The prostate was markedly enlarged, smooth, and fairly hard. On account of the patient's general condition, an emergency suprapubic one-step drainage operation was immediately decided on.

Stovain spinal anesthesia was employed. I opened the bladder, and about 16 ounces of bloody urine were evacuated. On exploration, the bladder was found hypertrophied and trabeculated. No large pockets were discovered. Lying free on the floor of the bladder behind the prostate were five stones, four of which are depicted in the illustration. These were removed, and the bladder and tissues closed about the drainage tube in the usual manner.

The stones were light brown, smooth, and of light weight. They were shiny on the surface, as if varnished. The main body of each was round, and from it projected spines with smooth, rounded ends. They resembled rather closely a handful of jackstones, with which little girls play.

An analysis of one of the stones disclosed lamination on cross section. Microscopically, there were uric acid crystals and amorphous urates. Chemically, there was a mixture of uric acid, urates, xanthin and carbonates. The stones in the illustration are just about half their actual size. It would be interesting to know how these calculi took on this curious form.

The urine was alkaline in reaction.

306 Park Place.

PROCEEDINGS OF THE NEW ORLEANS SESSION

MINUTES OF THE SEVENTY-FIRST ANNUAL SESSION OF THE AMERICAN
MEDICAL ASSOCIATION, HELD AT NEW ORLEANS, APRIL 26-30, 1920

(Continued from page 1328)

MINUTES OF THE SECTIONS

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, APRIL 28—AFTERNOON

The section was called to order at 2 o'clock by the chairman, Dr. James S. McLester, Birmingham, Ala.

Dr. McLester read the chairman's address, entitled "Clearness in Medical Speech."

Dr. Henry S. Plummer, Rochester, Minn., read a paper on "The Clinical Interpretation of Basal Metabolic Rate Estimations." Discussed by Drs. Emil Goetsch, Brooklyn; Leonard G. Rowntree, Minneapolis; Nelson W. Janney, Santa Barbara, Calif., and H. S. Plummer, Rochester, Minn.

Dr. Frank Billings, Chicago, nominated for Honorary Fellowship Sir Humphry D. Rolleston, London, England. Seconded and carried.

Drs. Rollin T. Woodyatt and William D. Sansum, Chicago, presented a paper on "The Nature of Fever." Discussed by Drs. W. S. Thayer, Baltimore, Alexander Lambert, New York; L. G. Rowntree, Minneapolis; Francis M. Pottenger, Monrovia, Calif., and R. T. Woodyatt, Chicago.

Dr. George Dock, St. Louis, nominated for Honorary Fellowship Dr. Twaho Tsuchiya, Tokyo, Japan. Seconded and carried.

Dr. Stewart R. Roberts, Atlanta, Ga., read a paper on "Types and Treatment of Pellagra." Discussed by Drs. Jarvin L. Graves, Galveston, Texas; Allen Eustis, New Orleans; Henry S. Plummer, Rochester, Minn.; George Dock, St. Louis; W. K. Sheddin, Columbia, Tenn., and S. R. Roberts, Atlanta, Ga.

Dr. Bryce W. Fontaine, Memphis, Tenn., read a paper on "The End-Results of Focal Infections." Discussed by Drs. Frank Billings, Chicago; Joseph H. Pratt, Boston; Frank B. Wynn, Indianapolis; W. S. Thayer, Baltimore; Leon L. Solomon, Louisville, Ky.; Carleton Dederer, Bay City, Mich., and B. W. Fontaine, Memphis, Tenn.

Dr. Charles F. Hoover, Cleveland, read a paper on "The Clinical Diagnosis of Obstruction of the Hepatic Veins." Discussed by Sir Humphry Rolleston, London, England; Dr. Frank B. Wynn, Indianapolis, and Dr. C. F. Hoover, Indianapolis.

Dr. William Gerry Morgan, Washington, D. C., read a paper on "Phlebectasis of the Diaphragmatic Area and of the Lower Thoracic and Upper Abdominal Regions." Discussed by Drs. J. Russell Verbrycke, Jr., Washington, D. C.; Charles F. Hoover, Cleveland; Louis J. Genella, New Orleans; Frank Billings, Chicago; William S. Thayer, Baltimore, and W. G. Morgan, Washington, D. C.

THURSDAY, APRIL 29—AFTERNOON

The section was called to order at 2 o'clock by the chairman.

Sir Humphry D. Rolleston, London, England, read a paper on "Changes in the Clinical Types of Disease." No discussion.

Dr. U. J. W. Peters, Birmingham, Ala., read a paper on "Abscess of the Lung." Discussed by Drs. Charles F. Hoover, Cleveland; O. M. Gilbert, Boulder, Colo.; C. J. Fishman, Oklahoma City; A. C. Eustis, New Orleans, and U. J. W. Peters, Birmingham, Ala.

Dr. George Dock, St. Louis, read a paper on "Oxycephaly: Its Occurrence in Negroes." Discussed by Dr. Stewart R. Roberts, Atlanta, Ga.

Drs. Howard F. West and Joseph H. Pratt, Boston, presented a paper on "Clinical Experience with a Standardized Dried Aqueous Extract of Digitalis." Discussed by Drs. G. Canby Robinson, Nashville, Tenn., and C. F. Wahrer, Fort Madison, Iowa.

Dr. John Peter Schneider, Minneapolis, read a paper on "A Study of the Bile Pigments in Pernicious Anemia." Discussed by Drs. Leonard G. Rowntree, Minneapolis; F. J. Hirschboeck, Duluth, Minn.; Llewellyn Sale, St. Louis, and F. P. Schneider, Minneapolis.

Dr. Douglas VanderHoof, Richmond, Va., read a paper on "Spondylitis and Abdominal Pain." Discussed by Drs. Gustave Roussy, Paris France (translated by Dr. William S. Thayer, Baltimore); Sir Humphry D. Rolleston, London, England, and Douglas VanderHoof, Richmond, Va.

Dr. W. L. Bierring, Des Moines, Iowa, nominated for Honorary Fellowship Dr. Gustave Roussy, Paris, France. Seconded and carried.

Dr. Eugene S. Kilgore, San Francisco, read a paper on "The Influence of Quantitative Methods in the Advance of Clinical Medicine." Discussed by Drs. Henry A. Christian, Boston, and E. S. Kilgore, San Francisco.

FRIDAY, APRIL 30—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

Dr. Charles Spencer Williamson, Chicago, read a paper on "Gout: A Clinical Study of One Hundred and Sixteen Cases." Discussed by Dr. Walter L. Bierring, Des Moines, Iowa; Sir Humphry D. Rolleston, London, England; Alexander Lambert, New York, and C. S. Williamson, Chicago.

The chairman announced that Dr. G. Canby Robinson had resigned as secretary of the section for reasons which were beyond his control.

It was moved, seconded and carried that Dr. Robinson's resignation be accepted with regret.

The following officers were elected: chairman, Dr. Henry S. Plummer, Rochester, Minn.; vice chairman, Dr. G. Canby Robinson, Nashville, Tenn.; secretary, Nellis B. Foster, New York; delegate, Dr. James S. McLester, Birmingham, Ala.

Dr. James E. Paullin, Atlanta, Ga., read a paper on "Renal Glycosuria." Discussed by Drs. Nelson W. Janney, Santa Barbara, Calif.; Albert A. Hornor, Jr., Boston; Allan Eustis, New Orleans, and J. E. Paullin, Atlanta, Ga.

Drs. Nelson W. Janney, Santa Barbara, Calif., and Robert R. Newell, San Francisco, presented a paper on "The Treatment of Diabetes Complicated by Pulmonary Tuberculosis." Discussed by Drs. Francis M. Pottenger, Monrovia, Calif.; F. M. Allen, New York; William C. Voorsanger, San Francisco; L. J. Genella, New Orleans, and N. W. Janney, Santa Barbara, Calif.

Dr. William Engelbach, St. Louis, read a paper on "Arterial Hypertension Associated with Endocrine Dyscrasia." Discussed by Dr. Francis M. Pottenger, Monrovia, Calif.; Prof. Gustave Roussy, Paris, France, and Drs. C. J. Fishman, Oklahoma City; F. M. Allen, New York; William S. Thayer, Baltimore, and William Engelbach, St. Louis.

Dr. Loyd Thompson, Hot Springs, Ark., read a paper on "Syphilis of the Kidney." Discussed by Drs. John Witherpoon, Nashville, Tenn.; William H. Mercur, Pittsburgh, and J. B. McElroy, Memphis, Tenn.

Dr. William P. St. Lawrence, New York, read a paper on "The Effect of Tonsillectomy on the Recurrence of Acute

Rheumatic Fever and Chorea in Children." Discussed by Drs. Lewis A. Conner, New York; Alexander Lambert, New York, and W. P. St. Lawrence, New York.

Dr. W. R. Taylor, Fort Recovery, Ohio, presented the following resolution:

Resolved, That the members of the American Medical Association return their heartfelt thanks to the civil officers of the state of Louisiana, to those of the city of New Orleans, to the officers of the state medical society of this splendid state, and especially to the members of the Orleans Parish Medical Societies, and to all of the people of this city, rich in the history of our common country, for the magnificent manner in which they have instructed and entertained us.

On motion, duly seconded and carried, the foregoing resolution was adopted by the section.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Dean D. Lewis, Chicago.

The following papers were read as a symposium on the "Thyroid":

Dr. James T. Mason, Seattle: "One Hundred Goiter Operations: Mistakes in Retrospect."

Dr. Frank H. Lahey, Boston: "Diagnosis and Management of Intrathoracic Thyroid Growths."

Dr. Joseph R. Eastman, Indianapolis: "Advantages of Local Anesthesia in Thyroid Operations."

Dr. Willard Bartlett, St. Louis: "Technic of Thyroidectomy."

These four papers were discussed by Drs. Henry S. Plummer, Rochester, Minn.; Emil Goetsch, Brooklyn; Edward G. Jones, Atlanta, Ga.; A. J. Ochsner, Chicago; Andre Crotti, Columbus, Ohio; M. L. Harris, Chicago; G. W. Crile, Cleveland; James T. Mason, Seattle; Frank H. Lahey, Boston; Joseph R. Eastman, Indianapolis, and Willard Bartlett, St. Louis.

Dr. Joseph C. Bloodgood, Baltimore, read a paper on "Chronic Cystic Mastitis." Discussed by Drs. William C. MacCarty, Rochester, Minn., and Joseph C. Bloodgood, Baltimore.

Dr. Alfred W. Adson, Rochester, Minn., read a paper on "Brain Abscess."

Dr. George J. Heuer, Baltimore, read a paper on "Surgical Experiences with an Intracranial Approach to Chiasmal Lesions."

These two papers were discussed by Drs. H. R. Donaldson, Atlanta, Ga.; G. M. Dorrance, Philadelphia; Alfred W. Adson, Rochester, Minn., and George J. Heuer, Baltimore.

Dr. Francis Le S. Reder, St. Louis, read a paper on "Hemangioma and Lymphangioma: Their Response to the Injection of Boiling Water." Discussed by Drs. Rudolph Matas, New Orleans; Vilray P. Blair, St. Louis, and Francis Le S. Reder, St. Louis.

THURSDAY, APRIL 29—MORNING

The meeting was called to order by the chairman.

Dr. Dean D. Lewis, Chicago, read the chairman's address.

Dr. Alexander Primrose, Toronto, read a paper on "Squamous-Cell Carcinoma of the Kidney." Discussed by Drs. A. D. Bevan, Chicago; W. J. Mayo, Rochester, Minn.; J. J. Gilbride, Philadelphia; A. J. Ochsner, Chicago, and Alexander Primrose, Toronto.

The chairman appointed Drs. Wallace I. Terry, San Francisco, and Willard Bartlett, St. Louis, to serve on the executive committee in the absence of Drs. W. D. Haggard, Nashville, Tenn., and E. Starr Judd, Rochester, Minn.

Dr. William A. Downes, New York, read a paper on "Congenital Hypertrophic Pyloric Stenosis in Infants: Review of One Hundred and Seventy-five Cases in Which the Fredet-Rammstedt Operation Was Performed." Discussed by Drs. Dean D. Lewis, Chicago; Roland Hill, St. Louis; A. A. Straus, Chicago; L. T. Le Wald, New York; A. D. Bevan, Chicago; J. L. Ransohoff, Cincinnati; W. A. Downes, New York, and A. D. Bevan, Chicago.

Dr. Wallace I. Terry, San Francisco, read a paper on "Ulcer of the Jejunum Following Gastro-Enterostomy." Discussed by Drs. J. Shelton Horsley, Richmond, Va.; W. J. Mayo, Rochester, Minn.; A. J. Ochsner, Chicago; A. A. Strauss, Chicago, and W. I. Terry, San Francisco.

Dr. A. D. Bevan, Chicago, read a paper on "Surgery of Cancer of the Large Intestine."

Dr. G. W. Crile, Cleveland, read a paper on "Operation for Carcinoma of the Rectum."

These two papers were discussed by Drs. Daniel F. Jones, Boston, and W. J. Mayo, Rochester, Minn.

At the request of the chairman the session was addressed by the following distinguished guests: Col. H. J. Waring, Royal College of Surgeons, London; Dr. E. E. Desmares, professor of surgery, University of Paris, and Dr. Jule Voncken, Liège, Belgium.

Drs. Arthur Stein and William H. Stewart, New York, presented a paper on "Roentgenologic Experience with Pneumoperitoneum." Discussed by Drs. George E. Pfahler, Philadelphia; B. H. Orndoff, Chicago, and W. H. Stewart, New York.

Dr. Walter Lathrop, Hazleton, Pa., read a paper on "Ether Oil Colonic Anesthesia." Discussed by Drs. James T. Gwathmey, New York; Alexander Primrose, Toronto; J. Shelton Horsley, Richmond, Va.; G. W. Crile, Cleveland, and Walter Lathrop, Hazleton, Pa.

FRIDAY, APRIL 30—MORNING

The meeting was called to order at 9 o'clock by the vice chairman, Malvern B. Clopton, St. Louis.

The following officers were elected: Chairman, Dr. George P. Muller, Philadelphia; vice chairman, Dr. Edward Clarence Moore, Los Angeles; secretary, Dr. Urban Maes, New Orleans; delegate, Dr. R. P. Sullivan, New York; alternate, Dr. D. F. Jones, Boston.

Dr. Evarts A. Graham, St. Louis, read a paper on "Importance of the 'Vital Capacity' in Thoracic Surgery."

Dr. John L. Yates, Milwaukee, read a paper on "Prevention and Treatment of Pleurisy."

Dr. Carl Eggers, New York, read a paper on "Observations on the Relative Value of the Various Operative Procedures Employed in Acute Empyema."

These three papers were discussed by Drs. Alexander Lambert, New York; Martin B. Tinker, Ithaca, N. Y.; Arvir E. Mazingo, Indianapolis; James F. Mitchell, Washington, D. C.; Moses Behrend, Philadelphia; C. D. Lockwood, Pasadena, Calif.; George J. Heuer, Baltimore; T. T. Thomas, Philadelphia; Carl A. Hedblom, Rochester, Minn.; H. M. Richter, Chicago; Rosalie Slaughter Morton, New York; John B. Haeberlin, Chicago; E. A. Graham, St. Louis; John L. Yates, Milwaukee, and Carl Eggers, New York.

Dr. Addison G. Brenizer, Charlotte, N. C., read a paper on "The Use of Bone and Fascia Grafts in the Reconstruction of Bones and Joints."

Dr. Paul B. Magnuson, Chicago, read a paper on "Mechanical Stability of Fractures Following Operation."

These two papers were discussed by Drs. Harry M. Sherman, San Francisco; E. W. Ryerson, Chicago; W. R. Culberson, Chicago; T. Turner Thomas, Philadelphia; Paul J. McIlhenny, New Orleans; A. G. Brenizer, Charlotte, N. C., and Paul B. Magnuson, Chicago.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

WEDNESDAY, APRIL 28—AFTERNOON

The chairman, Dr. Reuben Peterson, Ann Arbor, Mich., called the meeting to order at 2 o'clock.

Dr. Reuben Peterson, Ann Arbor, Mich., read the chairman's address entitled "The Future of Obstetrics and Gynecology as a Specialty."

Dr. Arthur H. Curtis, Chicago, read a paper on "Chronic Leukorrhea: Its Pathology and Treatment." Discussed by Drs. Francis Le S. Reder, St. Louis; T. J. Watkins, Chicago; Peter B. Salatch, New Orleans, and Arthur H. Curtis, Chicago.

Dr. William J. Mayo, Rochester, Minn., read a paper on "Conservation of the Menstrual Function." Discussed by Drs. C. Jeff Miller, New Orleans; John O. Polak, Brooklyn; Robert T. Morris, New York; A. J. Ochsner, Chicago, and W. J. Mayo, Rochester, Minn.

Dr. Emil Novak, Baltimore, read a paper on "Relation of Hyperplasia of the Endometrium to So-Called Functional Uterine Hemorrhage." Discussed by Drs. Lucius E. Burch, Nashville, Tenn.; Henry P. Newman, San Diego, Calif., and Emil Novak, Baltimore.

Dr. John O. Polak, Brooklyn, read a paper on "A Plea for Total Hysterectomy in the Operative Treatment of Fibroid Tumors of the Uterus in Parous Women." Discussed by Drs. E. E. Montgomery, Philadelphia; Albert Goldspohn, Chicago; William Kohlmann, New Orleans; A. C. Scott, Temple, Texas, and John O. Polak, Brooklyn.

Dr. William W. Grant, Denver, read a paper on "Hernia of the Ovary." Discussed by Drs. George H. Lee, Galveston, Texas; Albert Goldspohn, Chicago, and William W. Grant, Denver.

The chairman announced that the following distinguished physicians were attending the Association session: Col. H. Waring, Royal College of Surgeons, England; Dr. E. E. Demarest, professor of surgery, University of Paris, and Dr. Jules Voncken, Liège, Belgium. On motion by Dr. Arthur H. Curtis, Chicago, duly seconded and carried, these gentlemen were elected to honorary fellowship and invited to participate in the proceedings.

Dr. John M. Maury, Memphis, Tenn., read a paper on "Results of the Exposure of Animal Ovaries to the Rays of Radium." Discussed by Drs. Henry Schmitz, Chicago, and John M. Maury, Memphis, Tenn.

THURSDAY, APRIL 29—AFTERNOON

The chairman called the meeting to order at 2 o'clock.

Dr. Mathias J. Seifert, Chicago, read a paper on "Abnormal Lactation." Discussed by Dr. William Kohlmann, New Orleans.

Dr. Isador C. Rubin, New York, read a paper on "Intra-Uterine Insufflation of Oxygen (Artificial Pneumoperitoneum) for the Determination of Potency of the Fallopian Tubes in Cases of Sterility." Discussed by Drs. J. O. Polak, Brooklyn, and Isador C. Rubin, New York.

Dr. Edward L. King, New Orleans, read a paper on "The Policy of Noninterference in the Treatment of Postabortive and Puerperal Infections." Discussed by Drs. J. O. Polak, Brooklyn, and Edward L. King, New Orleans.

Dr. James M. Mason, Birmingham, Ala., read a paper on "The Management of Acute Appendicitis in the Later Weeks of Pregnancy: Report of Case Treated by Cesarean Section and Appendectomy." Discussed by Drs. Arthur H. Curtis, Chicago; Francis Le S. Reder, St. Louis; David Ross, Indianapolis, and James M. Mason, Birmingham, Ala.

The chairman announced that Dr. T. J. Watkins, Chicago, who had been appointed a substitute on the Executive Committee, had been obliged to leave, and therefore he would appoint Dr. Arthur H. Curtis, Chicago, on the Executive Committee.

FRIDAY, APRIL 30—AFTERNOON

The chairman called the meeting to order at 2 o'clock.

The following officers were elected: chairman, Dr. John O. Polak, Brooklyn; vice chairman, Dr. Lucius E. Burch, Nashville, Tenn.; secretary, Dr. Sidney A. Chalfant, Pittsburgh; delegate, Dr. Edward Reynolds, Boston; alternate, Dr. S. M. D. Clark, New Orleans.

The paper of Dr. Carroll W. Allen, New Orleans, on "An Operation for Pruritus of the Vulva and Anus," was read by Dr. E. Denegre Martin, New Orleans. Discussed by Dr. Denegre Martin, New Orleans.

Dr. Richard R. Smith, Grand Rapids, Mich., read a paper on "Prolapse of the Urethra in the Female." Discussed by Drs. S. M. D. Clark, New Orleans; F. F. Lawrence, Columbus, Ohio; Arthur H. Curtis, Chicago, and Richard R. Smith, Grand Rapids, Mich.

Dr. John J. Gilbride, Philadelphia, read a paper on "Cysts of the Pancreas." Discussed by Drs. A. C. Scott, Temple,

Texas; Moses Behrend, Philadelphia, and Marcell Hartwig, Los Angeles.

Dr. Moses Behrend, Philadelphia, read a paper on "An Improved Technic for Cholecystectomy Based on an Anatomic Study." Discussed by Drs. A. C. Wood, Philadelphia; J. B. Haeberlin, Chicago; M. J. Seifert, Chicago; J. J. Gilbride, Philadelphia; E. P. Quain, Bismarck, N. D.; H. M. Richter, Chicago, and Moses Behrend, Philadelphia.

Dr. Edgar P. Hogan, Birmingham, Ala., read a paper on "Appendicitis Caused by Amebae Dysenteriae: Postoperative Perforation of an Amebic Ulcer of the Cecum." Discussed by Drs. J. B. Haeberlin, Chicago, and Edgar P. Hogan, Birmingham, Ala.

SECTION ON OPHTHALMOLOGY

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. Allen Greenwood, Boston.

Dr. Allen Greenwood, Boston, read the chairman's address, entitled "Postgraduate Ophthalmology."

Dr. James Bordley, Jr., Baltimore, read a paper on "Optic Nerve Disturbances in Diseases of the Posterior Nasal Sinuses."

Dr. Edward C. Ellett, Memphis, Tenn., read a paper on "Optic Neuritis Associated with Disease of the Nasal Sinuses."

These two papers were discussed by Drs. George E. de Schweinitz, Philadelphia; Lee M. Francis, Buffalo; William C. Posey, Philadelphia; Harry S. Gradle, Chicago; Samuel G. Higgins, Milwaukee; Hiram Woods, Baltimore; Harold Bailey, Springfield, Mo.; H. B. Lemere, Omaha; Herbert Moulton, Fort Smith, Ark., and Nelson M. Black, Milwaukee.

Dr. J. Herbert Claiborne, New York, read a paper on "Ocular Symptoms in Exophthalmic Goiter." Discussed by Drs. Albert E. Bulson, Jr., Fort Wayne, Ind.; W. H. Wilder, Chicago; Edward Jackson, Denver, and J. Herbert Claiborne, New York.

Drs. Walter B. Lancaster, Boston; Francis L. Burnett, Boston, and Louis H. Gaus, Boston, presented a paper on "Mercurochrome-220: A Clinical and Laboratory Report on Its Use in Ophthalmology." Discussed by Drs. J. Herbert Claiborne, New York; George S. Derby, Boston; Hiram Woods, Baltimore; Benjamin F. Travis, Chattanooga, Tenn., and Walter B. Lancaster, Boston.

THURSDAY, APRIL 29—MORNING

The meeting was called to order at 9:10 by the chairman.

Dr. J. Herbert Claiborne, New York, presented a pair of bifocal cataract glasses.

Sylvester J. Beach, Augusta, Maine, presented a rapid clinical perimeter.

Dr. J. Ellis Jennings, St. Louis, presented a new lantern for the detection of color blindness.

Dr. Lawrence T. Post, St. Louis, presented a thermaphor devised by Dr. William E. Shahan, St. Louis.

Dr. E. A. Robin, New Orleans, presented a colored woman, aged 31, whose vision had been failing for eight years, and asked for a diagnosis.

Dr. Sidney L. Olsho, Philadelphia, presented a new trial frame with more delicately adjusted tilting temples for use in spectacle and eye-glass fitting.

Dr. Edward J. Curran, Kansas City, Mo., read a paper on "Peripheral Iridectomy in Chronic Glaucoma." Discussed by Drs. William Zentmayer, Philadelphia; Harold Bailey, Springfield, Mo.; Meyer Wiener, St. Louis, and Edward J. Curran, Kansas City, Mo.

Drs. Lawrence Post, St. Louis, and William E. Shahan, St. Louis, presented a paper on "Thermaphor Studies in Glaucoma." Discussed by Drs. John O. McReynolds, Dallas, Texas; George S. Derby, Boston, and Lawrence Post, St. Louis.

Dr. Harry H. Stark, El Paso, Texas, read a paper on "Diagnosis of Chronic Intra-Ocular Tuberculosis." Discussed by Drs. William C. Finnoff, Denver; Walter R. Parker, Detroit; Edward Jackson, Denver; Harry S. Gradle,

Chicago; Hiram Woods, Baltimore; George S. Derby, Boston, Harry H. Stark, El Paso, Texas.

Dr. Arthur J. Bedell, Albany, N. Y., read a paper on "Ethylhydrocuprein in Diseases of the Eye." Discussed by Drs. Harry S. Gradle, Chicago; Edward C. Ellett, Memphis, Tenn.; James M. Patton, Omaha; William Zentmayer, Philadelphia; Lewis H. Taylor, Wilkes-Barre, Pa.; Harry H. Stark, El Paso, Texas; Lee M. Francis, Buffalo; William C. Finnoff, Denver; Allen Greenwood, Boston, and Arthur J. Bedell, Albany, N. Y.

Dr. Marcus Feingold, New Orleans, read a paper on "Peripheral Communicating Vessels Between Retina and Choroid, with Remarks on Fold of the Inner Limiting Membrane in Certain Cases of Chorioretinitis." Discussed by Drs. Edward Jackson, Denver; Edward C. Ellett, Memphis, Tenn., and Charles A. Bahn, New Orleans.

FRIDAY, APRIL 30—MORNING

The meeting was called to order at 9:15 by the chairman.

Dr. Allen Greenwood made a verbal report for the Committee on Preparation of Compensation Tables, and asked that this committee be dissolved. It was moved by Dr. C. D. Wescott, Chicago, that the present committee be dissolved and a new committee appointed by the chairman. Motion seconded and carried.

Dr. Edward Jackson, Denver, read the report of the Committee on Standardization of Undergraduate Teaching of Ophthalmology. It was moved by Dr. C. D. Wescott, Chicago, that this report be accepted and the committee discharged, with the thanks of the section. Motion seconded and carried.

Dr. George S. Derby, Boston, read a letter from the Committee on Conferring the Knapp Medal, stating that the committee had decided that it was unable to confer the medal this year, as the papers presented at the last meeting of the section did not reach the required standard. This report was accepted without vote.

Dr. Lucien Howe, Buffalo, made a report for the Committee on the Study of Ocular Muscles. Moved by Dr. Robert H. T. Mann, Texarkana, Ark., that this report be accepted and the committee continued. Motion seconded and carried.

Dr. Lucien Howe, Buffalo, made a report for the Committee on the Prevention of Hereditary Blindness. Moved by Dr. Walter R. Parker, Detroit, that the report be accepted and the committee continued. Motion seconded and carried.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., made a report for the Committee for the Study of Local Anesthesia. Moved by Dr. Robert H. T. Mann, Texarkana, Ark., that the report be accepted and the committee continued. Motion seconded and carried.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., read the report of the Committee on the Knapp Testimonial. Moved by Dr. C. D. Wescott, Chicago, that the report be accepted and the committee continued. Motion seconded and carried.

Dr. William H. Wilder, Chicago, read a report for the Committee on International Congress of Ophthalmologists. Moved by Dr. C. D. Wescott, Chicago, that the report be accepted and the committee continued. Motion seconded and carried.

Dr. Edward Jackson, Denver, read the report of the Committee on Ophthalmologic Examinations. Moved by Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., that the report be accepted and the committee continued. Motion seconded and carried.

Dr. William C. Posey, Philadelphia, read the report of the Committee on the Ultraviolet and Visible Transmission of Eye-Protective Glasses. Moved by Dr. W. B. Lancaster, Boston, that the report be adopted, and the committee continued, and asked to make a statement showing under what conditions such lenses are wisely prescribed by ophthalmologists; also that this report be printed in the transactions. Motion seconded and carried.

Dr. Henry D. Bruns, New Orleans, offered a resolution asking that this section devise ways and means for the correct diagnosis of follicular trachoma. Moved by Dr. Edward C. Ellett, Memphis, Tenn., that this resolution be

referred to a committee of three, to be appointed by the chairman, which committee shall investigate and report at the next session of this section. Motion seconded and carried.

Dr. George S. Derby, Boston, then read the standing rules and regulations governing the section.

Dr. William Zentmayer, Philadelphia, presented the following report for the executive committee:

The executive committee recommends the adoption of the rules as read with the following amendments:

The time allowed for the presentation of a paper before the section shall be limited to ten minutes. The speaker appointed to open the discussion shall be allowed ten minutes, with the exception that the time may be extended by unanimous consent of those present when the speaker is an invited guest of the section. The Executive Committee further recommends:

That our delegate to the House of Delegates be instructed to inform the House that it is the sense of the Executive Committee that the three-session plan should be given a further trial to determine whether or not it should be permanently adopted.

The Executive Committee further recommends that the section inform the Trustees that at the present time the allowance made to the secretary is insufficient to pay the expenses incurred and that they be requested to increase the allowance to meet the present needs of the secretary.

The executive committee recommends for nomination the following officers for this section: chairman, James Bordley, Jr., Baltimore; vice chairman, Marcus Feingold, New Orleans; delegate, Lee M. Francis, Buffalo, and member examining board, Albert E. Bulson, Jr., Fort Wayne, Ind.

Moved by Dr. Nelson M. Black, Milwaukee, that the secretary be instructed to incorporate into the rules of this section such of these rules as are not at present in force. Motion seconded and carried.

Moved by Dr. Henry D. Bruns, New Orleans, that the paragraph of the report relating to the instructions to the delegate to the House be adopted. Motion seconded and carried.

Moved by Dr. William C. Posey, Philadelphia, that the secretary be instructed to cast the unanimous ballot of the section for the officers named in the report. Motion seconded and carried.

Moved by Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., that it is the sense of the Section on Ophthalmology that discussions of papers shall be submitted to the discussants for correction before they are published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION; also that THE JOURNAL shall print the minutes of the executive session, after they have been submitted to the secretary of the section for revision. Motion seconded and carried.

Moved that Drs. Walter R. Parker, Detroit; Lee M. Francis, Buffalo, and Lewis H. Taylor, Wilkes-Barre, Pa., be made the Committee on Awards. Motion seconded and carried.

Moved by Dr. William Zentmayer, Philadelphia, that a committee be appointed to draw up suitable resolutions relative to the death of Dr. Samuel D. Risley, Philadelphia. Motion seconded and carried. The chairman appointed on this committee: Drs. George E. de Schweinitz, Philadelphia; William Zentmayer, Philadelphia, and G. Oram Ring, Philadelphia.

Executive session adjourned.

Dr. Lucien Howe, Buffalo, read a paper on "The Coefficient of Thermal Conductivity of Eye and Orbit Measured with Cold Applications." Discussed by Drs. Edward Jackson, Denver; Walter B. Lancaster, Boston, and Lucien Howe, Buffalo.

The new chairman, Dr. James Bordley, Jr., presided during the rest of the session.

Dr. William L. Benedict, Rochester, Minn., read a paper on "Early Diagnosis of Pituitary Tumor with Ocular Phenomena." Discussed by Drs. F. Phinzy Calhoun, Atlanta, Ga.; George E. de Schweinitz, Philadelphia; Alfred W. Adson, Rochester, Minn.; Walter R. Parker, Detroit; Allen Greenwood, Boston; George S. Derby, Boston; William Zentmayer, Philadelphia, and William L. Benedict, Rochester, Minn.

Dr. Herbert Moulton, Fort Smith, Ark., read a paper on "Sympathetic Ophthalmia: Report of Four Cases in Which the Condition Was Treated with Large Doses of Sodium Salicylate." Discussed by Drs. James M. Patton, Omaha;

John A. Donovan, Butte, Mont.; E. H. Frederick Frisch, Atlantic City, N. J.; Hugh M. Lokey, Atlanta, Ga., and Herbert Moulton, Fort Smith, Ark.

Drs. Meyer Wiener, St. Louis, and William E. Sauer, St. Louis, presented a paper on "A New Operation for the Relief of Dacryocystitis Through the Nasal Route." Discussed by Drs. William H. Wilder, Chicago; Walter B. Lancaster, Boston; William L. Benedict, Rochester, Minn.; William C. Posey, Philadelphia; Louis D. Green, San Francisco; Earl Whedon, Sheridan, Wyo., and Meyer Wiener, St. Louis.

Dr. John M. Wheeler, New York, read a paper on "Restoration of the Margin and Neighboring Portion of the Eyelid by a Free Graft from the Lower Part of the Eyebrow and the Skin Directly Below It." Discussed by Drs. Nelson M. Black, Milwaukee; William C. Posey, Philadelphia; Gaylord C. Hall, Louisville, Ky., and John M. Wheeler, New York.

The chairman appointed these committees:

Committee to investigate regarding the diagnosis of follicular trachoma: Drs. Henry D. Bruns, New Orleans; E. A. Robin, New Orleans, and Edward C. Ellett, Memphis, Tenn.

Committee on Compensation: Drs. Nelson M. Black, Milwaukee; Harry S. Gradle, Chicago, and Albert C. Snell, Rochester, N. Y.

SECTION ON LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

WEDNESDAY, APRIL 28—AFTERNOON

The meeting was called to order at 2:15 by the chairman, Dr. Joseph C. Beck, Chicago.

The chairman announced that in the absence of Dr. Greenfield Sluder, St. Louis, Dr. George M. Coates, Philadelphia, would act as a member of the Executive Committee.

Dr. Joseph C. Beck, Chicago, read the chairman's address, entitled "The Future of Otolaryngology."

It was moved by Dr. William B. Chamberlin, Cleveland, that the presentation of reports as well as papers be limited to fifteen minutes. Seconded and carried.

Dr. Ferris N. Smith, Grand Rapids, Mich., read a paper on "Plastic Surgery: Its Relation to the Otolaryngologist."

Dr. Millard R. Arbuckle, East St. Louis, Ill., read a paper on "Plastic Surgery of the Face." Discussed by Drs. George M. Coates, Philadelphia; George M. Dorrance, Philadelphia; Austin A. Hayden, Chicago; Ferris N. Smith, Grand Rapids, Mich., and Millard F. Arbuckle, East St. Louis, Ill.

Dr. Gordon B. New, Rochester, Minn., read a paper on "Mixed Tumors of the Throat, Mouth and Face." Discussed by Drs. Lee W. Dean, Iowa City; Wendell C. Phillips, New York; John F. Barnhill, Indianapolis; T. E. Carmody, Denver, and Gordon B. New, Rochester, Minn.

Dr. John F. Barnhill, Indianapolis, read a paper on "Thyroid Surgery, Especially as Related to Laryngology." Discussed by Drs. Emil Mayer, New York; Norval H. Pierce, Chicago; Joseph C. Beck, Chicago; T. E. Carmody, Denver, and John F. Barnhill, Indianapolis.

Dr. Robert Sonnenschein, Chicago, read a paper on "The Use and Possible Abuse of Radium in the Treatment of Malignant Tumors of the Nose and Throat." Discussed by Drs. William B. Chamberlin, Cleveland; Cullen F. Welty, San Francisco; Joseph D. Heitger, Louisville, Ky.; G. E. Pfahler, Philadelphia; S. G. Higgins, Milwaukee; Albert F. Tyler, Omaha, and Robert Sonnenschein, Chicago.

Dr. Richmond McKinney, Memphis, Tenn., read a paper on "Misleading Symptoms and Roentgen-Ray Findings in Suspected Mastoid Abscess." Discussed by Drs. Francis P. Emerson, Boston; Cullen F. Welty, San Francisco; G. H. Mundt, Chicago; William B. Chamberlin, Cleveland; E. Lee Myers, St. Louis, and Richmond McKinney, Memphis, Tenn.

THURSDAY, APRIL 29—AFTERNOON

The meeting was called to order at 2:10 by the chairman.

Dr. Joseph D. Heitger, Louisville, Ky., read a paper on "Present Status of Neurotology from the Borderline Standpoint." Discussed by Drs. Harold L. Lillie, Rochester, Minn.; George W. MacKenzie, Philadelphia; Lee W. Dean, Iowa City; Julius Grinker, Chicago, and Joseph D. Heitger, Louisville, Ky.

Dr. Eugene R. Carpenter, Dallas, Texas, read a paper on "Intracranial Lesions Involving the Auditory Vestibular Apparatus." Discussed by Drs. Isaac W. Jones, Los Angeles; Harold I. Lillie, Rochester, Minn.; Tom A. Williams, Washington, D. C.; George W. MacKenzie, Philadelphia; Julius Grinker, Chicago, and Eugene R. Carpenter, Dallas, Texas.

Dr. George W. MacKenzie, Philadelphia, read a paper on "Neurolabyrinthitis Syphilitica." Discussed by Drs. George M. Coates, Philadelphia; Norval H. Pierce, Chicago; Cullen F. Welty, San Francisco; Joseph D. Heitger, Louisville, Ky.; William B. Chamberlin, Cleveland; Harry L. Pollock, Chicago; H. B. Lemere, Omaha; E. Lee Myers, St. Louis, and George W. MacKenzie, Philadelphia.

Dr. Francis P. Emerson, Boston, read a paper on "Clinical Manifestations of the Infection of the Lateral Sinus." Discussed by Drs. Cullen F. Welty, San Francisco; John F. Barnhill, Indianapolis; Lee W. Dean, Iowa City; H. H. Martin, Savannah, Ga.; Leon E. White, Boston, and Francis P. Emerson, Boston.

Dr. Cullen F. Welty, San Francisco, read a paper on "New Method of Closing an Enlarged Tooth Root Opening into the Maxillary Antrum." Discussed by Drs. Joseph A. Stucky, Lexington, Ky.; Joseph C. Beck, Chicago, and Cullen F. Welty, San Francisco.

Dr. William V. Mullin, Colorado Springs, Colo., read a paper on "The Indifference of the Laryngologist Toward Tuberculous Laryngitis and the Tuberculosis Problem." Discussed by Drs. John B. McMurray, Washington, Pa.; T. E. Carmody, Denver; Joseph A. Stucky, Lexington, Ky.; Cullen F. Welty, San Francisco; Carl H. McCaskey, Indianapolis, and William V. Mullin, Colorado Springs, Colo.

Moved by Dr. Leon White, Boston, that this section convene Friday afternoon at 1:30 instead of 2 o'clock, and that exhibition of instruments take place before election of officers. Seconded and carried.

FRIDAY, APRIL 30—AFTERNOON

The meeting was called to order at 1:40 by the chairman.

Dr. Joseph L. Goodwin, Tazewell, Tenn., presented combined forceps and bronchoscope.

Dr. Augustus A. Hayden, Chicago, presented a method of tying knots around a mastoid bandage to keep it smooth and prevent the edges from stretching.

Dr. M. M. Culloin, Nashville, Tenn., presented an adenotome that can be also used as a curet, also a pair of bifocal glasses to be used when examining the nose.

The secretary read the report of the Committee on Caustic Alkalis. It was moved by Dr. Charles W. Richardson, Washington, D. C., that the report be accepted and the committee continued. Seconded and carried.

The secretary read the report of the Committee on Undergraduate and Graduate Teaching of Otolaryngology. It was moved by Dr. Charles W. Richardson, Washington, D. C., that the report be accepted and the committee continued. Seconded and carried.

The following officers were elected: chairman, Ross H. Skillern, Philadelphia; vice chairman, Richmond McKinney, Memphis, Tenn.; secretary, William B. Chamberlin, Cleveland; delegate, John F. Barnhill, Indianapolis.

Dr. Emil Mayer, New York, read the report of the Committee on Necrology. It was moved by Dr. William B. Chamberlin that this report be accepted, that the thanks of the section be extended to Dr. Emil Mayer, New York, for his work in preparing this report, and that the members of the section rise for a moment in honor of the departed members. Seconded and carried.

Dr. Charles W. Richardson, Washington, D. C., read the report of the Committee on the Education of the Deaf Child. It was moved by Dr. Wendell C. Phillips, New York, that the report be accepted. Seconded and carried.

Moved by Dr. Wendell C. Phillips, New York, that the scope of this work be extended to include the deaf child as well as the deaf adult, and that the investigations of this committee be carried out along all lines of deafness. Seconded by Dr. Emil Mayer, New York.

Dr. W. B. Chamberlin, Cleveland, offered an amendment to the effect that the committee be increased from three to five

members, and that the investigation include work along the line of education of the deaf adult. Motion seconded and the amended motion carried.

Dr. Emil Mayer, New York, read a special report on local anesthesia by the Committee on Therapeutic Research.

Moved by Dr. Francis P. Emerson, Boston, that the recommendations of the Committee on Local Anesthesia be adopted; that is, that this section endorse the plan for the investigation of new remedies by members of the American Medical Association, when the Council on Pharmacy has concluded its examinations; also that the chairman appoint a permanent committee of four on the toxic effects of local anesthetics, one member to be the secretary of the section, this committee to report at the next annual meeting. Seconded and carried.

The special report of the Committee on Local Anesthesia was discussed by Dr. Rudolph Matas, New Orleans, and Dr. Carroll W. Allen, New Orleans.

Moved by Dr. S. G. Higgins, Milwaukee, that the discussion of papers be limited to those men whose names appear on the program. Seconded and carried.

The discussion of the report of the Committee on Local Anesthesia was closed by Dr. Emil Mayer, New York.

The newly elected chairman, Dr. Ross H. Skillern, Philadelphia, took the chair.

Dr. Leon E. White, Boston, read a paper on "The Diagnosis and Prognosis of Loss of Vision from Accessory Sinus Disease." Discussed by Drs. S. G. Higgins, Milwaukee, and Leon E. White, Boston.

Dr. Owen Smith, Portland, Maine, read a paper on "Harelip and Cleft Palate." Discussed by Dr. T. E. Carmody, Denver.

Dr. Henry H. Briggs, Asheville, N. C., read a paper on "Relative Value of Transillumination and Roentgenography in the Diagnosis of Disease of the Maxillary and Frontal Sinuses; with Description of an Orbitopalatal Route of Transilluminating the Maxillary Sinus." Discussed by Drs. Joseph C. Beck, Chicago, and H. H. Briggs, Asheville, N. C.

Dr. Robert G. Reaves, Greensboro, S. C., read a paper on "Nerve Blocking for Nasal Surgery." Discussed by Drs. H. H. Martin, Savannah, Ga., and by Robert G. Reaves, Greensboro, S. C.

The chairman announced that the Committee on Local Anesthesia would consist of the old committee with the addition of the secretary of the section.

SECTION ON DISEASES OF CHILDREN

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Fritz B. Talbot, Boston.

Dr. Fritz B. Talbot, Boston, read the chairman's address, entitled "The Future of Pediatrics."

The secretary announced the dinner of the section to be held at the Hotel Grunewald, Thursday evening at 7 o'clock. He also announced that Dr. and Mrs. Laurence R. DeBuys, New Orleans, had invited the section to a tea at their home, Thursday afternoon from 4 to 6.

Dr. John Lovett Morse, Boston, read a paper on "The Treatment of Indigestion in Children." Discussed by Drs. L. W. Hill, Boston; C. G. Grulee, Chicago; L. T. Lewald, New York; I. A. Abt, Chicago, and John L. Morse, Boston.

Dr. Harry M. McClanahan, Omaha, read a paper on "The Treatment of Indigestion in Children from Six to Twelve Years of Age." Discussed by Drs. Laurence R. DeBuys, New Orleans; H. D. Chapin, New York; John Lovett Morse, Boston; Lydia Allen DeVilbiss, Washington, D. C.; G. D. Scott, New York; Fred Moore, Des Moines, Iowa, and Harry M. McClanahan, Omaha.

Dr. C. Hilton Rice, Jr., Montgomery, Ala., read a paper on "The Relation of the Acquired Food Dislikes of Childhood to the Ills of Middle Life." Discussed by Drs. William Walton Butterworth, New Orleans; Fritz B. Talbot, Boston; May G. Wilson, New York; O. M. Gilbert, Boulder, Colo., and C. Hilton Rice, Jr., Montgomery, Ala.

Dr. William A. Mulherin, Augusta, Ga., read a paper on "Three Pertinent Questions on Maternal Feeding." Discussed by Dr. John Lovett Morse, Boston; James D. Love, Jacksonville, Fla.; I. A. Van Zandt, Fort Worth, Texas; A. J. Scott, Jr., Los Angeles; L. H. Roddy, Waco, Texas; William Weston, Jr., Columbia, S. C.; Charles James Bloom, New Orleans, and William A. Mulherin, Augusta, Ga.

Dr. Henry Dwight Chapin, New York, read a paper on "How Pediatric Teaching of Nutrition May Affect the Nation's Welfare." Discussed by Drs. John A. Foote, Washington, D. C.; Lewis W. Hill, Boston, and Henry Dwight Chapin, New York.

Dr. George Dow Scott, New York, read a paper on "The Clinical Value of Vegetable Oils in Certain Abnormal Conditions of Infancy and Childhood." No discussion.

THURSDAY, APRIL 29—MORNING

The meeting was called to order at 9 o'clock by the chairman.

Dr. William Weston, Columbia, S. C., read a paper on "Acrodynia." Discussed by Drs. A. H. Byfield, Iowa City; Joseph Goldberger, Washington, D. C., and William Weston, Columbia, S. C.

Drs. Warren R. Sisson and W. Denis, Boston, presented a paper on "Observations on the Salt Content of Breast Milk." Discussed by Dr. Fritz B. Talbot, Boston.

Dr. Lewis Webb Hill, Boston, read a paper on "Chronic Nephritis in Children." Discussed by Drs. C. F. Wahrer, Fort Madison, Iowa; John Lovett Morse, Boston; G. D. Scott, New York; H. M. McClanahan, Omaha, and Lewis Webb Hill, Boston.

Dr. Edgar J. Huenekens, Minneapolis, presented a paper on "Infantile Spinal Progressive Muscular Atrophy (Werdnig-Hoffmann)." Discussed by Drs. Frank C. Neff, Kansas City, Mo.; John Zahorsky, St. Louis, and Edgar J. Huenekens, Minneapolis.

Dr. Richard S. Eustis, Boston, read a paper on "Newer Ideas of Heart Disease Applied to Pediatrics." Discussed by Drs. George D. Scott, New York; Julius H. Hess, Chicago; A. J. Scott, Jr., Los Angeles; John M. Dodson, Chicago; Isaac A. Abt, Chicago, and Richard S. Eustis, Boston.

Dr. May G. Wilson, New York, read a paper on "Circulatory Reactions in Normal Children after Exercise." Discussed by Drs. Alexander Lambert, New York; Maud Loeber, New Orleans; William St. Lawrence, New York; Laurence R. DeBuys, New Orleans; Fritz B. Talbot, Boston; E. C. Fleischner, San Francisco, and May G. Wilson, New York.

Dr. Henry J. Cartin, Johnstown, Pa., read a paper on "Intubation of the Larynx." Discussed by Drs. Isaac A. Abt, Chicago; L. T. Royster, Norfolk, Va.; A. J. Scott, Jr., Los Angeles; George D. Scott, New York; John Zahorsky, St. Louis; John A. Foote, Washington, D. C.; Howard B. Hamilton, Omaha; Solon G. Wilson, New Orleans, and H. J. Cartin, Johnstown, Pa.

FRIDAY, APRIL 30—MORNING

The meeting was called to order at 9 o'clock by the chairman.

The following officers were elected: chairman, Dr. Frank C. Neff, Kansas City, Mo.; vice chairman, Dr. William Weston, Jr., Columbia, S. C.; delegate, Dr. Isaac A. Abt, Chicago.

Dr. Julius P. Sedgwick, Minneapolis, read the subjoined report of the Child Welfare Committee:

Your committee, in submitting its report, desires first to call attention to the resolution adopted at the last annual meeting of the section, wherein its functions are defined:

Resolved, That it is the sense of this meeting that a committee be appointed to consider the question of child welfare more fully during the coming year; that it be instructed to meet with whatever agency it sees fit, submitting its problems to the Council on Health and Public Instruction of the American Medical Association, and to promote the interests of children by bringing the pediatricist of the country into more intimate touch with the movement, by whatever other means may seem expedient.

In June of 1919, after the adjournment of the American Medical Association, a conference was held by your committee with Dr. Anna E. Rude, of the Child Hygiene Division, Children's Bureau, at which

time her attention was called to the attitude of the profession of the country toward the Children's Bureau. A request was made that Miss Julia C. Lathrop of the Children's Bureau should confer with your committee, and representatives of the American Children's Hygiene Association and the American Pediatric Society, in Atlantic City.

This conference was subsequently held, and the two following concurrent criticisms explained to Miss Lathrop: first, that the medical profession was absolutely opposed to the method whereby the state committees for the Children's Year were appointed without any consideration being taken as to the attitude of the medical profession on those appointees; second, that the policy of the Children's Bureau of publishing medical literature under the authorship of lay women was absurd, and conducive to disorganization.

After a plain discussion, it was suggested that the difficulties could be overcome by the appointment to the Child Hygiene Division of the Children's Bureau, of an advisory committee, consisting of one member nominated by the American Medical Association, one member nominated by the American Child Hygiene Association, and one member nominated by the American Pediatric Society.

Inasmuch as the nomination of a member representing the American Medical Association was a function of the Council on Health and Public Instruction, the whole matter was discussed with that council, and the name of Julius H. Hess, suggested by your committee as the representative of the American Medical Association.

Dr. Hess was informed by the Council on Health and Public Instruction, and appointed by Miss Lathrop to this Advisory Committee.

Dr. Julius H. Hess, Chicago, submitted the following report:

Report of the members of the Child Welfare Committee of the Section on Diseases of Children of the American Medical Association, by its nominee to the Advisory Committee to the Division of Child Hygiene of the Children's Bureau:

All of the members of the Advisory Committee, consisting of Richard M. Smith, representing the American Pediatric Society, Dr. Howard C. Carpenter, representing the American Child Hygiene Association, and Dr. Julius H. Hess, representing the American Medical Association, met with Dr. Anna E. Rude, of the Division of Child Hygiene, of the Children's Bureau, in Boston, Oct. 7, 1919. The committee made extensive suggestions for revision of the text of the pamphlet by Dr. Mendenhall on "Infant Feeding." This revised material will probably be submitted to the committee for further suggestions within the next two months. The pamphlet on "Infant Care" by Mrs. Max West has been sent to the members of the committee for advice as to changes in the text, as a preliminary to a meeting of the committee to be held in Chicago, June 3, 1920.

The committee has also suggested the advisability of issuing the pamphlet in the name of the Children's Bureau, with credit for compilation in the preface rather than, as heretofore, on the cover of the pamphlet.

Your committee wishes to express its appreciation for the spirit of cooperation manifested by Dr. Anna E. Rude of the Children's Hygiene Division of the Children's Bureau, toward the Advisory Committee. Only by such cooperation can the best results be achieved.

In view of the tremendous importance of the subject, your section is urged to undertake, through your Child Hygiene Committee, an intensive educational campaign on breast feeding.

Since it seems to be the consensus of opinion of the members of this section that breast feeding should be stressed in every possible way; and inasmuch as there are carried in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION certain advertisements of proprietary infants' foods which are not consistent with this opinion, your committee feels that the matter of their publication should be taken up with the management of THE JOURNAL.

Inasmuch as the various problems in child hygiene require constant attention, your committee further recommends that the chairman-elect of this section appoint a standing committee of five to assume these responsibilities, which committee shall be known as the Child Hygiene Committee on the Section of Diseases of Children of the American Medical Association.

On motion duly made, seconded and unanimously carried, this report was adopted by the section.

Dr. E. C. Fleischner: Mr. Chairman, it has been the custom of the Council on Scientific Assembly of the American Medical Association to hold each year in Chicago a conference with the secretaries of all the sections, in order to have a better understanding of the work of the Scientific Assembly, among the members of the various sections.

The secretary presented the following standing rules to be adopted by the section:

First, no paper shall occupy more than fifteen minutes in its presentation before the section. (Sec. 2, Chap. 11, By-Laws).

"The time allowed for the presentation of a paper before a section shall be limited to fifteen minutes" shall be mandatory, with the exception that the time may be extended by the unanimous consent of those present when the speaker is an invited guest of the section. The section shall not exercise this privilege, to extend the time for the discussion of a paper beyond the time allotted, five minutes, but this time limit shall be mandatory.

Second, with the exception that the reader of the paper may be permitted to close the discussion, a Fellow shall be permitted to take part in the discussion of a paper once and only once.

Third, any Fellow who desires to discuss a paper shall be required to give in writing his name, together with his home and local annual session address to the secretary of the section before he is given the floor. This rule shall be strictly enforced when for the first time in

the annual session a Fellow takes part in the discussions of the section.

Fourth, each author shall hand his paper to the secretary of the section after reading. This requirement shall be amplified and emphasized, and shall be construed to require that each author must present to the secretary of the section a finished copy of his paper before he is permitted to present his contribution to the section.

Fifth, each author shall be required to send one synopsis of his paper to each of those listed in the official program to open the discussion of the paper, and these synopses shall be mailed to those assigned to open the discussions, at least ten days before the first day assigned for the meetings of the section.

Sixth, the secretary of the section shall inform himself as to whether or not each member of the Executive Committee of his section expects to be in attendance at each annual session of the Association, and shall transmit to the chairman of the section the information he receives, reporting both who of the Executive Committee of the section plan to be in attendance, and also who will probably not be present.

Seventh, the secretary of the section shall mail a copy of the rules of the section to each Fellow who is assigned to a place on the program of the section.

Eighth, the rules of the section shall be binding on the secretary of the section, who shall have no option, but must enforce them.

Nine, when two or more sections unite for the purpose of a symposium, the officers of the sections united shall select from among their numbers, a chairman, a secretary and an executive committee of three, and the same shall function as the officers of the joint meeting.

On motion duly seconded and carried, the rules were adopted.

It was moved by Dr. Harry M. McClanahan, Omaha, and was duly seconded and carried, that a committee be appointed to wait on Dr. Franklin P. Gegenbach, Denver, and to report back to the section. The chairman appointed as such committee Drs. Harry M. McClanahan, Omaha, and M. L. Turner, Des Moines, Iowa.

Dr. Isaac A. Abt, Chicago, moved that a committee of two be appointed to draw up an appropriate memorial to Dr. Abraham Jacobi, New York, and to present it at the next annual meeting. Seconded and carried. The chairman appointed as such committee Drs. Isaac A. Abt, Chicago, and H. F. Helmholz, Chicago.

Drs. William E. Carter, San Francisco, and Langley Porter, San Francisco, presented a paper on "Observations on Tumors of the Kidney in Children." Discussed by Dr. L. T. LeWald, New York, Sir Humphry Davy Rolleston, London, England, and Dr. W. E. Carter, San Francisco.

Dr. J. Ross Snyder, Birmingham, Ala., read a paper on "The Temporary Teeth Disorders Due to Their Neglect." Discussed by Drs. Julius P. Sedgwick, Minneapolis; Isaac A. Abt, Chicago; W. L. Funkhouser, Atlanta, Ga.; C. F. Wahrer, Fort Madison, Iowa; Laurence R. DeBuys, New Orleans; Fritz B. Talbot, Boston; E. C. Fleischner, San Francisco, and J. Ross Snyder, Birmingham, Ala.

Dr. Turner reported for the committee appointed to call on Dr. F. P. Gegenbach that the Doctor was improving.

Dr. Frederick C. Rodda, Minneapolis, read a paper on "The Coagulation Time of Blood in the New-Born with Special Reference to Cerebral Hemorrhage." Discussed by Drs. Isaac A. Abt, Chicago; John Foote, Washington, D. C.; Howard B. Hamilton, Omaha, and Frederick C. Rodda, Minneapolis.

Dr. Josiah J. Moore, Chicago, read a paper on "The Antiscorbutic Value of Proprietary Baby Foods." Discussed by Dr. Julius H. Hess, Chicago.

Dr. Hugh McCulloch, St. Louis, read a paper on "Studies of the Effect of Diphtheria Toxin on the Heart." Discussed by Drs. Richard S. Eustis, Boston, and Fritz B. Talbot, Boston.

Dr. Thomas D. Parke, Birmingham, Ala., read a paper on "Intramuscular Blood Injections as Nutritional Aids." Discussed by Dr. Fritz B. Talbot, Boston.

Dr. Robert E. Farr, Minneapolis, read a paper on "Local Anesthesia in Infancy and Childhood." Discussed by Drs. Martin B. Tinker, Ithaca, N. Y.; Edgar J. Huenekens, Minneapolis, and Robert E. Farr, Minneapolis.

Dr. William Weston, Columbia, S. C., moved that the thanks of the section be returned to the officers of this section, and to Dr. Laurence R. DeBuys and the other members of the profession in New Orleans, who had contributed so generously toward the success of this meeting. Seconded and carried.

SECTION ON PHARMACOLOGY AND
THERAPEUTICS

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. George W. McCoy, Washington, D. C.

Dr. George W. McCoy read the chairman's address.

Dr. Cary Eggleston, New York, read a paper on "Clinical Observations on the Absorption of Digitalis." Discussed by Drs. Henry A. Christian, Boston; Leonard G. Rowntree, Minneapolis, and Cary Eggleston, New York.

Drs. Frederick M. Allen, J. W. Mitchell and J. W. Sherrill, New York, presented a paper on "The Treatment of Combined Diabetes and Nephritis." Discussed by Drs. George Norris, Philadelphia; Leonard G. Rowntree, Minneapolis, and F. M. Allen, New York.

Dr. Henry A. Christian, Boston, read a paper on "Deficiencies in Our Methods of Treatment of Chronic Nephritis." Discussed by Drs. Lewellys F. Barker, Baltimore; George Dock, St. Louis; Nelson W. Janney, Santa Barbara, Calif.; Eugene S. Kilgore, San Francisco, and Henry A. Christian, Boston.

The chairman appointed a nominating committee consisting of Drs. J. T. Halsey, New Orleans, chairman; F. M. Allen, New York, and George B. Roth, Washington, D. C.

In the absence of the other members of the executive committee, the chairman appointed Drs. Leonard G. Rowntree, Minneapolis, and Carl Voegtlin, Washington, D. C., to serve with himself on that committee.

The standard rules of the section were read. It was moved and seconded that the rules be adopted as printed and made effective at once. Carried.

THURSDAY, APRIL 29—AFTERNOON

A joint meeting was held with the Section on Dermatology. For a report of the proceedings, see the minutes of that section.

FRIDAY, APRIL 30—MORNING

The meeting was called to order at 9:05 by the chairman, Dr. George W. McCoy, Washington, D. C.

The following officers were elected: chairman, Leonard G. Rowntree, Minneapolis; vice chairman, Carl Voegtlin, Washington, D. C.; secretary, Cary Eggleston, New York (continued); alternate delegate, Robert A. Hatcher, New York; executive committee, W. A. Bastedo, New York; George W. McCoy, Washington, D. C., and L. G. Rowntree, Minneapolis.

Lewis E. Warren, Chicago, and Robert P. Fishelis, Philadelphia, were elected to Associate Fellowship.

Drs. Leonard G. Rowntree, Albert M. Snell and Frances Ford, Minneapolis, presented a paper on "Factors Affecting the Basal Metabolic Rate." Discussed by Drs. Nelson W. Janney, Santa Barbara, Calif.; H. S. Plummer, Rochester, Minn.; B. C. Lockwood, Detroit, and L. G. Rowntree, Minneapolis.

Drs. Gerardo M. Balboni and Paul D. White, Boston, presented a paper on "Clinical Observations on the Digitalis-Like Action of Squills." Discussed by Drs. J. T. Halsey, New Orleans; Cary Eggleston, New York, and G. M. Balloni, Boston.

Drs. Carl Voegtlin and Homer W. Smith, Washington, D. C., presented a paper on "Quantitative Studies in Chemotherapy." Discussed by Drs. George B. Roth, Gleason C. Lake and Carl Voegtlin, Washington, D. C.

SECTION ON PATHOLOGY AND PHYSIOLOGY

WEDNESDAY, APRIL 28—AFTERNOON

The meeting was called to order at 2:15 by the secretary, Dr. J. J. Moore, Chicago. In the absence of the regular chairman, Dr. Howard T. Karsner, Cleveland, Dr. E. R. Le Count, Chicago, was appointed temporary chairman.

Dr. Benjamin Taylor Terry, Nashville, Tenn., read a paper on "Increasing the Pathologist's Usefulness and Rewards." Discussed by Drs. William C. MacCarty, Rochester, Minn., and B. T. Terry, Nashville, Tenn.

Drs. Joseph Goldberger and George A. Wheeler, Washington, D. C., presented a paper on "Experimental Pellagra in White Male Convicts."

Dr. James W. Babcock, Columbia, S. C., read a paper on "Review of the Recent Reports on Pellagra." These two papers were discussed by Drs. Martin F. Engman, St. Louis; Marcus Haase, Memphis, Tenn.; D. W. Kelly, Winnfield, La.; A. A. Herold, Shreveport, La.; Joseph Goldberger, Washington, D. C., and James Babcock, Columbia, S. C.

Dr. Ludvig Hektoen, Chicago, read a paper on "The Toxic Substances Produced by Hemolytic Streptococci." Discussed by Drs. E. R. Le Count, Chicago; Clyde Brooks, Columbus, Ohio, and Ludvig Hektoen, Chicago.

Drs. Clyde Brooks and Albert M. Bleile, Columbus, Ohio, presented a paper on "Recent Advances in Clinical Blood Pressure Measurement." Discussed by Dr. E. S. Kilgore, San Francisco, and Clyde Brooks, Columbus, Ohio.

Dr. William S. Carter, Galveston, Texas, read a paper on "An Experimental Study of Acidosis Produced by Ether Anesthesia." No discussion.

It was moved, seconded and carried that the following applicants be accepted for associate membership: Thesle T. Job, Oak Park, Ill.; Frank P. McNamara, New Haven, Conn., and James W. Jobling, Nashville, Tenn.

It was moved, seconded and carried that the following foreign guests be admitted to honorary membership: Norman Walker, Edinburgh, Scotland; Col. H. J. Waring, London; Sir Humphry D. Rolleston, London; Dr. E. E. Desmarest, Paris; Dr. Gustave Roussy, Paris; Dr. Jules Voncken, Liège, Belgium, and Dr. Iwaho Tsuchiya, Tokyo, Japan.

It was moved, seconded and carried that the standard rules for the section be adopted as printed.

In the absence of the official executive committee, Drs. D. J. Davis, E. R. Le Count and Ludvig Hektoen, all of Chicago, were asked to serve as a committee.

THURSDAY, APRIL 29—AFTERNOON

The meeting was called to order at 2:10 by the secretary, Dr. J. J. Moore, Chicago. Dr. D. J. Davis, Chicago, was asked to serve as temporary chairman.

Dr. James H. Black, Dallas, Texas, read a paper on "The Development of the Bactericidal Power of Whole Blood and of Antibodies in the Serum." Discussed by Dr. D. J. Davis, Chicago.

Dr. D. J. Davis, Chicago, read a paper on "Some Characteristics of Certain Epidemic Micro-Organisms." No discussion.

Dr. Kenneth M. Lynch, Charleston, S. C., read a paper on "Penetration of the Intestine and Formation of Abdominal Abscess by Endameba Histolytica." No discussion.

Dr. Carleton Dederer, Bay City, Mich., read a paper on "Transplantation of the Kidney and Ovary." Discussed by Drs. V. D. Lespinasse, Chicago; William C. MacCarty, Rochester, Minn.; Clyde Brooks, Columbus, Ohio, and Carleton Dederer, Bay City, Mich.

Dr. William C. MacCarty, Rochester, Minn., read a paper on "A Mathematical Terminology for Neoplasia." Discussed by Drs. D. J. Davis, Chicago; Carleton Dederer, Bay City, Mich., and William C. MacCarty, Rochester, Minn.

Dr. Louis A. Turley, Norman, Okla., read a paper on "Chronic Nephritis with Special Reference to the Interstitial Form." Discussed by Dr. Robert H. Blackman, Shreveport, La.

FRIDAY, APRIL 30—AFTERNOON

The meeting was called to order at 2:10 by the secretary, Dr. J. J. Moore, Chicago. Dr. F. F. Russell, Washington, D. C., was appointed temporary chairman.

The nominating committee, consisting of Drs. A. M. Moody, Chicago, and F. S. Graves, Louisville, Ky., reported the following nominations: Chairman, Dr. E. R. Le Count, Chicago; vice chairman, Dr. William S. Carter, Galveston, Texas; secretary, Dr. J. J. Moore, Chicago, and delegate, Dr. James Ewing, New York. On motion duly made and seconded they were declared elected.

Dr. Ward T. Burdick, Denver, read a paper on "The Wassermann Reaction: Prolonged Incubation in the Icebox Versus a Short Period Over the Water Bath." Discussed by Drs. John A. Kolmer, Philadelphia; C. C. Bass, New Orleans, and Ward Burdick, Denver.

Dr. A. M. Moody, Chicago, read a paper on "Bacterial Vaccines, Their Uses and Abuses." Discussed by Drs. G. W. McCoy, Washington, D. C.; James H. Black, Dallas, Texas; H. J. Nichols, Washington, D. C.; J. J. Moore, Chicago; Herman Spitz, Nashville, Tenn., and A. M. Moody, Chicago.

Dr. F. Stuart Graves, Louisville, Ky., read a paper on "The Value of the Postmortem Wassermann Reaction." Discussed by Drs. A. M. Moody, Chicago; Ward Burdick, Denver; R. G. Owen, Detroit; F. F. Russell, Washington, D. C.; John A. Kolmer, Philadelphia; F. M. Johns, New Orleans, and F. S. Graves, Louisville, Ky.

Dr. John J. Seelman, Milwaukee, read a paper on "Observations on the Quantitative Nature of Complement Fixation." Discussed by Drs. Frank J. Hall, Kansas City, Mo.; Ward Burdick, Denver; F. S. Graves, Louisville, Ky.; W. C. Jones, Birmingham, Ala., and J. J. Seelman, Milwaukee.

Drs. W. Warner Watkins and Clarence N. Boynton, Phoenix, Ariz., presented a paper on "The Complement Fixation Reaction in Tuberculosis." Discussed by Drs. Ward Burdick, Denver; W. H. Harris, New Orleans; F. M. Johns, New Orleans; W. O. Jones, Birmingham, Ala.; Frank J. Hall, Kansas City, Mo., and W. Warner Watkins, Phoenix, Ariz.

SECTION ON NERVOUS AND MENTAL DISEASES

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order by the vice chairman, Dr. Arthur S. Hamilton, Minneapolis.

On motion by Dr. C. R. Woodson, St. Joseph, Mo., carried, Drs. Hugh T. Patrick, Chicago; Karl A. Menninger, Topeka, Kan., and Edward L. Hunt, New York, were appointed as a committee to draft suitable resolutions on the death of Dr. Elmer E. Southard, and report at a subsequent session.

Drs. Ross Moore, Los Angeles; William A. Jones, Minneapolis, and Roy M. Van Wart, New Orleans, were appointed to act on the executive committee.

Dr. Arthur S. Hamilton, Minneapolis, read the chairman's address, entitled "Some Changes in the Nervous System in Pernicious Anemia, Especially Sensory Changes."

Dr. Edmund Jacobson, Chicago, read a paper on "Reduction of Nervous Irritability and Excitement by Progressive Relaxation." Discussed by Drs. Tom A. Williams, Washington, D. C.; Hyman Climenko, New York, and Edmund Jacobson, Chicago.

Dr. Gustave Roussy, professor of medicine, University of Paris, France, was introduced by Dr. Hugh T. Patrick, Chicago. In response to the cordial welcome extended, Professor Roussy expressed his pleasure in being present on this occasion and in meeting with the great American Medical Association, whose name is so well known in France. He expressed pleasure concerning the close association of American and French neurologists which has been brought about through the war, and voiced the desire that the relations of French and American institutions might continue—that the French might come to American colleges and learn of us, and we go to their educational institutions and learn of them, and so cultivate that broad spirit which makes for the best relations between nations.

Dr. Karl A. Menninger, Topeka, Kan., read a paper on "Influenza and Feeble-mindedness." Discussed by Drs. Andrew L. Skoog, Kansas City, Mo.; Hyman Climenko, New York; Oscar J. Raeder, Boston; Tom A. Williams, Washington, D. C.; C. F. Neu, Indianapolis, and Karl A. Menninger, Topeka, Kan.

Dr. Sanger Brown, Chicago, read a paper on "Outline of a Scheme for Writing the Natural History of Syphilis." Discussed by Drs. C. R. Woodson, St. Joseph, Mo., and Sanger Brown, Chicago. In concluding his paper, Dr. Brown intro-

duced and moved the adoption of the subjoined preambles and resolutions:

WHEREAS, The deleterious effects of syphilis on the mortality and morbidity of the human race are so prevalent and so severe as to challenge the most serious attention of the medical profession; and

WHEREAS, In the scientific study of any disease, knowledge of its natural history is a matter of cardinal importance; and

WHEREAS, Owing to the protracted course of syphilis, a continuous, complete clinical record of a given case can be secured only through the services of several successive medical observers; and

WHEREAS, It is highly desirable that a sufficient number of completed histories be accumulated and preserved and made easily accessible to students; and

WHEREAS, For the successful accomplishment of the purpose set forth above, the interest and cooperation of the best elements of our profession as represented in the membership of the American Medical Association are necessary; therefore, be it

Resolved, That the Section on Nervous and Mental Diseases of the American Medical Association recognizes the importance of ascertaining the natural history of syphilis and of making the history accessible for the information of students of medicine; and be it further

Resolved, That the Section on Nervous and Mental Diseases of the American Medical Association respectfully requests the trustees of the American Medical Association to appoint a committee from the sections most immediately concerned whose duty it should be to devise practical means and methods of accomplishing the foregoing specified purpose; and be it further

Resolved, That the representatives of the section in the House of Delegates be requested to present these preambles and resolutions to the House of Delegates and to ask its endorsement.

See minutes of the House of Delegates.

Dr. Hugh T. Patrick, Chicago, moved the adoption of the resolutions. Motion seconded by Dr. W. S. Lindsay, Topeka, Kan., and unanimously carried.

The following members were appointed to act as the nominating committee: Drs. George A. Moleen, Denver; Frank R. Fry, St. Louis, and Walter Timme, New York.

Dr. William A. Jones, Minneapolis, read a paper on "Discussion of Therapeutic Agents in Chronic Nervous Diseases." Discussed by Drs. Frank R. Fry, St. Louis; Ross Moore, Los Angeles; C. R. Woodson, St. Joseph, Mo.; Hyman Climenko, New York; W. T. Williamson, Portland, Ore., and William A. Jones, Minneapolis.

Dr. Frank R. Fry, St. Louis, read a paper on "Congenital Facial Paralysis: Two Additional Cases." No discussion.

THURSDAY, APRIL 29—MORNING

The section was called to order by the chairman at 9:30.

Dr. Julius Grinker, Chicago, read a paper on "Experiences with Luminal in Epilepsy." Discussed by Drs. George A. Moleen, Denver; Marvin L. Graves, Galveston, Texas; Andrew L. Skoog, Kansas City, Mo.; David S. Booth, St. Louis; E. Bates Block, Atlanta, Ga.; F. B. Wynn, Indianapolis; Roy M. Van Wart, New Orleans, and Julius Grinker, Chicago.

Dr. Hugh T. Patrick, Chicago, presented the report of the committee appointed to draft resolutions on the death of Dr. Elmer E. Southard, as follows:

WHEREAS, Dr. Elmer E. Southard, who one year ago was elected chairman of the Section on Nervous and Mental Diseases of the American Medical Association and should have presided at this session, has been removed by death; and

WHEREAS, Dr. Southard was a trained pathologist, a gifted neurologist, an able psychiatrist, an author of distinction, a brilliant teacher, a genial companion and a loyal friend; therefore be it

Resolved, That in the death of Dr. Southard the medical profession and especially the departments of neurology and psychiatry have suffered an irreparable loss; and be it further

Resolved, That the members of this section extend to the family of Dr. Southard their profound sympathy.

On motion duly seconded and carried, the foregoing preambles and resolutions were adopted by the section.

Dr. Oscar J. Raeder, Boston, read a paper on "Endocrine Imbalance in the Feeble-minded." Discussed by Drs. Tom A. Williams, Washington, D. C.; Gustave Roussy, Paris, France; Walter Timme, New York; M. A. Bliss, St. Louis; Andrew L. Skoog, Kansas City; Karl A. Menninger, Topeka, Kan., and Oscar J. Raeder, Boston.

Dr. I. Leon Meyers, Chicago, read a paper on "The Physiologic Significance of the Babinski Toe Response." Discussed by Drs. Andrew L. Skoog, Kansas City; Tom A. Williams,

Washington, D. C.; Gustave Roussy, Paris, France; M. A. Bliss, St. Louis, and I. Leon Meyers, Chicago.

FRIDAY, APRIL 30—MORNING

The meeting was called to order at 9:30 by the chairman.

The following officers were elected for the ensuing year: chairman, Dr. Arthur S. Hamilton, Minneapolis; vice chairman, Dr. Walter Timme, New York; secretary, Dr. Charles W. Hitchcock, Detroit (continued), delegate, Dr. Hugh T. Patrick, Chicago.

Drs. Isador Abrahamson and Hyman Climenko, New York, presented a paper on "Symptomatology of Spinal Cord Tumors with Illustrative Cases." Discussed by Drs. Julius Grinker, Chicago; Alfred W. Adson, Rochester, Minn.; A. L. Skoog, Kansas City, Mo.; Karl A. Menninger, Topeka, Kan.; M. A. Bliss, St. Louis; George A. Moleen, Denver; Tom A. Williams, Washington, D. C., and Hyman Climenko, New York.

Dr. Tom A. Williams, Washington, D. C., read a paper on "The Causes of Emotivity and Their Management." Discussed by Drs. Julius Grinker, Chicago; David S. Booth, St. Louis; Hyman Climenko, New York; Karl A. Menninger, Topeka, Kan.; C. F. Neu, Indianapolis; Ross Moore, Los Angeles; G. H. Benton, Miami, Fla.; Gustave Roussy, Paris, France; George A. Moleen, Denver, and Tom A. Williams, Washington, D. C.

Dr. A. L. Skoog, Kansas City, Mo., read a paper on "Measles: Brain Complications." Discussed by Drs. Karl A. Menninger, Topeka, Kan., and A. L. Skoog, Kansas City.

Dr. E. Bates Block, Atlanta, Ga., read a paper on "The Relation of Worms to Epilepsy." Discussed by Drs. Julius Grinker, Chicago; David S. Booth, St. Louis; Hyman Climenko, New York; Martin L. Graves, Galveston, Texas; Tom A. Williams, Washington, D. C., and E. Bates Block, Atlanta.

Dr. Edward Livingston Hunt, New York, read a paper on "Encephalitis Lethargica." Discussed by Drs. Frank R. Fry, St. Louis; Julius Grinker, Chicago; Tom A. Williams, Washington, D. C.; Ross Moore, Los Angeles; Hyman Climenko, New York; George A. Moleen, Denver; Oscar J. Raeder, Boston; A. L. Skoog, Kansas City, Mo.; Roy M. Van Wart, New Orleans; Albert Woldert, Tyler, Tenn., and David S. Booth, St. Louis.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order at 9:35 by the chairman, Dr. James A. Hayne, Columbia, S. C.

Dr. James A. Hayne, Columbia, S. C., read the chairman's address, entitled "The Rights of the Child."

Dr. Erwin A. Peterson, Washington, D. C., read a paper on "What the American Red Cross Can Contribute to the General Health Program." Discussed by Drs. J. W. Schereschewsky, Washington, D. C.; Philip King Brown, San Francisco; John D. McLean, Harrisburg, Pa.; John P. Davin, New York; C. W. Goddard, Austin, Texas; E. Luther Stevens, St. Augustine, Fla., and Erwin A. Peterson, Washington, D. C.

Dr. Frederick L. Hoffman, Newark, N. J., read a paper on "Mortality and Incidence of Leprosy Throughout the World." Discussed by Drs. Isadore Dyer, New Orleans; J. W. Schereschewsky, Washington, D. C.; G. C. Chandler, Shreveport, La.; John P. Davin, New York; Hiram Byrd, University, Miss.; S. W. Welch, Montgomery, Ala.; A. T. McCormack, Louisville, Ky.; V. G. Heiser, New York, and Frederick L. Hoffman, Newark, N. J.

Dr. A. T. McCormack, Louisville, Ky., read the following resolution and moved that it be accepted and presented to the House of Delegates:

WHEREAS, Leprosy is a national menace; therefore, be it

Resolved, That the House of Delegates be requested to ask that the American Public Health Association shall call a national conference to discuss every phase of the problem to the end that the public may be educated to the insidious spread of the disease, the possibility of cure or arrestation in the earliest stage of the disease, and the necessity of segregation.

Motion carried. (See minutes of the House of Delegates.)

Dr. Carroll Fox, Washington, D. C., read a paper on "Minimum Standards of Organization for Municipal Health Departments." Discussed by Drs. G. C. Chandler, Shreveport, La.; Walter H. Brown, Washington, D. C.; A. T. McCormack, Louisville, Ky., and Carroll Fox, Washington, D. C.

Dr. J. A. Watkins, Cincinnati, read a paper on "The Training of Industrial Physicians." Discussed by Drs. J. W. Schereschewsky, Washington, D. C., and Edward Martin, Philadelphia.

The chairman appointed Drs. A. T. McCormack, Louisville, Ky., and John W. Kerr, New York, on the Executive Committee to take the places of Drs. Otto P. Geier, Cincinnati, and W. S. Rankin, Raleigh, N. C.

THURSDAY, APRIL 29—MORNING

Dr. Charles M. Abbott, Alexandria, La., read a paper on "The Carrier Question in Epidemic Meningitis and Diphtheria." Discussed by Drs. L. I. Lobenhoffer, Alexandria, La.; H. J. Nichols, Washington, D. C.; G. W. McCoy, Washington, D. C.; C. A. Earle, Des Plaines, Ill.; A. Parker Hitchins, Indianapolis, and Charles M. Abbott, Alexandria, La.

Dr. Luther A. Riser, Columbia, S. C., read a paper on "Typhoid Reduction in South Carolina: Results in Counties with Health Organization." Discussed by Drs. W. S. Leathers, University, Miss.; J. D. McLean, Harrisburg, Pa.; G. C. Chandler, Shreveport, La.; John A. Ferrell, New York, and Luther A. Riser, Columbia, S. C.

Dr. J. W. Schereschewsky, Washington, D. C., read the following resolution and moved that it be accepted and presented to the House of Delegates:

WHEREAS, The National Tuberculosis Association, through investigations of its Committee on Indigent Migratory Consumptives, covering the last fifteen months, has found:

That there is a large migration of indigent consumptives to the Southwest in search of health;

That out of 1,786 patients, largely indigent or potentially indigent, reported from the Southwest in the last six months, 783, or 41.3 per cent., had been definitely advised to go there by physicians;

That this migration of indigent and potentially indigent consumptives is ill advised in that it causes much needless suffering and loss of life brought on by inadequate care, worry, homesickness and lack of proper food, which are conditions too frequently experienced after arrival; and furthermore,

That the migration of this group is a menace to the public health, both during migration and after arrival, and is a financial drain and social burden to the communities to which the migration goes. Therefore be it

Resolved, That in order to check this unnecessary and undesirable migration, physicians throughout the country be not only requested but urged *not* to advise their tuberculosis patients to migrate to the health resort states, unless such patients have sufficient funds to properly provide for their necessary care and comforts for at least one year.

Dr. Alexander Lambert, New York, presented the following amendment to the foregoing resolution, which amendment was accepted by Dr. J. W. Schereschewsky, Washington, D. C.:

Resolved, That the Section on Preventive Medicine and Public Health hereby requests the House of Delegates to instruct the Council on Health and Public Instruction to investigate and report at the next annual meeting the migration of consumptives from one state to the other throughout the Union, and the number of indigents so foisted on one state by another, and report definite suggestions to prevent this constant undesirable migration.

The resolution, as amended, was duly seconded and carried. (See minutes of the House of Delegates.)

Dr. Lewis A. Conner, New York, read a paper on "Heart Disease as a Public Health Problem." Discussed by Drs. Alexander Lambert, New York; G. C. McKinney, Lake Charles, La.; William H. Mercier, Pittsburgh; John P. Davin, New York; B. A. Ledbetter, New Orleans, and Lewis A. Conner, New York.

Dr. Lunsford D. Fricks, Memphis, Tenn., read a paper on "Eradication of Malaria: A National Health Problem." Discussed by Drs. Graham E. Hensen, Jacksonville, Fla.; A. E. Chace, Texarkana, Ark.; C. C. Bass, New Orleans; W. S. Leathers, University, Miss.; J. W. Schereschewsky, Washington, D. C.; John A. Ferrell, New York; John P. Davin, New York, and Lunsford D. Fricks, Memphis, Tenn.

Dr. John McMullen, Louisville, Ky., read a paper on "Trachoma: A Public Health Problem of the States." Discussed by Dr. Arthur T. McCormack, Louisville, Ky.

Dr. J. Wilkerson Jervey, Greenville, S. C., read a paper on "The Differential Diagnosis of Conjunctival Folliculosis and Trachoma." These two papers were discussed by Drs. Henry Dickson Bruns, New Orleans; Theodore E. Oertel, Augusta, Ga.; James A. Hayne, Columbia, S. C.; Walter H. Brown, Washington, D. C.; S. W. Welch, Montgomery, Ala.; G. Golseth, Jamestown, N. D.; J. G. South, Frankfort, Ky.; John F. Hogan, Baltimore; Hiram Woods, Baltimore; John McMullen, Louisville, Ky., and J. Wilkerson Jervey, Greenville, S. C.

The chairman appointed the following nominating committee: Drs. C. St. Clair Drake, Springfield, Ill.; C. C. Bass, New Orleans, and A. T. McCormack, Louisville, Ky.

FRIDAY, APRIL 30—MORNING

The following officers were elected for the ensuing year: chairman, John D. McLean, Harrisburg, Pa.; vice chairman, C. D. Selby, Toledo, Ohio; secretary (three years), W. S. Leathers, University, Miss., and delegate, James A. Hayne, Columbia, S. C.

Dr. W. A. Sawyer, Rochester, N. Y., read a paper on "Industrial Epidemiology." Discussed by Drs. A. E. Chace, Texarkana, Ark.; John P. Davin, New York; James R. Bean, Birmingham, Ala.; S. W. Welch, Montgomery, Ala., and W. A. Sawyer, Rochester, N. Y.

Dr. A. E. Chace, Texarkana, Ark., read the following resolution and moved that it be accepted and presented to the House of Delegates:

Resolved, That the Section on Preventive Medicine and Public Health condemns the contract entered into by the United States Railroad Administration with railroad employees, whereby physical examination of applicants for employment is prohibited, and that it recommends to the House of Delegates the adoption of some resolution condemning in terms that cannot be mistaken the entering into of a contract with any labor organization prohibiting physical examination.

(Not transmitted to the House of Delegates.)

Dr. E. Luther Stevens, St. Augustine, Fla., presented the following amendment to the foregoing resolution, and moved its adoption:

Resolved, That a committee be appointed to investigate the question raised in the above resolution and report the result of its investigations at the first session of the Section on Preventive Medicine and Public Health at the next annual meeting of the American Medical Association.

The amendment was accepted by Dr. A. E. Chace, Texarkana, Ark., and carried.

Dr. Norman Walker of Edinburgh, Scotland, and Sir Humphry D. Rolleston of the Royal College of Physicians of London, England, who were in attendance at the annual meeting of the American Medical Association, were extended the privileges of the floor of this section.

Dr. Lloyd Noland, Birmingham, Ala., read a paper on "The Work of the Department of Health of the Tennessee Coal, Iron and Railroad Company." Discussed by Drs. S. W. Welch, Montgomery, Ala.; Walter C. Jones, Birmingham, Ala., and Oscar Dowling, New Orleans.

Dr. Grover C. McKinney, Lake Charles, La., read a paper on "The Difficulties of Public Health Administration." Discussed by Drs. G. C. Chandler, Shreveport, La.; James A. Hayne, Columbia, S. C.; H. F. White, Washington, D. C.; T. J. Howells, Salt Lake City; Milton Board, Louisville, Ky.; Mayer A. Newhauser, New Orleans; W. S. Leathers, University, Miss.; W. D. Calvin, Fort Wayne, Ind.; S. W. Welch, Montgomery, Ala.; John P. Davin, New York; Oscar Dowling, New Orleans, La., and Grover C. McKinney, Lake Charles, La.

Dr. Florence L. Meredith, New York, read the following resolution and moved it be accepted and presented to the House of Delegates:

WHEREAS, The number of graduates from medical schools in 1919 is reported to be nearly 900 short of the minimum estimated by the Carnegie Foundation as being necessary to carry on adequately the medical work of the country; and

WHEREAS, The growth of public health work calls for an increased number of doctors; and

WHEREAS, Women doctors have proved successful in preventive medicine and public health work; be it

Resolved, That the Section on Preventive Medicine and Public Health endorse efforts to enroll women as students in medical schools, and especially recommend to their attention the field of preventive medicine and public health.

After discussion by Drs. Milton Board, Louisville, Ky.; C. C. Bass, New Orleans; W. S. Leathers, University, Miss., and Florence L. Meredith, New York, the motion was carried.

(Not transmitted to the House of Delegates.)

Dr. William Elder, New Orleans, read a paper on "The Necessity for the Reporting of Venereal Disease by Physicians." Discussed by Drs. Oscar Dowling, New Orleans; A. E. Chace, Texarkana, Ark.; W. D. Calvin, Fort Wayne, Ind.; Milton Board, Louisville, Ky.; Hardie R. Hays, North Carrollton, Miss.; H. F. White, Washington, D. C., and William Elder, New Orleans.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

WEDNESDAY, APRIL 28—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Oliver S. Ormsby, Chicago.

Dr. Oliver S. Ormsby, Chicago, read the chairman's address, entitled "A Valuable Method of Employing Arsphenamin in Syphilis."

Dr. William A. Pusey, Chicago, presented the following preambles and resolutions on behalf of Dr. Sanger Brown, Kenilworth, Ill., who has in contemplation an effort to establish a bureau for the standardization of the histories of syphilis so that the end-results may be collated:

WHEREAS, The deleterious effects of syphilis on the mortality and morbidity of the human race are so prevalent and so severe as to challenge the most serious attention of the entire medical profession; and,

WHEREAS, In the scientific study of any disease, knowledge of its natural history is an item of cardinal importance; and

WHEREAS, Owing to the protracted course of syphilis, continuous and complete clinical record of a given case can be secured only through the services of several successive medical observers; and

WHEREAS, It is highly desirable that a sufficient number of completed histories be accumulated and preserved, and made easily accessible to students; and,

WHEREAS, For the successful accomplishment of the purpose set forth above, the interest and cooperation of a considerable number of the best elements of our profession as represented in the membership of the American Medical Association are necessary, therefore be it

Resolved, (1) That the Section on Dermatology and Syphilology recognizes the importance of ascertaining the natural history of syphilis and of making this history accessible and in form serviceable to students of medicine; further

Resolved, (2) That the Section on Dermatology and Syphilology respectfully requests the trustees of the American Medical Association to appoint a committee from the sections most immediately concerned, whose duty it shall be to devise practical means and methods of accomplishing the foregoing specified purpose; and further,

Resolved, (3) That the representatives of this section in the House of Delegates be requested to present these preambles and resolutions to the House of Delegates, and to ask its endorsement.

Dr. Pusey moved that these resolutions be adopted and transmitted to the House of Delegates as the expression of the opinion of those in attendance at this meeting. Seconded by Dr. Richard L. Sutton, Kansas City, Mo., and several others. Carried.

(See minutes of the House of Delegates.)

The chairman appointed a nominating committee consisting of Drs. Howard Morrow, San Francisco; William H. Mook, St. Louis, and Henry R. Varney, Detroit.

The following papers were read as a symposium on "Syphilis":

Dr. B. Barker Beeson, Chicago: "Polyneuritis Plus Dermatitis Exfoliativa Following Neo-Arsphenamin."

Dr. George M. Olson, Minneapolis: "Arsphenamin Dermatitis."

Drs. Harold N. Cole and Sidney Littman, Cleveland: "A Study of the Absorption of Mercury Injections by Means of the Roentgen Ray."

Dr. Paul A. O'Leary, Rochester, Minn.: "The Value of the Provocative Wassermann Test in the Diagnosis of Obscure Syphilis."

These four papers were discussed by Drs. Richard L. Sutton, Kansas City, Mo.; Arthur W. Stillians, Chicago; Augustus Ravogli, Cincinnati; Samuel E. Sweitzer, Minneapolis; William H. Mook, St. Louis; Howard Morrow, San Francisco; Ernest L. McEwen, Chicago; William Allen Pusey, Chicago; F. W. Cregor, Indianapolis; John H. Stokes, Rochester, Minn.; Walter J. Highman, New York; W. D. Calvin, Fort Wayne, Ind.; I. L. McGlasson, San Antonio, Texas; B. Barker Beeson, Chicago, and Harold N. Cole, Cleveland.

Dr. Howard Fox, New York, and D. J. Edgar Fisher, Pittsburgh, presented a paper on "Protein Sensitization in Eczema." Discussed by Drs. John H. Stokes, Rochester, Minn.; Walter J. Highman, New York, and Norman Walker, Edinburgh, Scotland.

Dr. Richard L. Sutton, Kansas City, Mo., read a paper on "Infectious Eczematoid Dermatitis." Discussed by Drs. Francis E. Senear, Chicago; Augustus Ravogli, Cincinnati; Everett S. Lain, Oklahoma City; Ernest L. McEwen, Chicago; Harold N. Cole, Cleveland; William A. Quinn, Chicago; J. N. Roussel, New Orleans; William H. Mook, St. Louis; M. J. Farber, St. Joseph, Mo., and Richard L. Sutton, Kansas City, Mo.

Drs. Jerome Kingsbury and Paul E. Bechet, New York, presented a paper entitled "Venipuncture as an Occasional Adjuvant in the Treatment of Certain Diseases of the Skin." Discussed by Drs. John H. Stokes, Rochester, Minn.; William Allen Pusey, Chicago; Augustus Ravogli, Cincinnati; F. W. Cregor, Indianapolis; Howard Fox, New York, and Paul E. Bechet, New York.

THURSDAY, APRIL 29—AFTERNOON

A joint meeting was held with the section on Pharmacology and Therapeutics. The meeting was called to order at 2 o'clock by the chairman of the Section on Dermatology and Syphilology, Dr. Oliver S. Ormsby, Chicago.

The following papers were read as a symposium on "Arsphenamin":

Dr. George W. Raiziss, Philadelphia: "The Chemical Composition of Arsphenamin and Neo-Arsphenamin and Its Relation to Toxicity."

Drs. John A. Kolcer and Baldwin Lucke, Philadelphia: "The Pathology of Arsphenamin and Neo-Arsphenamin Intoxication: An Experimental Study."

Dr. George B. Roth, Washington, D. C.: "Some Salient Facts Regarding the Toxicity of Arsphenamin and Neo-Arsphenamin."

Dr. John H. Stokes, Rochester, Minn.: "Therapeutic Applications and Limitations of the Arsphenamins."

Dr. Joseph A. Elliott, Charlotte, N. C.: "Effects of Arsphenamin on Renal Function in Syphilitic Patients."

Drs. Henry J. Nichols and Mathew A. Reasoner, Washington, D. C.: "The Use of Arsphenamin in Nonsyphilitic Diseases."

Dr. Dudley D. Stetson, New York: "Report on the Use of a Permanent Solution of Arsphenamin."

These seven papers were discussed by Drs. William Allen Pusey, Chicago; William H. Guy, Pittsburgh; Richard L. Sutton, Kansas City, Mo.; Augustus Ravogli, Cincinnati; Ernest L. McEwen, Chicago; Charles M. Williams, New York; George W. McCoy, Washington, D. C.; Harold N. Cole, Cleveland; Julius Grinker, Chicago; Alec N. Thomson, Brooklyn; J. N. Roussel, New Orleans; Marion H. Foster, Alexandria, La.; Otto Lowy, Newark, N. J.; M. J. Farber, St. Joseph, Mo.; Arthur W. Stillians, Chicago; W. D. Calvin, Fort Wayne, Ind.; Walter J. Highman, New York; Paul E. Bechet, New York; George P. Lingenfelter, Denver; Cary Eggleston, New York; W. T. Watson, Baltimore; George W. Raiziss, Philadelphia; John A. Kolmer, Philadelphia; George B. Roth, Washington, D. C.; John H. Stokes, Rochester, Minn.; Dudley D. Stetson, New York, and Major Henry J. Nichols, Washington, D. C.

FRIDAY, APRIL 30—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Oliver S. Ormsby, Chicago.

The following officers were elected for the ensuing year: chairman, Dr. Walter J. Highman, New York; vice chairman, Dr. Everett S. Lain, Oklahoma City; secretary, Dr. Harold N. Cole, Cleveland; delegate, Dr. Howard Fox, New York.

The following papers were presented as a symposium on "New Growths":

Dr. Everett S. Lain, Oklahoma City: "A Clinical Study of Epitheliomas of the Lower Lip."

Dr. Charles M. Williams, New York: "Malignant Degeneration of Benign Dermatoses."

Dr. Earl D. Crutchfield, Galveston, Texas: "Malignant Tumors of the Skin."

Dr. Erwin F. Smith, Washington, D. C.: "Production of Tumors in the Absence of Parasites."

Dr. George E. Pfahler, Philadelphia: "The Treatment of Keloid and Hypertrophied Scars by Radiotherapy Alone or Combined with Excision."

These five papers were discussed by Drs. Norman Walker, Edinburgh, Scotland; William C. MacCarty, Rochester, Minn.; John E. Lane, New Haven, Conn.; Augustus Ravogli, Cincinnati; William H. Guy, Pittsburgh; J. H. King, Nashville, Tenn.; Richard L. Sutton, Kansas City, Mo.; Harold N. Cole, Cleveland; Howard Morrow, San Francisco; George E. Pfahler, Philadelphia; Everett S. Lain, Oklahoma City; Charles M. Williams, New York; Earl D. Crutchfield, Galveston, Texas, and Erwin F. Smith, Washington, D. C.

Drs. Samuel E. Sweitzer and Henry E. Michelson, Minneapolis, presented a paper on "Acidosis in Skin Diseases." Discussed by Drs. Richard L. Sutton, Kansas City, Mo.; Augustus Ravogli, Cincinnati, and Samuel E. Sweitzer, Minneapolis.

Dr. Francis E. Senear, Chicago, read a paper on "Lichen Spinulosus and Folliculitis Decalvans: A Clinical Combination." Discussed by Drs. J. H. King, Nashville, Tenn.; F. W. Cregor, Indianapolis; Walter J. Highman, New York; Oliver S. Ormsby, Chicago, and Francis E. Senear, Chicago.

Dr. Ernest L. McEwen, Chicago, read a paper on "The Association of Herpes Zoster and Varicella." Discussed by Drs. Oliver S. Ormsby, Chicago; Everett S. Lain, Oklahoma City; George P. Lingenfelter, Denver; J. H. King, Nashville; Walter J. Highman, New York; Richard L. Sutton, Kansas City, Mo., and Ernest L. McEwen, Chicago.

Dr. Lyle B. Kingery, Ann Arbor, Mich., read a paper on "The Histogenesis of Molluscum Contagiosum." Discussed by Drs. J. H. King, Nashville; Walter J. Highman, New York, and Lyle B. Kingery, Ann Arbor, Mich.

SECTION ON UROLOGY

WEDNESDAY, APRIL 28—MORNING

The meeting was called to order at 9:20 by the chairman, Dr. William E. Lower, Cleveland.

Dr. Lower read the chairman's address, entitled "Disposition of the Ureter in Surgical Conditions of the Bladder Involving the Ureteral Orifices."

Dr. Benjamin A. Thomas, Philadelphia, read a paper on "The Treatment of Bladder Tumors with Analysis of Cases," and gave a demonstration of slides and instruments.

Drs. Walter E. Sistrunk and E. Starr Judd, Rochester, Minn., presented a paper on "Results of Surgical Treatment of Tumors of the Bladder."

These two papers were discussed by Drs. B. C. Corbus, Chicago; Victor D. Lespinasse, Chicago; Arthur B. Cecil, Los Angeles; Abraham Hyman, New York; Henry J. Scherck, St. Louis; Arthur H. Curtis, Chicago; James A. Gardner, Buffalo; Herman L. Kretschmer, Chicago; George E. Pfahler, Philadelphia; Albert E. Goldstein, Baltimore; H. W. E. Walther, New Orleans; A. J. Crowell, Charlotte, N. C.; Benjamin A. Thomas, Philadelphia, and Walter E. Sistrunk, Rochester.

Dr. Percy E. McCown, Indianapolis, read a paper on "Papillomatous Epithelioma of Kidney Pelvis." Discussed by Drs. W. F. Braasch, Rochester, Minn.; C. M. Harpster,

Toledo, Ohio; W. E. Stevens, San Francisco; Abraham Hyman, New York; Herman L. Kretschmer, Chicago; Albert E. Goldstein, Baltimore; William E. Lower, Cleveland, and Percy E. McCown, Indianapolis.

The chairman appointed Drs. Harry A. Fowler, Washington, D. C., and Courtney W. Shropshire, Birmingham, to fill the vacancies on the executive committee caused by the absence of Drs. Hugh Cabot, Ann Arbor, Mich., and Edward L. Keyes, New York.

THURSDAY, APRIL 29—MORNING

The meeting was called to order at 9:10 by the chairman.

The chairman appointed the following nominating committee: Drs. James A. Gardner, Buffalo; W. F. Braasch, Rochester, Minn., and Carl L. Wheeler, Lexington, Ky.

Dr. Arthur B. Cecil, Los Angeles, read a paper on "Abdominal Pain in Diseases of the Kidney and Ureters." Discussed by Drs. William E. Stevens, San Francisco; W. F. Braasch, Rochester, Minn.; Harry A. Fowler, Washington, D. C.; Abraham Hyman, New York; Albert E. Goldstein, Baltimore; William E. Lower, Cleveland, and Arthur B. Cecil, Los Angeles.

Drs. Herman L. Kretschmer and Henry F. Helmholz, Chicago, presented a paper on "Studies of Pyelitis in Infancy." Discussed by Drs. W. F. Braasch, Rochester, Minn.; I. L. Van Zandt, Fort Worth, Texas; Marcell Hartwig, Los Angeles; Abraham Hyman, New York; Henry J. Scherck, St. Louis; Arthur B. Cecil, Los Angeles; William E. Stevens, San Francisco; B. C. Willis, Rocky Mount, N. C., and Herman L. Kretschmer, Chicago.

Drs. Abraham Hyman and Edwin Beer, New York, presented a paper on "Nephrectomy: Based on the Record of 250 Cases." Discussed by Dr. Arthur B. Cecil, Los Angeles.

Dr. Albert E. Goldstein, Baltimore, read a paper on "Ureteral Obstruction and Dilatation in the Male." Discussed by Drs. H. W. E. Walther, New Orleans; W. F. Braasch, Rochester, Minn.; Abraham Nelken, New Orleans; James A. Gardner, Buffalo; Herman L. Kretschmer, Chicago; C. M. Harpster, Toledo; Abraham Hyman, New York; A. J. Crowell, Charlotte, N. C., and Albert E. Goldstein, Baltimore.

Dr. William F. Braasch, Rochester, Minn., read a paper on "Occluded Renal Tuberculosis." Discussed by Drs. Joseph Hume, New Orleans; Herman L. Kretschmer, Chicago; Henry McClure Young, St. Louis; A. J. Crowell, Charlotte, N. C.; Harry A. Fowler, Washington, D. C., and W. F. Braasch, Rochester, Minn.

Dr. Ernest M. Watson, Buffalo, read a paper on "Developmental Factors in the Formation of Certain Vesical Diverticula." Discussed by Drs. Victor D. Lespinasse, Chicago; William E. Lower, Cleveland, and Ernest M. Watson, Buffalo.

FRIDAY, APRIL 30—MORNING

The meeting was called to order at 9 o'clock by the chairman.

The following officers were elected for the ensuing year: chairman, Dr. Richard F. O'Neil, Boston; vice chairman, Dr. Joseph Hume, New Orleans; secretary (for three years), Dr. Herman L. Kretschmer, Chicago; executive committee, Dr. Edward L. Keyes, Jr., New York; Dr. William F. Braasch, Rochester, Minn.; Dr. William E. Lower, Cleveland; delegate, Dr. E. O. Smith, Cincinnati; alternate, Dr. Henry G. Bugbee, New York.

Dr. James A. Gardner, Buffalo, read a paper on "Contraindications to Prostatectomy." Discussed by Drs. Herman L. Kretschmer, Chicago; Arthur B. Cecil, Los Angeles; E. G. Ballenger, Atlanta; Harry A. Fowler, Washington, D. C.; J. J. Gilbride, Philadelphia; A. J. Crowell, Charlotte, N. C.; William E. Lower, Cleveland; Victor D. Lespinasse, Chicago, and James A. Gardner, Buffalo.

Dr. Harry A. Fowler, Washington, D. C., read a paper on "Ulcer of the Bladder—Hunner Type." Discussed by Drs. Arthur B. Cecil, Los Angeles; Loyd Thompson, Hot Springs, Ark.; James A. Gardner, Buffalo; C. M. Harpster, Toledo,

Ohio; H. W. E. Walther, New Orleans, and Harry A. Fowler, Washington, D. C.

Dr. George H. Day, Louisville, read a paper on "Urologic and Venereal Idiosyncrasies in the Negro." Discussed by Drs. Thomas M. Paul, St. Joseph, Mo.; G. E. Johnson, Holly Springs, Miss., and Victor D. Lespinasse, Chicago.

Drs. William E. Stevens and Maurice Heppner, San Francisco, presented a paper on "Gonorrhea of the Lower Genito-Urinary Tract in Women, with Special Reference to the Glands of Bartholin." Discussed by Drs. E. G. Ballenger, Atlanta; Herman L. Kretschmer, Chicago; George H. Day, Louisville; Abraham Nelken, New Orleans; A. J. Crowell, Charlotte, N. C., and William E. Stevens, San Francisco.

Dr. E. G. Ballenger, Atlanta, read a paper on "Orchitis from Mumps: Conservation of the Testes by Incision of the Tunica Albuginea." Discussed by Drs. Victor D. Lespinasse, Chicago, and E. G. Ballenger, Atlanta.

Dr. Victor D. Lespinasse, Chicago, read a paper on "Spermatogenesis in Relation to Childlessness." Discussed by Drs. Albert E. Goldstein, Baltimore; A. J. Crowell, Charlotte, N. C., and Dr. Victor D. Lespinasse, Chicago.

SECTION ON ORTHOPEDIC SURGERY

WEDNESDAY, APRIL 28—AFTERNOON

The section was called to order at 2:15 by the vice chairman, Dr. Roland Hammond, Providence, R. I.

In absence of Dr. Emil S. Geist, Minneapolis, a member of the Executive Committee, Dr. Edward S. Hatch, New Orleans, was appointed by the chairman to fill Dr. Geist's place.

Dr. Frank E. Peckham, Providence, R. I., read a paper on "Orthopedic Conditions Directly Due to Sterilized Food in Infancy." Discussed by Drs. Maurice L. Blatt, Chicago; L. C. Spencer, New Orleans; Albert H. Byfield, Iowa City; Gustave Lippmann, St. Louis; J. D. Griffith, Kansas City, Mo., and Frank E. Peckham, Providence, R. I.

Dr. Leo Eloesser, San Francisco, read a paper on "Operations for Repair of Bone Defects: Results Obtained at Letterman General Hospital." Discussed by Drs. Dean F. Winn, Staten Island, N. Y.; Harry M. Sherman, San Francisco; Edwin W. Ryerson, Chicago; Frederick J. Gaenslen, Milwaukee; H. Winnett Orr, Lincoln, Neb.; Philip Lewin, Chicago; B. G. Chollett, Toledo, Ohio; Paul A. McIlhenny, New Orleans, and Leo Eloesser, San Francisco.

Dr. J. Spencer Davis, Dallas, Texas, and Jacob J. Sybenga, Pella, Iowa, presented a paper on "Results of Bone Graft at U. S. Army Hospital No. 3."

Dr. Albert H. Freiberg, Cincinnati, arose to the point of order that the demonstration was in conflict with one of the rules of the American Medical Association, in that the material presented and pictures shown have appeared in a book published by Dr. Frederick H. Albee. The chairman sustained the objection, but ruled that moving pictures of illustrative cases might be shown, any discussion to be limited to these. The film was then presented and discussed by Drs. Paul B. Magnuson, Chicago; L. C. Spencer, New Orleans; Willis C. Campbell, Memphis, Tenn., and J. Spencer Davis, Dallas, Texas.

The following papers were read as a symposium on "Treatment of Infantile Paralysis":

De Forest P. Willard, Philadelphia: "Transverse Horizontal Section of the Tarsus in Paralytic Calcaneus and Flail Foot."

H. Winnett Orr, Lincoln, Neb.: "Indications for and End-Results of Surgical Operations in Infantile Paralysis."

Frederick J. Gaenslen, Milwaukee: "Sling Suspension Method of Exercises in Infantile Paralysis."

These three papers were discussed by Drs. John D. Ridlon, Chicago; Willis K. West, Oklahoma City; Clarence W. East, Springfield, Ill.; George E. Bennett, Baltimore; Frank R. Ober, Boston; Walter G. Stern, Cleveland; Edwin W. Ryerson, Chicago; Albert H. Freiberg, Cincinnati; O. L. Miller, Atlanta, Ga.; R. W. Billington, Nashville, Tenn.; G. D. Marshall, Kokomo, Ind.; Horace R. Allen, Indianapolis;

DeForest P. Willard, Philadelphia; H. Winnett Orr, Lincoln, Neb., and Frederick J. Gaenslen, Milwaukee.

THURSDAY, APRIL 29—AFTERNOON

The section was called to order by the acting chairman at 2:15.

Dr. Wallace Blanchard, Chicago, read a paper on "Anterior Bow-Legs." Discussed by Drs. Willis C. Campbell, Memphis, Tenn., and Wallace Blanchard, Chicago.

Dr. Roland Hammond, Providence, R. I., read the chairman's address, entitled "Constructive Versus Reconstructive Surgery of the Extremities."

Dr. Robert B. Cofield, Cincinnati, read a paper on "Some of the Difficulties in the Diagnosis of Osteosarcoma." Discussed by Drs. Frederick J. Gaenslen, Milwaukee; Melvin S. Henderson, Rochester, Minn.; Harry E. Mock, Chicago; Edwin W. Ryerson, Chicago; J. D. Griffith, Kansas City, Mo.; Harry M. Sherman, San Francisco; Willis C. Campbell, Memphis, Tenn.; Robert Carothers, Cincinnati, and Robert B. Cofield, Cincinnati.

Dr. Walter G. Stern, Cleveland, read a paper on "Dislocation of the Carpal Semilunar Bone." Discussed by Drs. Edward S. Hatch, New Orleans; T. Turner Thomas, Philadelphia; DeForest P. Willard, Philadelphia; Melvin S. Henderson, Rochester, Minn., and Walter G. Stern, Cleveland.

Dr. T. Turner Thomas, Philadelphia, read a paper on "Recurrent Dislocations and Allied Chronic Conditions of the Shoulder." Discussed by Drs. Melvin S. Henderson, Rochester, Minn.; Alfred C. Wood, Philadelphia; John T. O'Ferrall, New Orleans; C. L. Storey, Detroit, and T. Turner Thomas, Philadelphia.

Dr. Albert H. Freiberg, Cincinnati, read a paper on "The Objective Symptoms of Foot Strain." Discussed by Drs. John L. Porter, Chicago; Paul B. Magnuson, Chicago, and Albert H. Freiberg, Cincinnati.

Dr. Horace R. Allen, Indianapolis, read a paper on "Unstandardized Versus Standardized Splints." Discussed by Drs. H. Winnett Orr, Lincoln, Neb.; Frank R. Ober, Boston; R. W. Billington, Nashville, Tenn.; Edwin W. Ryerson, Chicago; John Ridlon, Chicago; C. L. Storey, Detroit, and Horace R. Allen, Indianapolis.

FRIDAY, APRIL 30—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman.

The following officers were elected: chairman, Dr. Melvin S. Henderson, Rochester, Minn.; vice chairman, Dr. H. Winnett Orr, Lincoln, Neb.; secretary, Dr. Henry Bascom Thomas, Chicago (continued); delegate, Dr. John Ridlon, Chicago.

In order to have three members of the executive committee pass on the paper of Dr. Albert H. Freiberg, who is a member of that committee, the chairman appointed Dr. J. P. Lord, Omaha, to pass on this paper.

Dr. John O. Bower, Philadelphia, read a paper on "Operative Treatment of Peripheral Nerve and Associated Bone Lesions in One Stage." Discussed by Drs. Karl W. Ney, Staten Island, N. Y.; L. C. Spencer, New Orleans; Edwin W. Ryerson, Chicago, and John O. Bower, Philadelphia.

The following papers were read as a symposium on "Restoration of the Disabled."

Dr. Harry E. Mock, Chicago: "Reclamation Service for Workmen Permanently Handicapped in Industry."

Dr. Carroll L. Storey, Detroit: "Progress in the Care of Cripples."

These two papers were discussed by Drs. Alfred H. Freiberg, Cincinnati; John T. O'Ferrall, New Orleans; Frank G. Murphy, Chicago; H. Winnett Orr, Lincoln, Neb.; Clarence W. East, Springfield, Ill.; J. D. Griffith, Kansas City, Mo.; Colby W. Rucker, Washington, D. C.; Paul B. Magnuson, Chicago; J. S. Millard, Akron, Ohio; Walter G. Stern, Cleveland; Harry E. Mock, Chicago, and Carroll L. Storey, Detroit.

Dr. Robert D. Schrock, Omaha, read a paper on "Intra-Articular Fractures." Discussed by Drs. Paul A. McIlhenny,

New Orleans; Walter G. Stern, Cleveland; Albert H. Freiberg, Cincinnati; Melvin S. Henderson, Rochester, Minn.; Harry M. Sherman, San Francisco; Horace R. Allen, Indianapolis; Edwin W. Ryerson, Chicago; Willis K. West, Oklahoma City, and Robert D. Schrock, Omaha.

Dr. William L. Estes, Jr., South Bethlehem, Pa., read a paper on "The Occurrence and Causes of Functional Scoliosis in College Men." Discussed by Drs. Edwin W. Ryerson, Chicago; Melvin S. Henderson, Rochester, Minn.; Harry M. Sherman, San Francisco, and William L. Estes, Jr., South Bethlehem, Pa.

On motion, carried, a rising vote of thanks was extended to the chairman for the efficient manner in which the meeting had been conducted. Also unanimous vote of thanks was extended to the orthopedic surgeons of New Orleans for the painstaking way in which the details of social and professional entertainment had been carried out.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

WEDNESDAY, APRIL 28—AFTERNOON

The meeting was called to order at 2 p. m. by the chairman, Dr. Frank Smithies, Chicago.

Dr. Frank Smithies, Chicago, read the chairman's address, entitled "The Significance of Etiologic Factors in the Treatment of Peptic Ulcer."

Drs. George Reese Satterlee, New York, and Henry A. Cotton, Trenton, N. J., presented a paper on "Fractional Gastric Analyses." Discussed by Drs. J. Rawson Pennington, Chicago; John J. Gilbride, Philadelphia; W. H. Axtell, Washington, D. C., and George Reese Satterlee, New York.

Dr. J. Rawson Pennington, Chicago, read a paper on "The Differential Diagnosis of Amebiasis, Tuberculosis, Syphilis and Carcinoma, as Manifested in the Rectum and Pelvic Colon." Discussed by Drs. W. H. Stauffer, St. Louis; Sidney K. Simon, New Orleans; Ralph W. Jackson, Fall River, Mass.; John W. Draper, New York; William M. Beach, Pittsburgh; L. J. Hirschman, Detroit, and Frank Smithies, Chicago.

Dr. Edward G. Martin, Detroit, read a paper on "Hemorrhoidectomy: Composite Operation." Discussed by Drs. James A. Duncan, Toledo, Ohio; J. Rawson Pennington, Chicago; John J. Gilbride, Philadelphia, and Edward G. Martin, Detroit.

Dr. James T. Case, Battle Creek, Mich., read a paper on "Diverticula of the Small Intestine Other than Meckel's Diverticulum." Discussed by Drs. L. T. Lewald, New York; L. J. Hirschman, Detroit; A. A. Strauss, Chicago, and James T. Case, Battle Creek, Mich.

Dr. Ernest Clyde Fishbaugh, Los Angeles, read a paper on "Hypotension Headache in Relation to Constipation." Discussed by Drs. Elsworth S. Smith, St. Louis, and Ernest Clyde Fishbaugh, Los Angeles.

Dr. M. Milton Portis, Chicago, read a paper on "Diaphragmatic Hernia Diagnosed During Life." Discussed by Drs. James T. Case, Battle Creek, Mich.; Ernest Clyde Fishbaugh, Los Angeles; W. O. Nisbet, Charlotte, N. C.; F. A. Speik, Los Angeles, and M. Milton Portis, Chicago.

THURSDAY, APRIL 29—AFTERNOON

The chairman announced the appointment of Drs. R. Walter Mills, St. Louis; H. G. Walcott, Dallas, Texas, and J. R. Pennington, Chicago, to act as a nominating committee.

The following papers were read as a symposium on "Gastric and Duodenal Ulcers":

Dr. A. C. Ivy, Chicago: "Further Studies on Gastric and Duodenal Ulcer."

Dr. Elmer L. Eggleston, Battle Creek, Mich.: "Critical Review of Five Hundred Cases of Gastric and Duodenal Ulcer."

Dr. Israel O. Palefski, New York: "Intubation and Visualization of the Duodenum with the Duodenal Tube as a Diagnostic Procedure in Duodenal Ulcer and Periduodenal Adhesions: Summary of Findings of Three Hundred and Sixty-One Established Cases."

Dr. Angelo L. Soresi, New York: "Specialization in the Medical and Surgical Treatment of Ulcer of the Stomach and Duodenum."

These four papers were discussed by Drs. A. J. Ochsner, Chicago; Charles H. Neilson, St. Louis; Sidney K. Simon, New Orleans; J. S. Horsley, Richmond, Va.; Milton M. Portis, Chicago; John J. Gilbride, Philadelphia; J. A. Storck, New Orleans; Alfred A. Strauss, Chicago; J. M. Rector, Columbus, Ohio; A. C. Ivy, Chicago; Elmer L. Eggleston, Battle Creek, Mich.; Israel O. Palefski, New York, and Angelo L. Soresi, New York.

Dr. John W. Draper, New York, read a paper on "What Is Being Done for the Insane by Means of Surgery." Discussed by Drs. A. J. Ochsner, Chicago; Robert T. Morris, New York; Henry A. Cotton, Trenton, N. J.; G. R. Satterlee, New York, and John W. Draper, New York.

FRIDAY, APRIL 30—AFTERNOON

The following officers were elected for the ensuing year: chairman, Louis J. Hirschman, Detroit; vice chairman, H. W. Soper, St. Louis; secretary, Franklin W. White, Boston; delegate, Alois B. Graham, Indianapolis; alternate delegate, Sidney K. Simon, New Orleans.

The chairman announced the appointment of Drs. Anthony Bassler, New York; William M. Beach, Pittsburgh, and Frank Smithies, Chicago, as members of the Executive Committee for the ensuing year.

Dr. William H. Stauffer, St. Louis, read a paper on "Mucous Colitis." Discussed by Drs. Bertha Van Hoosen, Chicago; H. G. Walcott, Dallas, Texas; Louis J. Hirschman, Detroit; J. Rawson Pennington, Chicago; Sidney K. Simon, New Orleans; Ralph W. Jackson, Fall River, Mass.; J. M. Rector, Columbus, Ohio; Frank Smithies, Chicago, and William H. Stauffer, St. Louis.

Dr. J. Russell Verbrycke, Jr., Washington, D. C., read a paper on "Modification of Intestinal Flora." Discussed by Drs. Frank Smithies, Chicago, and J. Russell Verbrycke, Jr., Washington, D. C.

Dr. William S. Newcomet, Philadelphia, read a paper on "Arthritic Changes in the Spine and Their Relation to the Roentgenologic Study of the Gastro-Intestinal Tract." Discussed by Drs. Julius Grinker, Chicago; E. H. Skinner, Kansas City, Mo., and William S. Newcomet, Philadelphia.

Dr. Edward H. Skinner, Kansas City, Mo., read a paper on "The Roentgenology of the Appendix: The Significance of the Opaque Filling in Chronic Appendicitis." Discussed by Drs. R. Walter Mills, St. Louis; Marsh Pitzman, St. Louis; D. F. Jones, Boston; W. H. Stewart, New York; Israel D. Palefski, New York, and Edward H. Skinner, Kansas City, Mo.

REPORT OF THE COMMITTEE ON AWARDS

Your committee recommends the following awards:

To Dr. Edmond Souchon, a gold medal, for admirably prepared anatomic specimens.

To the Medical Department, U. S. Army, a silver medal for an exhibit of pathologic preparations, excellent in appearance and highly instructive.

To Dr. Victor D. Lespinasse, a certificate of merit, for interesting and suggestive experiments on spermatogenesis and sterility.

To Dr. Martin H. Fisher, a certificate of merit for an extensive display of soap preparations in relation to colloid chemistry.

In view of the grave importance of venereal disease and the fundamental need for diffusing information regarding the dangers of these diseases to the individual and to the race, the committee wishes to commend the exhibits presented this year showing methods of sex education and to express the hope that such exhibits may be elaborated and made more prominent features of the Scientific Exhibit in the future.

W. B. CANNON,
H. H. CHRISTIAN,
E. R. LECOUNT.

REGISTRATION AT NEW ORLEANS

The total registration at the New Orleans Session was 3,681. Below are given two summaries, one by sections and one by states:

REGISTRATION BY SECTIONS	
Practice of Medicine	1,160
Surgery, General and Abdominal	857
Obstetrics, Gynecology and Abdominal Surgery.....	230
Ophthalmology	218
Laryngology, Otology and Rhinology.....	207
Diseases of Children	152
Pharmacology and Therapeutics	25
Pathology and Physiology	62
Stomatology	30
Nervous and Mental Diseases	92
Dermatology and Syphilology	69
Preventive Medicine and Public Health	108
Urology	103
Orthopedic Surgery	66
Gastro-Enterology and Proctology	69
Registrations without specifying any one section.....	233
Total	3,681

REGISTRATION BY STATES			
	Number		Number
Alabama	184	Nevada	2
Arizona	12	New Hampshire	1
Arkansas	94	New Jersey	13
California	59	New Mexico	2
Colorado	33	New York	121
Connecticut	7	North Carolina	50
Delaware	1	North Dakota	9
District of Columbia	57	Ohio	134
Florida	46	Oklahoma	78
Georgia	100	Oregon	8
Idaho	2	Pennsylvania	108
Illinois	264	Rhode Island	8
Indiana	62	South Carolina	33
Iowa	78	South Dakota	6
Kansas	35	Tennessee	149
Kentucky	68	Texas	394
Louisiana	693	Utah	5
Maine	4	Vermont	1
Maryland	15	Virginia	26
Massachusetts	40	Washington	10
Michigan	72	West Virginia	18
Minnesota	76	Wisconsin	56
Mississippi	257	Wyoming	2
Missouri	124	Foreign countries	27
Montana	4		
Nebraska	33	Total	3,681

The Digestibility of Foods.—Two factors largely determine the digestibility and absorption of foods in the process of digestion: The first is the bulk; the second is the cellulose content. The bulkiness of vegetable food interferes with digestion in two ways. The digestive juices have difficulty in penetrating such a mass so that the conversion of the constituents into products capable of absorption is apt to be quite inefficiently carried out, and the large mass has a tendency to hasten the intestinal peristalsis, the contents of the gut are thus pushed forward too rapidly; and even were digestion more complete, the absorption could not keep pace with the food movement. The presence of cellulose is the second great factor in the retardation of digestion and absorption. In the case of meat, the nutritive constituents are held in tubes composed of gelatin which readily digest; in the case of vegetables, the starch is contained in cubical compartments with walls of cellulose. Cellulose is a carbohydrate, belongs to the class of polysaccharids, and is especially characterized by its extraordinary insolubility. From this it can be seen that the presence of cellulose influences digestion and absorption in several ways. It not only has little or no food value of itself, but it prevents the access of digestive juices to the mass of food in the stomach, and it prevents the juices penetrating to the individual starch cells. Further, by increasing the mass to such an extent it has a tendency to stimulate the intestinal movements and hasten the progress of the food.—C. C. Mason, *Bull. Johns Hopkins Hosp.*, March, 1920.

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SATURDAY, MAY 15, 1920

TAKAKI'S WORK IN BERIBERI

The announcement of the death in Tokyo of Baron K. Takaki, former inspector general of the Japanese navy, recalls his classic experiences in eradicating beriberi among the sailors by change in diet. He had long been familiar with the disease among groups of Japanese, and he recalled that some years before he entered the navy of his country in 1872, many deaths from it had been observed by his father. Even at that time the cause of beriberi was attributed by some to food, and the provision box was called the beriberi box.¹

In his early medical experience in the navy, Takaki encountered a large number of patients suffering and dying from beriberi. In 1875 and later they frequently constituted three fourths of the whole number of persons in the naval hospital. After prolonged studies in Europe, Takaki returned to Japan in 1880 only to find conditions unchanged with respect to a scourge that threatened to destroy the efficiency of the Japanese navy. In 1883 a careful examination of the hygienic conditions of ships, barracks, schools, etc., belonging to the Japanese navy disclosed that they were much alike everywhere, except for the item of food. In this there were great variations in different places. Finding that the rations in some posts contained much carbohydrate with relatively little protein, and being of the opinion that a man requires 20 gm. of nitrogen, that is, 135 gm. of protein, a day, for proper physiologic maintenance, Takaki came to think that beriberi is caused by the disproportion of nitrogenous and non-nitrogenous components of the diet. The former were regarded as insufficient, the latter as excessive in the objectionable rations.

Takaki's proposals to change the old dietary system in which rice, rich in carbohydrate and poor in protein, predominated were regarded as extremely radical, and met great opposition. After investigation of the cruise of the training ship *Ruijo* on which 169 cases of beriberi with twenty-five deaths occurred among 276 men during 272 days, permission was granted to

institute a trial of the new ration, including milk and meat, on a cruise over the same route in the *Tsukuba*. In the course of a 287 days' voyage only four cadets and ten men were attacked by beriberi, and on investigation it was found that all of these had refused to eat certain parts of the ration provided, such as condensed milk and meat. When the good report of the experimental voyage of the *Tsukuba* became known, all opposition to the reformed ration was withdrawn, and it at once went into general effect.

The upshot of Takaki's work had been to show that although the sanitary conditions in the Japanese navy were not inferior to those in other navies at the same time, beriberi had been rampant. This disease had not broken out in ships of European nations sent to the Orient, exposed to the same climatic conditions, and performing similar duties. But the Japanese ate rice almost exclusively, omitting the bread and meat furnished to others. The diet reforms promptly produced beneficent effects. At the time referred to there were frequent objections to the validity of Takaki's theory of protein starvation as the explanation of the etiology of beriberi. This is no longer tenable in the light of recent investigations. As Vedder has stated, there cannot be a shadow of a doubt that beriberi was reduced in the Japanese navy as a result of a change of diet.

This change consisted in a reduction of the amount of rice consumed and an increase of meat, fish, vegetables, including beans, and the addition of milk and flour. What Takaki did, however, from the standpoint of present-day knowledge is to reintroduce, into a dietary largely made up of polished rice poor in antineuritic vitamin, articles of food which supply the deficiency. He neither removed a hypothetical infection, as many had contended, nor merely enriched the diet in protein; Takaki improved the physiologic quality of the ration of the navy. His experiences form an interesting chapter in the history of diet in relation to disease.

GAS CYSTS OF THE ABDOMEN

Gas cysts in the abdomen have long been known to occur in animals, particularly the hog; but it was not until 1876 that Bang published the first description of these lesions in a human being. Since that time sixty-six cases have been described in the literature, and only recently have the anatomic details been developed. The development and course of this condition are such that it may occur more often than is generally supposed. The lesions have a characteristic macroscopic appearance: Gas cysts may occur generally throughout the abdomen, multiple, disseminated, most commonly in the small intestine, mesentery and omentum, varying in size from the head of a pin to a plum, and containing an odorless, nonirritating gas

1. This and other details are quoted from Vedder, E. B.: *Beriberi*, New York, William Wood & Co., 1913.

made up of combinations of hydrogen, carbon, oxygen and nitrogen. Occasionally the cysts are grouped into a mass the size of a fist, causing pressure on the surrounding viscera. Palpation gives a crackling similar to that of an emphysema. The various descriptions of the size, location and character of the cysts are considered by Tuffier and Letulle¹ to be due to the fact that the observers have encountered the disease at different stages.

In the small intestine the cysts may be found in the submucous and subserous layers with a wall of dense fibroid tissue, poor in fixed cells and blood vessels, in which elastic fibers appear, but no smooth muscle. The lumen is bounded by a layer of endothelial and multinucleated giant cells, and a characteristic thick fluid is sometimes present in the dependent part of the cavity. Accompanying changes in the wall of the intestine indicate the presence of a long standing chronic inflammation. In all cases it is noted that the cysts lie in a definite relation to a lymphatic vessel which has been partially or totally obliterated.

It is this relationship of cyst, cicatrix and lymph vessel that has led Letulle,² from whose articles much of this information is taken, to the conclusion that the cysts have their origin in obstruction to the flow of lymph by a chronic obliterating lymphangitis which is a part of a rather generalized chronic inflammatory process. The origin of the gas is not so clear. At present there are two views: the one, infectious, attributing the gas to a small liquefying coccus or to *B. coli*; the other, mechanical, a complication of a chronic obliterating lymphangitis with stagnation of lymph and subsequent change to gas under pressure. The details of this transformation are not worked out, and it is far from clear why, as has been frequently observed, there is such a rapid disappearance of the cysts after the abdomen is opened; Kadyan, however, operated on the same patient three times in five months, and noticed each time a new eruption of cysts. Karsner, reporting on the pathology of Sloan's³ case, suggests that "the condition is a subacute or chronic interstitial emphysema of the gut," the gas entering from without by way of an ulcer and being carried distally by peristaltic action. However, this does not account for the presence of the gas cysts in the peritoneum and omentum.

There is no characteristic symptomatology, the condition being encountered in all cases, thus far, unexpectedly or accidentally. Gastro-intestinal disturbances, such as nausea, vomiting, diarrhea and acute intestinal obstruction, have been produced by the mechanical action of the cysts. Of the instances col-

lected by Lenormant,⁴ twenty-one were diagnosed at necropsy and thirty-six at operation, and it is the belief of Moreau⁵ that only through the use of the roentgen ray can the condition be identified before operation.

It is interesting to note that frequently this disease is associated with other lesions of the gastro-intestinal tract, particularly ulcer of the stomach. There are, of course, many questions in regard to gas cysts not yet explained, but the condition should be recognized more often in this country. It appears that three cases have been reported.³

THE MECHANISM OF RECOVERY FROM LOBAR PNEUMONIA

A perusal of the medical literature of only a few years ago in comparison with present-day writings on the subject of pneumonia will give convincing evidence of the marked strides that have been made in the recent study of this important malady. Lately it has been the etiologic classification of the disease types that has been foremost in the consideration of clinicians. This, of course, has involved a better understanding of the bacteriology of pneumonia, on the one hand, and an investigation of corresponding therapeutic or prophylactic measures, on the other. Pneumonia has been produced experimentally in animals by the introduction of pure bacterial cultures into the bronchi. Although much has been learned from such studies, they have not been conclusive in their applicability to the conditions observed in the disease of man.

A review of the present status of studies in experimental pneumonia, recently published in *THE JOURNAL*,⁶ indicates that lobar pneumonia is bronchiogenic in character. Invasion of the blood stream by pneumococci is secondary to the introduction of the micro-organisms into the lower respiratory tract. A true lobar pneumonia cannot be produced by subcutaneous or even intravenous introduction of the pneumococcus into the system, although a septicemia may develop under such circumstances. In their studies of the disease in monkeys, Blake and Cecil⁷ have observed pneumococcus septicemia persisting after the pneumonia crisis and resolution; likewise cases of unresolved pneumonia in which the pneumococci had entirely disappeared from the blood yet which resulted in death.

Such experiences have suggested that more than one factor may be involved in the mechanism of recovery from lobar pneumonia. In the escape from the general

4. Lenormant, C.: Kystes gazeux de l'abdomen, *Presse méd.* **28**: 104 (Feb. 7) 1920.

5. Moreau: Sur un cas d'hépatoptose par interposition avec kystes gazeux de l'intestin; examen radiologique vérifié par l'intervention, *Arch. d'électr. méd.* **27**: 393 (Sept.) 1917.

6. Experimental Lobar Pneumonia, editorial, *J. A. M. A.* **74**: 1168 (April 24) 1920.

7. Blake, F. G., and Cecil, R. L.: Studies on Experimental Pneumonia, I, Production of Pneumococcus Lobar Pneumonia in Monkeys, *J. Exper. Med.* **31**: 403 (April) 1920; II, Pathology and Pathogenesis of Lobar Pneumonia in Monkeys, *ibid.*, p. 445.

1. Tuffier, T., and Letulle, Maurice: Sur une maladie caractérisée par des kystes gazeux de l'abdomen, *Bull. de l'Acad. de méd.* **82**: 5 (July 1) 1919.

2. Letulle, Maurice: Les kystes gazeux de l'intestin et du péritoine, *Bull. de l'Acad. de méd.* **82**: 315 (Nov. 18) 1919; *Presse méd.*, Dec. 20, 1919.

3. Sloan, H. G.: Gas Cysts of Intestine, *Surg., Gynec. & Obst.* **30**: 329, 1920.

infection an immunity mechanism of a humoral sort is undoubtedly involved. The possible rôle of circulating antibodies is admitted. But as the prevention or termination of the general infection does not always coincide with recovery from the local processes with resolution of the pneumonic consolidation, it seems highly probable that the latter may depend in part at least on something other than humoral immunity—than antibodies. Perhaps, as Blake and Cecil propose, the crisis and resolution of the pneumonic process may be due to local biochemical changes in the course of which, as suggested by Lord,⁸ the acid death point of the pneumococcus is reached. If so, final recovery from lobar pneumonia may involve a dual mechanism, and future considerations of the problem must keep the possible significance of the two factors distinctly in mind. One concerns most directly the local pulmonary lesion; the other is important as well for the secondary general infection by the pneumococcus.

Current Comment

DUST AND PHTHISIS

Dust inhaled is popularly regarded as a source of danger to the organism, particularly by predisposing to pulmonary tuberculosis. Experience has demonstrated, however, that not all dusts are to be put into a common category. If there are no benevolent dusts, some at least seem to be far less deadly than others, although all forms of them enter the lungs. Investigations made in South Africa have demonstrated, for example, that a condition known as pneumoconiosis results from dust particles setting up cell proliferation which ends in the production of dense connective tissue. The latter occurs first in nodules which may subsequently coalesce, obliterating large portions of air-containing vesicles. Sufferers from this condition are peculiarly liable to pulmonary tuberculosis, as miner's phthisis and potter's rot. Some dusts, notably soot and coal dust, appear, however, to be comparatively harmless. An attempt to explain this has been made by Mavrogordato⁹ in a report to the British Medical Research Committee in London. It appears that marked differences appear in the readiness with which different kinds of dust are eliminated from the lung tissue. Some produce a marked initial reaction, with much shedding of epithelium. In these shed cells, coal and shale are promptly removed, so that they do not set up processes which block the lymphatics. On the other hand, flue dusts and silica are taken up by cells which tend to remain in situ and form plaques which appear early and persist. They become the sites of fibrosis. From the current investigations it further appears that dusts, like coal, which produce an initial reaction tend to carry out with them the more inert kinds of particles. The dusts which make most mis-

chief appear to be those tending to accumulate rather than to be promptly eliminated. Corper¹⁰ has found a correlation between these facts and the effect of lamp black and pulverized glass, respectively, on the acceleration of experimental tuberculosis in the guinea-pig. Glass, which resembled the quartz dusts, had a markedly accelerating influence, whereas the carbon particles likewise injected subcutaneously coincident with tubercle bacilli exhibited a retarding effect. Whether this beneficent outcome is due to some inherent antiseptic property introduced with the coal or soot or to a biologic reaction cannot be stated at present. However, the facts help to explain why "phthisis is not as common among coal miners as among the ordinary population in spite of the marked amount of anthracosis developed in the lungs from the inhaled dust."

COUNTING BLOOD PLATELETS

To most physicians the blood platelets are known merely as structural elements present along with the familiar erythrocytes and leukocytes in the blood. Beyond this, the existence of these somewhat irregular particles carries no special significance to most clinicians not specially trained in the methods of hematology. This is doubtless due in large measure to the difficulties that have attended the accurate estimation of the occurrence of the platelets in specimens of blood, as well as to the lack of knowledge which still enshrouds their origin, fate and functions. The content of the other formed elements or corpuscles of the blood is now readily ascertained with considerable exactness, and the significance of high or low "counts" in relation to various pathologic conditions is well understood. It is not surprising, however, that confusion and uncertainty exists in the case of the platelets; for at present the statements as to their normal occurrence in blood show figures varying as much as 300 to 400 per cent., namely, from 200,000 to 800,000 per cubic millimeter of blood. Part of the difficulty thus recorded is attributable to the labile character of these structures. Unless specially conserved, they disintegrate with great readiness in shed blood. The actual counting of the "third corpuscular elements" of the blood has encountered additional obstacles, which need not be recounted here. Lately a new technic, developed by Thomsen¹¹ for counting the platelets in citrated plasma has been made the subject of special investigation by Gram¹² in Faber's clinic at Copenhagen. The method appears to be more reliable than any other at present in vogue; by it the majority of the determinations show platelet counts between 300,000 and 450,000 per cubic millimeter. Although in normal persons the number rarely falls below 300,000, the more extreme range for seemingly healthy persons may be put at from 200,000 to 500,000 per cubic millimeter of blood. There have been frequent attempts in the past to correlate aberrant platelet counts with hemorrhagic diseases of various types.

10. Corper, H. J.: Further Attempts to Reduce the Resistance of the Guinea-Pig to Tuberculosis, *Am. Rev. Tuberc.* **3**: 605 (Dec.) 1919.

11. Thomsen, O.: *Hospitaltidende* **62**: 161 (Feb. 5) 1919.

12. Gram, H. C.: On the Platelet Count and Bleeding Time in Diseases of the Blood, *Arch. Int. Med.* **25**: 325 (March) 1920.

8. Lord, F. T.: *J. Exper. Med.* **30**: 389 (Oct.) 1919.

9. Mavrogordato, A.: Experiments on the Effects of Dust Inhalations, *J. Hyg.* **17**: 439 (Oct.) 1918.

Thus, the platelets have long been assumed to be associated in some way with the clotting of the blood. Gram has observed, in accord with this, that when the platelet count falls below 100,000 per cubic millimeter the "bleeding time," determined by Duke's well known method, tends to be prolonged; that is, the blood clots more slowly than usual. The platelets are diminished in number in pernicious anemia, in most cases of lymphatic leukemia, and in some cases of myeloid leukemia. Normal values are found in hemophilia, and augmented values are found in many cases of simple anemia and some of myeloid leukemia. According to Gram, the counting of the platelets and determination of the bleeding time is of extreme importance as a preoperative measure, especially in cases of aplastic anemia, in which an operation often is performed for explorative purposes, on suspicion of occult cancer.

CALCIUM METABOLISM IN LEPROSY

Destructive processes of various sorts are sequelae of leprosy invasion of the body. Among such changes, necrosis resulting in the loss of pieces of bone and atrophy of osseous structures may occur. The consequences are exhibited in the altered mineral metabolism observed in leprosy, as has recently been demonstrated by Underhill, Honeij and Bogert¹ in an unusually elaborate series of examinations on leprosy patients at the Yale University School of Medicine. Compared to normal persons under the same dietary conditions, such patients retain calcium in relatively large quantities, whether they are maintained on a calcium-poor or a calcium-rich diet; and the greater the intake of calcium, the greater is the relative retention. In the more advanced stage of the disease, the degree of retention is greater than in the early phase. There is likewise a positive balance in the case of magnesium in the advanced stages of leprosy, although the retention of this element is much less marked than that of the more conspicuous bone-forming calcium. According to Underhill and his colleagues, the retention of calcium is the expression of a metabolic demand—a need induced by the loss of bone-salt in the disease. Hence they suggest that quite likely in dietary conditions in which calcium is not particularly abundant, the lack of this element may be an important factor in the rapidity of the progress of the disease; for this may be greatly retarded, or perhaps even alleviated, if an abundance of calcium is present in the diet.

CHIROPRACTIC—LUX ON SUBLUXATIONS

Members of the medical profession have long been at a loss to know just what "chiropractic" is. They know what "chiropractors" are, but "chiropractic"—that has been a mystery! It remained for the Senate and General Assembly of the State of New Jersey to elucidate. An Act to Regulate the Practice of Chiropractic recently signed by the Governor of New

Jersey gives to a palpitating medical world this vital information. Here is the opening paragraph of the act:

DEFINITION OF CHIROPRACTIC: The term chiropractic when used in this act shall be construed to mean and be the name given to the study and application of a universal philosophy of biology, theology, theosophy, health, disease, death, the science of the cause of disease and art of permitting the restoration of the triune relationships between all attributes necessary to normal composite forms, to harmonious quantities and qualities by placing in juxtaposition the abnormal concrete positions of definite mechanical portions with each other by hand, thus correcting all subluxations of the articulations of the spinal column, for the purpose of permitting the recreation of all normal cyclic currents through nerves that were formerly not permitted to be transmitted, through impingement, but have now assumed their normal size and capacity for conduction as they emanate through intervertebral foramina—the expressions of which were formerly excessive or partially lacking—named disease.

Lucidity itself! The New Jersey legislature said, "Let there be light on Chiropractic"—and, behold, it became the "art of permitting the restoration of the triune relationships between all attributes necessary to normal composite forms, to harmonious quantities and qualities . . ." Simplicity to the *n*th power. Bring on your Einstein theory—the New Jersey solons may oblige with a snappy definition.

ENFORCED TEMPERANCE IN EUROPE

The advocates of prohibition are already beginning to marshal statistics as to the result of the abolition of the liquor traffic on the welfare of the nation. It will not be easy to establish the relation of cause and effect in the various phenomena of change in which benefit or disadvantage may be claimed. The altered social and economic conditions following the war have brought about new conditions of living and standards of conduct the precise effect of which on the people of the United States remains to be clearly ascertained. However, in the matter of restriction of the consumption of alcohol, if not its entire prohibition, this country has not stood entirely alone in recent years. During the war our allies and the enemy country restricted the manufacture of alcoholic beverages; and the neutrals surrounding the Central Empires did likewise. A curtailment has, moreover, followed not only through legal restrictions on sales which confined public drinking to certain hours and places, but also as the direct result of scarcity and high prices which made purchases difficult. This has been particularly true of the strongly alcoholic beverages, like brandy. The benefits of temperance to the thousands of men in the armies can scarcely be debated. An elaborate investigation made by a commission of scientists and clinicians for the German government and published in 1919¹ affords interesting conclusions for the civilian population of a country accustomed to liberal indulgence in alcoholic drinks. It appears, particularly

1. Underhill, F. P.; Honeij J. A., and Bogert, L. J.: Calcium and Magnesium Metabolism in Certain Diseases, *Proc. Nat. Acad. Sc.* 6: 79 (Feb.) 1920.

1. Welchen Einfluss hat der während des Krieges innerhalb der bürgerlichen Bevölkerung verminderte Alkoholgenuss auf die geistige und körperliche Gesundheit des Volkes gehabt? Beratung der erweiterten Wissenschaftlichen Deputation für das Medizinalwesen am 20 September, 1919, im Ministerium für Volkswohlfahrt zu Berlin, *Vrtljschr. f. gerichtl. Med.* 59: 1 (Jan.) 1920.

from the report of Professor Partsch, that in Prussia, as a result of restricted drinking, there was an extraordinary decrease of chronic alcoholism and the mental disorders attendant on it. Related bodily illnesses were also diminished. The decrease in psychic maladies was widespread, not being confined to any portion of the empire. The report finds special occasion to note the restoration of former chronic drunkards in many cases to an economically useful career. Contrary to what is alleged by some of the defenders of alcohol in this country—on what basis we do not know—the habitual use of morphin or cocain is not interpreted by the Prussian medical commission as the outcome of restriction in the availability of alcohol. It insists that the desire for strong alcoholic stimulants among the population has by no means become suppressed. Only the excessive cost and the restricted supplies are believed to stand in the way of a return to former habits, now that peacetime conditions are being restored abroad. If temperance enforced by the exigencies of a war has in truth exercised a highly beneficent influence on the nations, the problem of retaining its essential benefits is surely one worthy of consideration in any propaganda for the public health.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

University of Southern California Suspends Medical Teaching.—By a unanimous vote, the trustees of the University of Southern California, on April 13, decided to temporarily suspend the medical department because of inadequate endowment with which to maintain it.

Botulism a Reportable Disease.—Under date of April 9, the secretary of the state board of health issued a bulletin declaring botulism a reportable disease, and requesting physicians to make prompt reports of this disease to the local health officers and asking also that information be sent concerning probable causative food factors.

Personal.—Dr. Albrecht O. Eckardt, Downieville, health officer of Sierra County for several years, has been appointed resident physician for the Claymath Indian Reservation with headquarters near Claymath Falls.—Dr. Frank P. Gray, G. M. Stratton and Dr. Emanuel C. Fleischner of the faculty of the University of California have been given leave of absence for portions of this and next year.

San Francisco Physicians to Fight Medical Law Changes.—At a meeting of the San Francisco County Medical Association, held April 13, plans were made to fight, in the coming general election, the following issues which the organization considers would be letting down the bars to unscientific systems of medicine: an initiative measure to establish an independent board of chiropractic examiners; referendum on the drug law to give osteopaths the right to prescribe drugs; antivivisection legislation, and efforts to lower medical certificate requisites.

DISTRICT OF COLUMBIA

Gift for Howard Medical School.—It is announced that Howard University School of Medicine, Washington, has been promised \$250,000 by the general education board, provided the medical school succeeds in raising the rest of a total sum of \$500,000.

Medical Society Against Unlicensed Anesthetists.—At a recent largely attended meeting of the Medical Society of

the District of Columbia a resolution was adopted after animated debate putting the society on record as in favor of the limitation of the practice of anesthesia to regularly licensed physicians and surgeons and dentists, and graduate nurses in cases of emergency or medical students for purposes of instruction. This action was prompted by the recent substitution in certain of the local hospitals of salaried resident anesthetists for the physician anesthetists connected with the medical staff, the new appointees being nurses specially trained in anesthesia work.

Cornerstone Laid of Medical Society Building.—On May 6 the cornerstone of the new home of the Medical Society of the District of Columbia was laid. The ceremonies were presided over by Dr. Charles W. Richardson, the stone being laid by the officers of the society, the president, Dr. Francis R. Hagner, spreading the mortar. Addresses were made by Dr. Hagner, Dr. Wilfred M. Barton, Dr. Joseph S. Wall and Dr. John B. Nichols. Dr. Tom A. Williams also made a short address in presentation of a handsome donation from a friend whom he had interested in the project. The building is located at 1716-1718 M Street N.W. It is hoped that it will be ready for occupancy in November. When complete, the medical society will possess a handsome, commodious and comfortable home, which will also be a distinct addition to the architectural beauties of Washington.

ILLINOIS

Tuberculosis Clinics.—The second of the series of free tuberculosis clinics will be held at the court house, Edwardsville, May 26, under the auspices of the Madison County Medical Society. Dr. George T. Palmer, Springfield, will be in charge of the clinic.

Sanatorium Opened.—Adams County has recently opened a tuberculosis sanatorium at Quincy with a capacity of twenty-five patients. It is under the charge of Dr. Harry C. Worthington, formerly senior physician to the Cook County Tuberculosis Hospital, Oak Forest.

Tri-City Officers Elected.—The Tri-City Medical Society held its annual meeting, April 15, and elected Dr. Benjamin H. King, president; Dr. Alfred E. Everett, vice president; Dr. Hugo C. H. Schroeder, secretary, and Dr. Frank O. Johnson, treasurer, all of Granite City.

Chicago

Hospital Journal Moves.—The *Modern Hospital* has announced the removal of its editorial and business offices to the Modern Hospital Building, 22-24 East Ontario Street.

Ricketts Prize Awarded.—The Howard Taylor Ricketts Prize of the University of Chicago for 1920 has been awarded to Ivan C. Hall for his work on "Studies in Anaerobiology." This prize is awarded annually on May 3, the anniversary of the death of Dr. Ricketts from typhus fever, while engaged in work on this disease in Mexico City in 1910.

Anthrax Outbreak.—Six cases of anthrax were reported during the first week in May with five deaths. The disease is believed to have been contracted through infected horse hair received from Russia and Argentina, last winter. The Chicago Curled Hair Factory, among the employees of which this disease occurred, was closed by the health department, May 5.

INDIANA

Personal.—Dr. Carleton B. McCulloch, Indianapolis, was nominated for governor on the democratic ticket at the primary election, May 4.—Drs. Charles B. Kern, Lafayette, and John H. Hewitt, Terre Haute, have been reappointed members of the state board of health.—Dr. Obediah H. Garrett, Cadiz, is seriously ill as the result of a cerebral hemorrhage.—Dr. George A. Harrop, Jr., South Bend, has been awarded a traveling fellowship for the study of physiology in Denmark.

Hospital Items.—Shelbyville is to have a new hospital which is estimated to cost \$225,000. A site for the building was recently purchased for \$11,000. The institution will have accommodation for fifty patients.—A memorial hospital is to be established at Jeffersonville in honor of the soldier dead of Clark County.—Home Hospital, Muncie, is to be transferred to the board of governors, who will operate it as a public health hospital.—The Indiana Manufacturers' Reciprocal Association will establish in Indianapolis a physiotherapy hospital wherein workmen injured in industries in the factories of the association are to be rehabilitated to a degree that will allow them to reenter their fields of

labor.—The county board of Allen County has decided to build an addition to the County Isolation Hospital sufficient to offer at least temporary relief during the present prevalence of scarlet fever in Fort Wayne.

LOUISIANA

Personal.—Dr. Mayer A. Newhauser, Shreveport, has resigned as assistant health officer.—Dr. Sidney L. Williams has resigned as a member of the Shreveport Board of Health.

State Society Election.—At the annual meeting of the Louisiana State Medical Association held in New Orleans, April 27, the following officers were elected: president, Dr. Homer J. Dupuy, Jr., New Orleans; vice presidents, Drs. Beverly W. Smith, Franklin, William H. Harris, New Orleans, and Daniel O. Willis, Leesville; secretary-treasurer, Dr. Paul T. Talbot, New Orleans, and councilors—first district, Dr. Paul Gelpi, Jr., New Orleans; second district, Dr. George S. Bel, New Orleans; third district, Dr. Frank T. Gouaux, Lockport; fourth district, Dr. Joseph E. Knighton, Shreveport, and fifth district, Dr. Thomas E. Wright, Monroe.

MARYLAND

New Officers.—At the annual meeting of the Cecil County Medical Society, Dr. Vernon H. McKnight, North East, was elected president and Dr. Howard Bratton, Elkton, secretary-treasurer.

Health of Schoolchildren in Maryland.—In response to a request from the state and local health and educational authorities, the Public Health Service is conducting a survey and demonstration concerning the health of schoolchildren in Cecil County, Maryland.

Personal.—A portrait of Dr. William H. Welch, president of the University Club of Baltimore, was presented to the club recently at its monthly meeting. A large gathering of club members and friends of Dr. Welch witnessed the presentation. Dr. William S. Baer, chairman of the committee in charge of the presentation, presided.—Dr. Otis M. Linthicum has been elected mayor of Rockville, Md.

Medical Faculty to Convene.—The Medical and Chirurgical Faculty of Maryland will hold its one hundred and twenty-second annual meeting, May 11, 12 and 13, at the faculty building, Baltimore, under the presidency of Dr. John Ruhräh, Baltimore. A session of delegates at Osler Hall will open the program, which includes scientific meetings, clinics at various hospitals and the annual smoker of the organization.

Medical Society at Johns Hopkins.—Members of the William Pepper Medical Society of the Medical Department of the University of Pennsylvania came to Baltimore, May 8, and, conducted by members of the Johns Hopkins Medical Society, visited the School of Hygiene and Public Health, the Johns Hopkins Hospital and the Johns Hopkins University. Addresses by the most prominent physicians connected with the hospital were made both at the School of Hygiene and in the amphitheater of the surgical building, Johns Hopkins Hospital. Luncheon was served on the top floor of the Phipps Psychiatric Clinic, and in the evening an informal smoker was held at the home of Dr. Joseph Colt Bloodgood, Roland Park.

Fort McHenry for Federal Hospital.—The War Department has definitely announced that U. S. General Hospital No. 2, at Fort McHenry, will be turned over to the U. S. Public Health Service for its war risk insurance work, as soon as the hospital buildings are given up by the Medical Corps of the Army. Owing to the great need of caring for the sick and disabled discharged soldiers, the War Department has transferred this post to the Public Health Service for this purpose, and at the same time has informed the special committee appointed by the mayor of Baltimore City, that the post could not be used as a municipal hospital, since by act of Congress, it was stipulated that it should be used only as a public park by Baltimore City.

MICHIGAN

Personal.—Dr. Frederick G. Novy, Ann Arbor, has been elected a corresponding member of the Society of Biology of Paris, and an associate member of the Royal Society of Medical and Natural Sciences, Brussels.

Increase in Smallpox.—During the week, ended May 1, sixty-one new cases of smallpox were reported in Detroit, an increase of twenty-eight over the previous week. Of the

cases thus far reported sixty-seven have been among the white population, and thirty-one among the colored population of the city.

MINNESOTA

Southern Minnesota Physicians to Meet.—The midsummer meeting of the Southern Minnesota Medical Association will be held in Fairmont, June 28 and 29. Dr. Walter J. Richardson is chairman of the committee of arrangements.

Clinic Week in Minneapolis.—More than 500 physicians attended the third annual clinic of the Hennepin County Medical Society, April 20 to 23. During those days clinics were conducted in all hospitals in Minneapolis, illustrated lectures were given in the afternoons and special meetings were held in the evenings. Dr. Charles Harrison Frazier, Philadelphia, at the annual banquet, April 20, delivered an address on "Surgery of the Nervous System."

Enrolment in Mayo Foundation.—During the current quarter which began April 1, 151 graduate students have been registered in the Mayo Foundation for Medical Education and Research, Rochester. Each of these students is registered for a period of three years or more. The fellows, 130 in number, are distributed as follows: surgery, 86; internal medicine, 20; otolaryngology and rhinology, 7; urology, 5; ophthalmology, 4; pathology and dermatology, each 2, and chemistry, bacteriology, roentgenology and orthopedics, each 1. Among the scholars who are not candidates for advanced degrees are 10 in surgery; 4, in dental surgery; 2, in orthopedics; and one each in roentgenology, internal medicine, dermatology, urology, and otolaryngology and rhinology.

MISSOURI

Brooklyn Physician in Kansas City.—At the meeting of the Jackson County Medical Society, May 4, Dr. John Osborn Polak, Brooklyn, delivered an address on "Present Day Operative Procedures in Obstetrics," illustrated with lantern slides.

Personal.—Dr. Ersel M. Fessenden has been appointed first house surgeon of the Frisco Hospital, Springfield, succeeding Dr. J. Omar Moore, resigned.—Dr. Roche W. Hogeboom has been appointed assistant consulting surgeon of the Frisco Hospital, Springfield.—Dr. Abraham Sophian, Kansas City, has been presented with a house and grounds valued at \$82,000 in appreciation of medical services rendered to the wife of the donor.—Dr. Hasbrouck DeLamater, St. Joseph, has been appointed health officer of Norfolk County, Va.

To Increase Salaries at St. Louis University.—This month the alumni and friends of St. Louis University launch a movement to provide the institution with an endowment fund of \$2,000,000 in commemoration of its first century of service in higher learning. The income on one half of the fund sought will be used to increase the salaries of teachers in the schools of medicine, dentistry, commerce and finance and the institute of law. For the provision of a laboratory for the school of medicine, a fund of \$250,000 is to be provided; and after these immediate needs have been cared for, a total of \$550,000 of the fund will be used to establish new clinics and to erect new buildings for the schools of medicine and dentistry. The St. Louis University opened its first school of medicine in 1836, four years after the institution received its charter. The school has been running with annual deficits for the last five years, the largest being for the school year ended in June, 1919, when the expenditures exceeded the receipts by more than \$20,000.

NEW JERSEY

Society to Meet.—The one hundred and fifty-fourth annual meeting of the Medical Society of New Jersey will be held in New Monmouth Hotel at Spring Lake, June 15 to 17, under the presidency of Dr. Gordon K. Dickinson, Jersey City.

Personal.—Dr. William J. Chandler, South Orange, secretary of the Medical Society of New Jersey, who met with a serious accident recently, is now reported to be convalescent.—Dr. Thomas W. Harvey, Orange, after thirty-eight years' service as attending surgeon at the Orange Memorial Hospital, has resigned and has been succeeded by Dr. Douglas A. Cater of East Orange. Dr. Ralph H. Hunt, East Orange, has been appointed attending physician to the hospital.—Dr. M. Charles Mackin, assistant superintendent of the New Jersey Institution for Feeble-minded, Skillman, has been appointed superintendent of the Mount Pleasant, Iowa, State Hospital, succeeding Dr. Charles F. Applegate.

NEW YORK

Health Council for Albany.—Representatives of the ten official and volunteer health agencies of Albany and vicinity have organized a health council for the purpose of securing better coordination in health work. Other organizations having health affiliations will be invited to join. Mr. Edward H. Huyck has been elected chairman; Miss Gertrude J. Owen, corresponding secretary, and Mr. Lewis R. Screenley, recording secretary.

Personal.—Dr. Harold W. Lyall, for nine months bacteriologist on the staff of the state laboratory, has accepted the position of bacteriologist of the Mellen Research Laboratories, Tuberculosis League, Pittsburgh, and of associate in the department of bacteriology and pathology in the Medical School of the University of Pennsylvania.—Miss Pearl L. Kendrick, a member of the state laboratory staff, has resigned to accept a position in the laboratory of the state department of health of Michigan.—Dr. Charles A. Howland, Schenectady, for eight and one-half years assistant sanitary engineer of the division of sanitary engineering, has resigned to accept a position in Kansas City.

Mental Clinics.—The scope of the mental clinics conducted by state hospitals in the Psychopathic Institute, under the auspices of the state hospital commission, has been enlarged during the last year to include mental defectives. Physicians as well as psychometric testers for the mentally defective patients have been supplied by the state commission for mental defectives and the various state schools for mental defectives. These mental clinics are held whenever possible in connection with the health center established by the state department of health and in the same location with such other clinics as those for children's diseases, tuberculosis and venereal disease. The seven state departments represented by the committee on joint clinics are working in harmony with the result that extra-institutional treatment in mental and other types of cases is increasing in a very encouraging manner. These clinics are being held at all state hospitals.

New York City

Society for Clinical Study.—The next monthly meeting of the Society for Clinical Study will be held in the reception hall of the New York Diagnostic Clinic, 125 West Twenty-Second Street, on the evening of May 26.

West Side Dispensary Buys Site.—The West Side Dispensary and Hospital has purchased the property adjoining its present building as a site for a lying-in hospital. The property was purchased for \$50,000 and will be rebuilt next fall at a cost of between \$50,000 and \$100,000.

Health Department Night.—At the regular monthly meeting of the Academy of Pathological Science, April 23, the program consisted of papers on public health topics only, presented by officials of the department of health. These included: "Activities of the Board of Health"; "Schick Tests"; "Industrial Medicine"; "Food and Drug Control," and "Narcotic Addiction Medical Treatment."

Federal Government to Buy Quarantine Station.—The House of Representatives has approved the Magee bill providing for the taking over by the federal government of the quarantine station in New York Harbor. The purchase price is \$1,395,275, which is the amount settled on in condemnation proceedings. No trouble is anticipated in passing the bill through the Senate.

Grand Jury Acts on Dr. Markoe Assassination.—The grand jury sitting on the death of Dr. Markoe, who was killed in St. George's Church on April 18, suggests that a petty jury at a trial be permitted to find a defendant "guilty but insane." At present the verdict must be worded "not guilty, but insane." It suggests also that the law be amended so that a corps of physicians or neurologists be appointed as the only competent authority to certify to the court on insanity cases.

Personal.—Dr. Royal S. Copeland, health commissioner, will sail, May 8, to represent the city of New York at the Congress of the Royal Institute of Public Health, which opens in Brussels on May 19. In response to an invitation from the institute, he will deliver an address on the prevention of epidemics. He will also make a tour of European ports to study public health conditions.—Dr. John F. Ferguson has been appointed a member of the board of education.—Dr. John J. Kindred, Astoria, has been appointed highway commissioner of Queens, succeeding Mr. George Howland Leavitt.

Memorial to Dr. Jacobi.—The stated meeting of the New York Academy of Medicine of May 6 was held in memory of the late Dr. Abraham Jacobi. This date being the anniversary of Dr. Jacobi's birth was made the occasion for the presentation by his family of a bronze bas-relief of Dr. Jacobi, the one presented to him some years ago by the New York State Medical Society. The presentation was made by Hon. George McAneny, his son-in-law, and was formally accepted by Dr. George David Stewart, president of the academy. In his address Dr. Stewart reviewed the services of Dr. Jacobi to the academy during his sixty years of membership. Dr. George E. Vincent, president of the Rockefeller Foundation, delivered an address on "The Life and Influence of Dr. Jacobi Upon His Time," in which he dwelt on Dr. Jacobi's contributions to the advancement of medical science, and his clear vision of the larger possibilities of the profession.

OREGON

Personal.—Dr. Lloyd W. Brooke, Portland, after work in France and Belgium during the war has been sent to Tirana, Albania, to establish an American Red Cross dispensary.

Public Health Association Organized.—Hood River County is the seventh in the state to organize a public health association. This organization was perfected March 17 at Hood River and officers and district chairmen elected.

Botulism Reportable.—The state board of health has included botulism in its list of communicable diseases and has circularized health officers and physicians, directing attention to the importance of reporting the occurrence of any cases and of giving information regarding the suspected cause.

PENNSYLVANIA

Philadelphia

Meeting of College of Physicians.—The section on general medicine of the College of Physicians of Philadelphia held its stated meeting, April 26, at which cardiac arrhythmias were discussed, the formal presentation of the subject being by Prof. Bernard S. Oppenheimer, assistant professor of clinical medicine in Columbia University.

Personal.—Dr. Charles E. De Medici Sajous has been named in the list of nominations for the Hall of Fame in New York University.—Dr. Lawrence F. Flick has received the Laetare Medal, the highest distinction that can be conferred on a Catholic layman in the United States, awarded annually by the University of Notre Dame, as a tribute to his work in the field of medicine.—Dr. Alexander Hugh F. Barbour, M.D., LL.D., vice president of the Royal College of Physicians, Edinburgh, Scotland, addressed the Obstetrical Society of Philadelphia, May 6, on "Reminiscence and Forecast."—At the stated meeting of the College of Physicians, May 5, Dr. George H. Whipple, professor of research medicine, University of California, and Drs. Francis Peyton Rous and Philip D. McMaster of the Rockefeller Institute, read papers.

Public Health Day.—Wednesday, May 12, 1920, was made public health day for Philadelphia. The following organizations cooperated: the Philadelphia County Medical Society, the College of Physicians, the city departments of public health and public welfare, the board of public education, Children's Playground Association, the Child Federation, City Parks Association, the Civic Club, the City Club, Philadelphia Housing Association and the Pennsylvania Society for the Prevention of Tuberculosis. Short addresses on health and hygiene were made in the public and parochial schools in the morning, and in the evening many community meetings in schoolhouses and recreation centers were addressed by physicians and other qualified speakers interested in the movement. The central and most important event was the joint meeting under the auspices of the county medical society and the associated organizations and departments named above at the Manufacturer's Club.

WEST VIRGINIA

State Society Meeting.—The annual meeting of the West Virginia State Medical Association will be held in Parkersburg, May 18 to 20, under the presidency of Dr. Henry R. Johnson, Fairmont.

Public Health Service Makes Dental Survey.—In cooperation with the state board of health, the Oral Hygiene Unit of the Public Health Service is making a state-wide survey

of dental hygiene problems in West Virginia, with special reference to schoolchildren. The unit is visiting every county seat in the state and making inspections of the mouths of a number of children attending school, demonstrating to the community the extent of the dental needs of the school population, and assisting the local communities in perfecting measures whereby dental services can be provided when such do not now exist. At the same time teachers are being instructed in the principles of dental prophylaxis. Eventually it is hoped to have the proper authorities establish a mobile dental clinic to visit the schools throughout the state.

WISCONSIN

Resignations from Faculty.—It is reported that Drs. Louis M. Warfield, Charles H. Stoddard, Arthur J. Patek, Carl H. Davis and James D. Madison have resigned from the faculty of Marquette University School of Medicine, Milwaukee, on account, it is said, of a difference of opinion on the university's theory that the life of the infant must be saved before that of the mother.

Personal.—Dr. Deno F. O'Connor, Verona, who was attached to the staff of Mercy Hospital, Chicago, and later was on duty with the Semenoff forces in Siberia has been detailed as surgeon to the steamer *President Grant*, by the American Red Cross, to accompany a number of Czechoslovaks to Prague.—Dr. Herbert E. Ellsworth has been reappointed health officer of Appleton.

Clinic in Oshkosh.—A tuberculosis clinic was opened at Oshkosh, April 9 and 10, under the auspices of the Wisconsin Antituberculosis Association, under the charge of Drs. Archibald A. Pleyte, Delafield; Robert L. Williams, Statesan, superintendent of the State Tuberculosis Sanatorium, Wales; Dr. William J. Clancy, Wauwatosa, assistant medical director of Muirdale Sanatorium; Dr. Oscar Lotz, Milwaukee, and Dr. J. Gurney Taylor, Milwaukee.

CANADA

Personal.—Dr. Delmer A. Craig, formerly medical superintendent of the Alexandria Sanatorium, London, Ont., and later consultant in diseases of the chest, Military District No. 1, has accepted the position of medical consultant on the staff of the Massachusetts-Halifax Health Commission, with headquarters at Halifax.

Returned Soldiers Under Treatment for Tuberculosis.—According to an announcement in the House of Commons a few days ago, there are 1,715 returned soldiers in Canada undergoing treatment for tuberculosis. Fifteen per cent. of these are considered incurable. The total number of ex-soldiers treated in sanatoriums by provinces are as follows: Ontario, 3,404; Quebec, 1,350; Prince Edward Island and Nova Scotia, 1,126; Manitoba, 687; Saskatchewan, 445; Alberta, 275; British Columbia, 735, and New Brunswick, 272.

GENERAL

Tropical Medicine Society Meeting.—At the annual meeting of the American Society of Tropical Medicine held in New Orleans, April 27, the following officers were elected: president, Dr. John M. Swan, Rochester, N. Y.; vice presidents, Drs. Karl F. Meyer, San Francisco, and Victor G. Heiser, New York; secretary-treasurer, Dr. Sidney K. Simon, New Orleans, and assistant secretary, Dr. Allen J. Smith, Philadelphia.

Gynecologists to Meet.—The annual meeting of the American Gynecological Society will be held in Chicago, May 24 to 26, with headquarters at the Congress Hotel. Three morning sessions and one evening session will be held. The morning sessions of May 24 and 26 and the evening session of May 25 will be held in the Florentine Room of the Congress Hotel, and the morning session of May 25 will be held at the South Shore Country Club. Drs. Thomas W. Eden, London, and Charles Jacob, Brussels, Belgium, will be guests of the society and will read papers. Dr. Thomas J. Watkins is chairman of the committee of arrangements, and the profession of Chicago is cordially invited to be present.

Air Service Surgeons Meet.—At the annual meeting of the Air Service Medical Association of the United States held in New Orleans, April 27, the following officers were elected: president, Col. Albert E. Truby, M. C., U. S. Army, Washington, D. C.; vice presidents, Col. Robert A. Strong, M. R. C., U. S. Army, New Orleans, Col. Louis H. Bauer, M. C., U. S. Army, Mineola, N. Y., Col. J. O. McReynolds, M. R. C.,

Dallas, Texas, Col. Isaac W. Jones, M. R. C., U. S. Army, Los Angeles, and Major Samuel Mederith Strong, M. C., U. S. Army, Carlstrom Field, Fla., and secretary-treasurer, Col. Nelson Gapen, M. C., U. S. Army (retired), Washington, D. C.

Medical Veterans of World War Meet.—At the annual meeting of the Medical Veterans of the World War held in New Orleans, April 26, the following officers were elected: president, Dr. Frank Billings, Chicago; vice president, Admiral Edward R. Stitt, U. S. Navy; secretary-treasurer, Col. Frederick F. Russell, M. C., U. S. Army, Washington, D. C., and trustees, Drs. Hubert Work, Pueblo, Colo., John M. Dodson, Chicago, George E. Brewer, New York, Joel E. Goldthwait, Boston, James C. Perry, Washington, D. C., and Col. Frank R. Keefer, M. C., U. S. Army, Washington, D. C. The next annual meeting will take place in Boston on the day preceding the meeting of the scientific assembly of the American Medical Association.

FOREIGN

Training School Re-equipped.—Rudolfinerhaus, the oldest and best known training school for nurses in Vienna, founded by Professor Billroth, has been reequipped by the American Red Cross and arrangements have been made whereby nurses can go back to their prewar work.

Token of the Gratitude of France.—The *Journal officiel*, of Paris, published in its issue of Feb. 24, 1920, the names of two Americans to whom had been presented the Médaille de la reconnaissance française, Major Haynes and Major Albert J. Chesley, both connected with the American Red Cross.

Chateau Made Into Sanatorium.—The American Red Cross Commission to Belgium has completed the purchase of the estate of Baron de Naere at Aertrycke near Thourout. The chateau stands on one of the highest points in Flanders, has spacious grounds and will accommodate several hundred patients. Baron Van de Gracht has given 200,000 francs to aid in the equipment of a sanatorium.

Roentgen's Retirement.—At the close of the winter semester this spring Professor Roentgen retired from his chair (experimental physics) at the University of Munich and resigned likewise the charge of the Physikalisches Institut. His discovery of the rays that bear his name was made at Würzburg in 1895. Although not a physician, the profession can almost claim him on account of the way it has appropriated his discovery. He was born March 27, 1845.

Salaries of Public Health Officers.—At the suggestion of the Society of Medical Officers of Health and the British Medical Association, the medical journals of England have decided to reject all advertisements for assistant medical officers of health when the annual salary offered is less than £500, exclusive of traveling expenses. The agreement draws attention to the inadequate remuneration of physicians in the public service, for salaries in many cases have remained unchanged despite the increased cost of living.

Extension of Compulsory Health Insurance in Germany.—The *Deutsche medizinische Wochenschrift* for April 15 brings word that the committee appointed by the government has reported in favor of raising the income limit for compulsory insurance against sickness to 20,000 marks. By means of the new "simplified legislation" system, this became a law April 26. The editorial comment is to the effect that "even in an absolute monarchy, the law-making machine could not turn out anything worse than this new regulation in the so-called 'most democratic republic in the world.' In connection with the compulsory family health insurance and recent enactments in regard to the war disabled, nine-tenths of the total population are thus withdrawn from private medical practice."

Personal.—Prof. A. Calmette of Lille and Paris recently visited Athens to inaugurate there the Pasteur Institute of Greece. He was accompanied by Drs. Abt and Blanc who are to remain in charge of the new institution. Calmette's pioneer research and successful application of antivenins, antiplague serum, and the ophthalmotuberculin reaction are well known, and his antituberculosis dispensary at Lille was the mother preventorium. He was appointed to succeed Metchnikoff in the Pasteur Institute at Paris, but on account of the German occupation of Lille was able only recently to enter on his post as subdirector, under Roux.—The Constantinople Medical Society receives an appropriation from the state. At the recent election, the officers chosen were, for president, Dr. Trantas, for secretary, Dr. A. S. Papadopoulos, and for treasurer, Dr. Antonacopoulos.

Government Services

Medical Officers Honored by King

The king of England, on the recommendation of Sir Douglas Haig, made Nov. 7, 1917, has voiced his appreciation of the distinguished service in the field of the following officers of the Medical Corps, U. S. Army: Cols. Christopher C. Collins; George W. Crile, Cleveland; Harvey Cushing, Boston; Mathew A. Delaney; Robert U. Patterson; Harry L. Gilchrist; James D. Fife; Richard H. Harte, Philadelphia, and Lieut.-Col Lucius L. Hopwood.—Miss Julia Stimson, superintendent of nurses, U. S. Army, has also received a like token of appreciation from the king.

Care of Speech and Hearing Defects

The Federal Board for Vocational Education estimates that there are among the injured veterans of the World War between ninety and 100 cases of men whose speech became absolutely unintelligible as the result of mouth or neck wounds, aphasia, or other causes. Of these men 25 per cent. are still in the hospital and 50 per cent. are in training or approved for training. The courses followed are agriculture, auto mechanics, commercial courses and chemistry. There are probably several thousand men throughout the country who became deaf in one ear, or who have suffered slight impairment of hearing in both ears. However, there are only about 200 for whom lip reading is necessary. Therefore, the approximate number of hearing and speech defect cases will be about 300.

Vocational Schools in Hospitals

A vocational school for veterans of the recent war may be established by the Federal Board for Vocational Education in any hospital where there are ex-service men in groups of sufficient numbers to justify the establishment of such a school. With this idea in mind, an officer of the Public Health Service made a survey which took in hospitals in the soldiers' homes at Dayton, Ohio, Marion, Ind., Danville, Ill., and Milwaukee; three Public Health Service hospitals—P. H. S. Hospital No. 30 and the Marine Hospital, both at Chicago, and P. H. S. Hospital, Markleton, Pa.; the private sanatorium at Catawba, Va., and the county hospital, "Healthwin," at South Bend, Ind.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

CALIFORNIA

Los Angeles—Leonard, W. E. (C.)

San Francisco—Rocho, V. L. (L.)

DISTRICT OF COLUMBIA

Washington—Wyant, J. E. (C.)

FLORIDA

Jacksonville—Turck, R. C. (Col.)

GEORGIA

Bethlehem—Harris, E. R. (C.)

Milledgeville—Caraker, C. T. (M.)

Ocilla—Armour, W. S. (L.)

ILLINOIS

Bush—Deason, F. (C.)

Bushnell—Blackstone, G. R. (L.)

Chicago—Brown, A. K. (C.)

Ferguson, A. H. (L.)

Hagerty, T. W. (L.)

Stobie, R. E. (L.)

Winfield—Levy, E. (L.)

INDIANA

Indianapolis—Wiggins, E. L. (C.)

Kingsbury—Webster, B. (M.)

KANSAS

Elmdale—Johnson, F. T., Jr. (C.)

Garden City—Davison, C. O. (L.)

Leavenworth—Brown, A. L. (C.)

Osawatomie—Weathers, B. (L.)

KENTUCKY

Louisville—Stickley, A. E. (C.)

MARYLAND

Baltimore—Daniels, W. H. (C.)

Hachtel, F. W. (L.)

Owings Mills—Jones, K. B. (M.)

MASSACHUSETTS

Boston—Murphy, J. H. (L.)

Rudman, I. E. (C.)

Worcester—Crofton, G. H. (L.)

MINNESOTA

Vernon Center—Clement, T. G. (C.)

MISSISSIPPI

Houston—Wilson, E. P. (L.)

Jackson—Brewer, M. I. (L.)

MISSOURI

Clayton—Moore, R. D. (C.)

Kansas City—Hirschberg, S. B. (C.)

Weston—Calvert, L. C. (L.)

NEW MEXICO

Santa Fe—Hedding, B. E. (C.)

NEW YORK

Brooklyn—Spiegel, B. E. (C.)

Buffalo—Argus, F. (C.)

Fairport—Ferrier, W. H. (C.)

New York—Bensel, W. (L. C.)

OREGON

Portland—Keency, H. I. (C.)

PENNSYLVANIA

Philadelphia—Harding, J. C. (L.)

Hendel, I. (L.)

Shenandoah—Mullahey, L. T. (L.)

SOUTH DAKOTA

Yankton—Wood, J. A. (C.)

TENNESSEE

National Soldier's Home—Byrd, E. E. (L.)

TEXAS

Caldwell—McLean, W. J. (L.)

Dalhart—Owens, R. L. (C.)

Palestine—Wilhite, G. W. (C.)

Rush—Barron, W. P. (L.)

VIRGINIA

Union Hall—Sutherland, F. P. (L.)

WASHINGTON

Kent—Gould, A. R. (C.)

WEST VIRGINIA

Cooper—Goodwill J. J. (M.)

White Sulphur Springs—Capito, G. B. (C.)

WISCONSIN

Fond du Lac—Harris, F. M. (L.)

WYOMING

Cheyenne—Snyder, O. K. (C.)

Foreign Letters

BUENOS AIRES

April 3, 1920.

Lethargic Encephalitis

While this disease has been observed in Montevideo, no cases had been reported so far in Argentina. Recently, however, Dr. J. P. Navarro has reported a case (*Semana Médica* 9:283, 1920) and Dr. Gaspar Teglia three (*Revista Médica del Rosario* 10:1, 1920).

Typhus Fever

The epidemic of typhus fever has not yet crossed the Andes in spite of the severity it has assumed in Chile (12,068 cases with 3,560 deaths from October to December, 1919). But in the northern part of Argentina, small foci have persisted in some villages of the province of Salta, which are situated in the mountains and have very poor communications. Some new cases have also been observed recently in the district of San Carlos. The national department of public health has decided to remove to La Quiaca the sanitary station, previously installed at Humahuaca.

Plague

For the last few months there have been occurring cases of bubonic plague in practically all of the South American countries, especially in the southern part Brazil, Uruguay and Argentina. The spread of the disease has coincided with the removal of the stored wheat. The national department of public health has increased the number of sanitary commissions, having created another one at Cordova, presided over by Dr. Ricardo Argerich, with three subcommissions under Drs. Pasalacqua, Machado and Pedrazzini, respectively.

National Department of Public Health

Dr. Capurro, president of the national department of public health, has just been elected a member of the House of Representatives, Dr. Teófilo Lecour becoming for the time being acting president. It is to be regretted that this department should be considered a political institution, as this causes constant changes in its personnel.

LONDON

April 23, 1920.

The Control of "Patent Medicines"

The ministry of health has appointed a committee to consider and advise on the legislative and administrative measures to be taken for the control of the quality and authenticity of such therapeutic substances offered for sale as cannot be tested adequately by direct chemical means. The committee includes Dr. H. H. Dale, head of the department of biochemistry and pharmacology under the Medical Research Council, and Dr. C. J. Martin, director of the Lister Institute of Preventive Medicine. In 1912, a select committee of the House of Commons on "patent medicines" was appointed. In its report, issued in 1914, it thus summed up the legal position in regard to "patent medicines": "For all practical purposes, British law is powerless to prevent any

person from procuring any drug, or taking any mixture, whether potent or without any therapeutic activity whatever (so long as it does not contain a scheduled poison), advertising it in any decent terms as a cure for any disease or ailment, recommending it by bogus testimonials and the invented opinions and facsimile signatures of fictitious physicians, and selling it under any name he chooses on the payment of a small stamp duty, for any price he can persuade a credulous public to pay."

The principal recommendations of the committee were: 1. That the administration of the law governing the advertisement and sale of "patent" and secret medicines be combined under one department of the state—the ministry of health when created, and then the Local Government Board. 2. That the manufacturers, proprietors and importers of such medicines be registered. 3. That an exact and complete analysis of every remedy, including medicated wines, with a full statement of the claims made for them, be furnished to the department. 4. That a special court or commission be constituted with power to permit or prohibit in the public interest, or on the ground of noncompliance with the law, the sale and advertisement of any remedy, and that the commission be a judicial authority, such as a metropolitan police magistrate sitting with two assessors, one appointed by the department and the other by some such body as the London chamber of commerce. 5. That the advertisement and sale (except the sale by a physician's order) of medicines purporting to cure the following diseases be prohibited: cancer, consumption, lupus, deafness, diabetes, paralysis, fits, epilepsy, locomotor ataxia, Bright's disease and rupture (without operation or appliance). 6. That all advertisements of remedies for venereal diseases and advertisements likely to suggest that a medicine is an abortifacient be prohibited. 7. That it be a breach of the law to use fictitious testimonials, or to promise to return money paid if a cure is not effected. Nothing was done to carry out these recommendations, for the war began and absorbed all the energies of the government. At last there is a prospect of checking the notorious nostrum evil.

Aeroplanes as Carriers of Disease Germs

In a lecture at the Royal Institution on "The Menace of Man's Dispersal of Insect Pests," Prof. H. Maxwell Lefroy pointed out how insect pests had been carried about the world from one country to another. This menace was going to be worse. In the first place, we were steadily linking up the world by railways, and especially by aeroplanes. Formerly we traveled by sea, and transported insects would die from the effects of a long journey; but the greatest carrier of pest-carrying insects was the aeroplane, which picked up insects, landed in a field, and deposited them, all within a few hours. The aeroplane was truly the disseminator of crop pests. During Dr. Chalmers Mitchell's flying trip through Africa, his aeroplane, while on the ground, had been attacked by white ants. The aeroplane could easily pick up the yellow fever breeding mosquito and bring it to another land within the space of a few hours. The tsetse fly, which engendered the African sleeping sickness, could be taken from West Africa to Brazil in a few hours. Among the insects the most to be dreaded was the chinch-bug, which in 1864 caused a loss of 73 million dollars' worth of wheat.

Proposed Medical Degree for a Bone Setter

Mr. Barker, the bone setter, has a large number of admirers among the public. A petition signed by more than 300 members of Parliament, past and present, has been presented to the Archbishop of Canterbury to exercise an ancient prerogative which empowers him to grant medical degrees in favor of Mr. Barker. The prerogative now, how-

ever, is in desuetude. It originated in the control once exercised by the church over the practice of medicine. Some years ago it was last exercised to confer the degree of M.D. on an already qualified physician, in consideration of some philanthropic or charitable work. As reported previously in *THE JOURNAL*, there was an agitation among members of Parliament to obtain for Mr. Barker an honorary degree from some of the universities in consideration of his services to wounded soldiers. It was unsuccessful, and it does not seem likely that the present attempt will have any better result.

Arsenic in Sugar; Sixty Persons Poisoned

An outbreak of arsenic poisoning, affecting sixty people, has occurred at the village of Haslemere, Surrey. About twenty households were involved, and among the victims were three bottle-fed babies. Suspicions of food poisoning were first aroused when three members of a family were seized with severe vomiting and internal pains after drinking some tea. When it was found that another member of the family, whose tea had not been sweetened, was unaffected, the sugar on the table was removed for examination, and the shop where it was purchased was visited by the local health officer. It was then discovered that a barrel of moist sugar recently arrived had become contaminated with a liquid preparation of some kind largely composed of arsenic. Inquiries led to the discovery that during transit by rail the sugar had come into contact with a leakage from a tin of weed killer, which contained arsenic. So far none of the cases have been fatal.

PARIS

April 15, 1920.

The Supply of Meat and Fish

Free commerce has been restored in the importation of frozen meats, until now a monopoly. A shortage is not to be apprehended, for the world supply of frozen meats has been found amply equal to consumption; in certain countries even, such as England, there is an overabundance. Moreover, there is no shortage of refrigerator ships in France since replenishment has proceeded almost entirely with French boats. Nevertheless, even though freedom of commerce is assured, the price remains under state control, which will prevent speculative attempts to increase the price exorbitantly. In spite of these precautions, consumption of frozen meats has really become less and less advantageous because of the depreciation of the franc. If this low standard continues, it will be necessary to employ the most logical meat substitute—fish. For this, it is necessary to assist the fishing industry, and above all, to help the work of steam trawlers whose yield is greater. The undersecretary of food control is at present engaged on this matter and particularly on a plan to obtain special concessions for coal trawlers. In anticipation of considerable traffic in fish, the railroad companies have also made some important preparations by setting up cold storage depots and by carrying refrigerator cars to preserve and transport the products of the fishing industry.

The Campaign Against Cancer

M. Le Troquer has just introduced a measure in the municipal council tending to assist the campaign against cancer, the ravages of which are increasing incessantly. Whereas in 1910 there were 3,073 cases of cancer, based on the number reported by physicians, in the following year there were 3,619. In the face of this state of affairs, M. Le Troquer thinks it opportune to encourage the use of radium in the treatment of cancer. Unfortunately, in Paris itself the *Assistance publique* is not in a position to give indigents the benefit of such special treatment, for no hospital has any

radium. M. Le Troquer likewise proposes the creation of a scientifically autonomous dispensary attached to the radium institute of the University of Paris, to which shall be entrusted 2.5 grams of radium to be purchased through an appropriation of 2,500,000 francs, which is requested in the measure.

Honor to Dr. Jacques Vaillant

The municipal council of Paris has unanimously expressed its deep regard for Dr. Jacques Vaillant, chief of the radiographic laboratory at the Hôpital Lariboisière, who recently suffered amputation of the left arm because of serious injuries from radiodermatitis.

Congress of Physiology

A congress of physiology will be held in Paris, July 16-20, under presidency of Dr. Charles Richet. Applications and assessments (35 francs) should be sent to M. Lucien Bull, treasurer, Institut Marey, avenue Victor-Hugo, Boulogne-sur-Seine; correspondence should be addressed to Professor Gley, Collège de France, 14 rue Monsieur-le-Prince, Paris.

Decrease in the Birth Rate

The National Alliance for Increasing the Population of France recently published the figures of the fluctuation of the civil population of Prussia in comparison with those of France. From July 1, 1914, to June 30, 1918, exclusive of deaths in the armies, the population of uninvaded France (33,000,000 inhabitants) decreased 973,000; that of Prussia (42,000,000 inhabitants) decreased 313,000 during the same period. With a civil population of 9,000,000 less than Prussia, France suffered a loss three times as great. Taking into consideration the ten invaded departments, for which complete statistics are lacking, but where the birth rate has been very low and the mortality quite high, the decrease in the population of France appears even much more formidable. The great difference between France and Prussia is due entirely to the higher German birth rate, which, although it decreased during the war in the same proportion as that of France, is still much higher than in the latter country.

Physical Exercise in the Army

By an order of M. André Lefèvre, minister of war, sports have been made compulsory in the army. Hereafter all field officers and captains must be qualified to direct the physical exercises of their commands, and all lieutenants and sublieutenants must be able to perform the functions of captain of a football team.

Promotion of Clinical Research

A committee has just been formed under the patronage of M. Paul Deschanel, president of the French republic, and with M. Raymond Poincaré, ex-president of the republic as honorary president, with a view of establishing at Paris a great laboratory of chemical research, under the name of *Institut de la Victoire*. Dr. Emile Roux, director of the Pasteur Institute, Prof. Charles Richet of the Faculty of Medicine, and Professor Bordas of the Collège de France, are among the members of the organization committee.

Committee on Mental Hygiene

The minister of hygiene, assistance and social providence has just instituted a committee on mental hygiene, with instructions to make a technical study of all questions relating to mental hygiene, psychiatry, and applied psychophysiology of the various social activities.

Death of Dr. G. Sarda

Announcement has been made of the death of Dr. G. Sarda, aged 65, professor of medical jurisprudence at the University of Montpellier.

Deaths

John Chalmers DaCosta, Jr. ☉ M. C., U. S. N. R. F., Philadelphia; Jefferson Medical College, 1893; aged 48; died in St. Timothy's Hospital, April 26, from skull fracture sustained in an automobile accident. He was lieutenant and assistant surgeon, U. S. V., during the Spanish-American War; was well known as a specialist on internal medicine, holding the position of associate professor of medicine in his alma mater; attending physician at Jefferson Hospital, consulting physician to the Northwestern General Hospital and hematologist to the German Hospital. He was a fellow of the American Academy of Medicine, and of the College of Physicians of Philadelphia, and the author of articles and monographs on clinical hematology, surgical hematology and the principles and practice of diagnosis.

John Williams Severin Gouley, Brooklyn; College of Physicians in the City of New York, 1853; University of the City of New York, 1878; aged 87; died at the home of his daughter, April 26, from senile debility. He was visiting surgeon to Bellevue Hospital from 1859 to 1898; consulting surgeon to Bellevue and St. Vincent's hospitals, New York City, and at one time professor of anatomy in the Vermont College, Woodstock, and demonstrator of anatomy in the University of the City of New York. During the Civil War he was attached to the medical staff of the Central Park Military Hospital, and later served with the armies in the field.

Adolph August Hoehling, Medical Director, Rear Admiral, U. S. Navy (retired), Chevy Chase, Md.; University of Pennsylvania, Philadelphia, 1860; aged 81; died, April 25, from arteriosclerosis. He entered the Navy as assistant surgeon, April 4, 1861, was promoted to passed assistant surgeon in 1865, to surgeon in 1867, to medical inspector in 1885, to medical director in 1893, and to rear admiral on June 29, 1906, the date on which he was retired for disability incident to the service, after thirteen years and five months' sea service.

Louis Nott Lanehart ☉ Hempstead, L. I., N. Y.; Albany (N. Y.) Medical College, 1883; aged 50; one of the organizers of, and surgeon to, the Nassau Hospital; surgeon to the Babylon, Mercy, and Eastern Long Island hospitals, and consulting surgeon to the Williamsburg Hospital; health officer of Hempstead village and township; died, April 25, from heart disease, after an operation on his throat.

Lunsford Eliga Cox, Greenwood, Ind.; State College of Physicians and Surgeons, Indianapolis, 1907; aged 37; a member of the Indiana State Medical Association; once coroner of Johnson County; who had been under treatment in a sanatorium for nervous diseases in Indianapolis, is said to have committed suicide at that institution, by strangulation, April 26.

John Mitchell Benedict, Woodbury, Conn.; University of the City of New York, 1882; aged 68; a member of the Connecticut Medical Society; visiting physician and surgeon to the Waterbury Hospital; major and surgeon of the Second Infantry, Connecticut National Guard from 1889 to 1895; died, April 23, from angina pectoris.

John Gailey Campbell ☉ Chicago; Northwestern University Medical School, Chicago, 1896; aged 50; instructor in pediatrics and formerly instructor in physical diagnosis and clinical medicine in his alma mater; medical referee of the Mutual Life Insurance Company of New York; died, May 10, from pneumonia.

David Andrew Conrad ☉ Santa Barbara, Calif.; University of California, Berkeley and San Francisco, 1893; aged 48; captain, M. C., U. S. Army (emergency); who had been under treatment at the Letterman General Hospital, Presidio of San Francisco; died in Santa Barbara, April 6.

Claren Emmett Pfeifer ☉ Columbus, Ohio; Ohio Medical University, Columbus, 1904; aged 45; captain, M. R. C., U. S. Army, and discharged April 25, 1918; head of the United States Public Health Service for the central district of Ohio; died in his office, April 23, from diabetes.

Joseph Fraenkel, New York City; University of Vienna, Austria, 1890; aged 52; assistant professor of clinical medicine in Cornell University Medical School, New York City; a fellow of the New York Academy of Medicine; died, April 24, from disease of the stomach.

☉ Indicates "Fellow" of the American Medical Association.

Wing Jordan, Philadelphia; University of Pennsylvania, Philadelphia, 1871; aged 73; from 1880 to 1885 first assistant physician to the Pennsylvania State Hospital, Norristown; died at the home of his brother in Philadelphia, April 28.

Julius Scheider, New York City; University of Vienna, Austria, 1872; aged 74; a member of the staff of the German Hospital, New York City, in the department of diseases of children; died, April 26, from heart disease.

Donald Meronan Kelley, Brookston, Ind.; University of Michigan, Ann Arbor, 1881; aged 65; one of the founders and president for several years of the Brookston Canning Company; died, April 16, from arteriosclerosis.

Richard James Plumer Goodwin, Malden, Mass.; Harvard University Medical School, 1865; aged 82; a member of the Massachusetts Medical Society; surgeon of U. S. Volunteers throughout the Civil War; died, April 19.

Arthur Judson Benedict ⊕ Newburgh, N. Y.; University of Buffalo, N. Y., 1876; a specialist in diseases of the ear, nose and throat; died in St. Luke's Hospital, Newburgh, April 17, after an operation for gallstones.

Willis Curtis Cook, Brockport, N. Y.; Toledo (Ohio) Medical College, 1887; aged 88; for forty-two years a practitioner of medicine; died at the home of his granddaughter in Union, N. Y., April 14.

Arthur Emery Green ⊕ Lansing, Mich.; University of Michigan, Ann Arbor, 1902; aged 44; a specialist in pediatrics; until 1919 a practitioner of Leslie, Mich.; died, April 11, from heart disease.

William Dawson Robinson, East Orange, N. J.; Bellevue Hospital Medical College, 1879; aged 77; a member of the Medical Society of New Jersey; a veteran of the Civil War; died, April 13.

John William Clarke ⊕ Lyndhurst, N. J.; Medico-Chirurgical College of Philadelphia, 1901; aged 52; health officer of Lyndhurst for several years; died, April 12, from cardiovascular disease.

Mary Parker, Waltham, Mass.; Hahnemann Medical College, Chicago, 1910; aged 47; a member of the staff of the Massachusetts Homeopathic Hospital; died, April 8, from carcinoma.

Charles James Helm ⊕ Peru, Ind.; Harvard University Medical School, 1887; aged 57; consulting surgeon at the Tabash Railway Hospital, Peru; died, April 27, from pneumonia.

Wallace Harlow Deané, Springfield, Mass.; Yale University, New Haven, Conn., 1877; aged 66; a member of the Massachusetts Medical Society; died, April 10, from pneumonia.

Valcollon Warsaw Mather, Kansas City, Mo.; Pulte Medical College, Cincinnati, 1883; aged 73; died in the Robinson Sanitarium, Kansas City, April 18, from cerebral hemorrhage.

Reginald Francis Cox, Alexandria, Va.; Tulane University, New Orleans, 1918; aged 29; died at the home of his parents in Alexandria, April 19, from tuberculosis following influenza.

Henry Tupper Drane, Clarksville, Tenn.; Bellevue Hospital Medical College, 1873; aged 70; died at the home of his daughter in Brookhaven, Miss., March 24, from pneumonia.

William R. Todd, Seattle; Rush Medical College, 1879; aged 90; at one time county physician of Eureka County, Nev., and of Clear Creek County, Colo.; died, April 23.

Christian P. Glahn, Palmyra, Mo.; Washington University, St. Louis, 1902; aged 45; health officer of Marion County; died, April 28, from lethargic encephalitis.

Louis Charles Sinclair, Ripley, Ont.; University of Toronto, Ont., 1896; died in the Kincardine (Ont.) General Hospital, March 7, from pneumonia.

Julius A. Goltz ⊕ Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1887; aged 67; died, April 1, from cirrhosis of the liver.

Cyprian R. Wright, Frankton, Ind.; Medical College of Indiana, Indianapolis, 1888; aged 57; died, April 17, from carcinoma of the prostate.

Eldridge Allen Toby, River Falls, Wis.; University of Vermont, Burlington, 1874; aged 72; died, April 23, from cerebral hemorrhage.

Correction.—The notice of the death of Dr. Julius Jerome Goldstein which appeared in THE JOURNAL of May 1, is an error.

Marriages

ERASMUS DARWIN FENNER to Mrs. Sadie Cameron McDonald, both of New Orleans, April 28.

JESSE HENRY ROTH, Kankakee, Ill., to Miss Josephine McAuley of Chicago, recently.

RALPH TOWNSEND TRAVERS to Miss Catherine Davin, both of New York City, May 1.

CYRIL M. SMITH to Miss Ednah Katherine Kolkebeck, both of Brooklyn, Dec. 20, 1919.

GRANT GOULD SPEER to Miss Eunice Amanda Parker, both of Los Angeles, April 28.

WILLIAM W. ALDERDYCE to Mrs. Litta Marie Crouse, both of Toledo, April 20.

WILLIAM SIMON CROWLEY to Miss Ethel Roth, both of Chicago, April 28.

Correspondence

TEACHERS IN THE PRECLINICAL SCIENCES

To the Editor:—For several weeks, nearly every number of THE JOURNAL has contained one or more statements by eminent professors in clinical departments in various medical schools, most of them delivered at the recent conference on medical education, damning the preclinical instructors. They state with absolute positiveness that the clinical departments should contain each its own pathologist, its own assistant skilled in physiologic technic, and others in other fields. Any dependence on the preclinical departments is thus to be rendered unnecessary, and the laboratory branches are to be left with even less clinical and hospital connection than at present. This aim appears to be everywhere a part of the plan for full-time clinical departments.

Soon after these addresses, the report of the committee of the National Research Council was published, revealing the really appalling conditions in the preclinical departments—the inferior pay and the lack of young men going into the medical sciences.

Now comes the report of the Council on Medical Education, Dr. A. D. Bevan, chairman, which indicts the preclinical instructors for being “ultrascientific,” and states bluntly that only men with the M.D. degree should be allowed in the preclinical chairs, and these instructors must be “able to give students the medical point of view,” and should be required “to keep in touch with the art and science of medicine.”

Nor is this all. Three of the leading medical schools in the East have vacant chairs of physiology, and it is commonly reported that men fit to fill them are lacking in America, and that the importation of foreigners for one or more of them is under consideration. Such a rumor, even assuming it untrue, is a humiliation and discouragement to American physiologists and to American science in general. It indicates that something is fundamentally wrong.

The situation is: No man of the Ph.D. variety should be allowed in the preclinical chairs. No man of ability with the M.D. degree will in fact strive for them or stay in them, against the immensely greater opportunities and advantages offered now, and to be offered in even richer measures in the future, by the clinical departments. Unless something pretty radical is done and done soon, either these chairs will be filled by men with the Ph.D., or they will be vacant.

Perhaps the instruction in the medical sciences will then be given by the pathologic, physiologic, pharmacologic and other assistants, expert in each branch, who are to be included in the clinical departments. Until the freezing of the source brings about its inevitable result, this solution would have one great advantage to recommend it. It would attract, instead of repelling. Under it the young men giving

this instruction would have before them an open road to a future worth a man's efforts, namely, to become professors of medicine and surgery.

One committee, looking at matters from a standpoint opposite to that of the Council on Medical Education, has even advocated encouraging the development of preclinical instructors of the Ph.D. variety. But to get young men into the medical science through the avenue of the Ph.D. is, under present conditions, a cruel proposition. They get in; they cannot get out, as an M.D. could; and there is then nothing for them to do but to accept the starvation wages, perhaps a half of the pay of men no abler nor more loyal and industrious in the clinical chairs, plus such objurgation for their "lack of a medical standpoint" as the columns of *THE JOURNAL* have lately carried.

I am one of the men who, in spite of the handicap of the Ph.D., have devoted their lives to making what contribution they could to medicine. And I ask: How do Dr. Bevan and the others expect us to get or keep a medical standpoint? What opportunity have we? Suppose a man receives a call to the chair of medicine, and he asks "What will be my relation to the hospital?" The answer is, "Chief of everything in your field, with power and subordinates and money." Suppose, on the contrary, that a man is called to the chair of physiology, and asks the same question; the answer will be, "Nothing whatever." And as like as not there will be added, *sotto voce*, "We don't want you around the hospital; any applications of physiology to diagnosis, treatment or clinical research we will supply in our clinical departments." This is particularly true of the full-time clinical departments, as planned, according to every description thus far published. What would the surgeons say if the department of medicine put in a surgical assistant? Or how would the professor of medicine like to have the department of surgery include an internist in its staff? Yet each of these departments in many places insists on having its own pathologic laboratory with technicians and instructors.

Do not misunderstand. Not a word is here said against the "full-time plan." But if the difference in the status of the clinical and the preclinical instructors is made as glaring as is proposed, there is no question which field of life work the young man of ability will choose, and which he will reject.

We are stigmatized as "off horses," and yet we are not allowed in the team. Doubtless there will be exclamations over this: What can a physiologist do around a hospital? The answer is that he can have charge of the things which physiology has contributed: electrocardiography and sphygmography, basal metabolism, electrodiagnosis, blood analysis, respiratory analyses and tests, etc. The present inadequacy of clinical work regarding the hematorespiratory functions is simply monstrous.

The thing which, even more than low pay, is inhibiting the manufacture of physiologists is the lack of a market in which the product can be sold. To do business on any scale there must be some rapidity of turn over. At present an assistant starts in a physiologic laboratory, and after fifteen or twenty years he may become a professor. Think of a business with a turn over once in fifteen or twenty years! It is more like a cemetery than a career. Pathology and biochemistry have larger markets, in technical positions to be filled outside of schools, than physiology and anatomy; and they are doing correspondingly more business and are more alive.

But suppose that all this were changed, and that the doors of opportunity were open! The regular course of events for every young man fitting himself for the highest grade of clinical work would then begin (after a year in the hospital) with a couple of years spent entirely in a laboratory. He

would then be promoted to one of the clinical physiologic instructorships, or some other liaison position, for example, in charge of the electrocardiograph. There, while still part of a laboratory department, he would come into contact with clinical phenomena and apply his laboratory training. He would become more and more interested in clinical medicine and would in a few years pass on into one of the clinical departments, leaving a place for the promotion of another man from the laboratory. There could then be a turn over every two or three years. One man in fifteen or twenty would finally become a professor of some preclinical branch. (There are only a dozen or two good positions of this sort to be filled in each generation in a nation of one hundred million people.) There would then be a group from whom

The difficulty about such liaison arrangements as those here clinical medicine, would be none the worse for their early contact with science beyond the student stage.

It would be a part of this plan also to cut down the required preclinical courses, and to enlarge the electives in junior and senior years in the various branches of clinical physiology and like subjects.

The difficulty about such liaison arrangements as those here suggested is that they involve a system of functional organization and cooperation, instead of the system of water tight compartments which now prevails, and which practically every one who has discussed medical education lately seems to assume as a matter of course. They seem unaware of the fact that some of the largest and most ably managed industries in the country have discarded the water tight compartment system, and operate today under what is termed "functional organization." This is true, for example, of all the companies of the Bell Telephone System. There is urgent need that the authorities and donors who today are directing the development of medical education should inform themselves regarding that system, of which the fundamental principle is a real cooperation.

There are many physiologists in America who can say truly that the thing for which we have striven hardest and against the greatest inertia for many years has been the development of our lines of work into the clinical field. As chairman of the Section on Pathology and Physiology of the American Medical Association in 1911, I made the topic of my address "Clinical Physiology—An Opportunity and a Duty." The gentlemen who now attack us might advantageously look this paper up in the files of *THE JOURNAL* and reread, or at least, read it. It can be asserted without fear of successful contradiction, I believe, that in general the professors of physiology in America fulfil the duty described in that paper to the limit of their opportunities. It is the opportunity that is lacking.

YANDELL HENDERSON, PH.D., New Haven, Conn.
Professor of Physiology, Yale University
School of Medicine.

"BONDS NOT NECESSARY FOR PHYSICIANS"

To the Editor:—My attention has just been directed to your editorial comment under the caption "Bonds Not Necessary for Physicians" (*THE JOURNAL*, April 10, 1920, p. 1029):

I am sure that it was not your intention to direct your criticism against the legal profession as a whole, but your article does to a marked degree refer and reflect on all of the legal profession.

With reference to the specific matter at issue, I wish to state that I not only procured a supply of these blanks, but filled them out and took the acknowledgments in my office and made no charge of any kind or character, and there has never to my knowledge been any charge made in my office to members of the medical profession, for services of this

character. And I know this to be the general rule in our profession.

I was shown one of the circulars to which you refer, and I immediately took the matter up with the Bar Association of St. Louis, who promptly investigated the matter with the result that it was found that the party who had sent out the circulars in question was not a member of the Bar and was not licensed to practice law.

With these facts before you, I feel certain that you will wish to modify your article of April 10, which is a direct reflection on the legal profession as a whole.

S. C. BATES, Springfield, Mo.
Attorney and Counselor at Law.

[COMMENT.—Our comment did not reflect on the legal profession. The criticism was not on the fact that a charge was made for services. The circulars criticized conveyed the impression that a bond was necessary for physicians in order to secure a permit, and that the charge made was for the bond and not for the services. In any event, if physicians need legal assistance it would seem much better to utilize home talent.—ED.]

RAILROADS AS A SOURCE OF INFECTION

To the Editor:—In speaking of the spread of tropical diseases in the United States (THE JOURNAL, Feb. 14, 1920, p. 463), you do not mention what must be a prolific source of spread of any intestinal infections: the absolute lack of control of intestinal discharges of passengers on trains and boats. These discharges are daily scattered along all the routes of travel. Is it not time that some means were sought for a more sanitary way of disposing of them? I have no suggestions to offer, except that the separation of the urine and feces might make it more feasible to destroy the latter instead of sending them forth as a menace to the public health. Surely the Public Health Service, which has done so much in the way of public hygiene, could devise proper means for combating this evil.

R. W. DUNLAP, M.D., Chefoo, China.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THYROID EXTRACT IN REDUCTION OF WEIGHT

To the Editor:—I have had an inquiry in regard to the use of thyroid extract for persons greatly overweight. I wish you would make some observation in regard to this in Queries and Minor Notes.

J. D. GRAHAM, M.D., Columbus, Kan.

ANSWER.—When given in full dosage for long periods of time, thyroid extract produces anemia, emaciation and muscular weakness, excessive sweating, increased heart rate, etc. It will probably cause loss of weight, and with it faintness, loss of strength and debility. Thyroid extract has been used in some "fat reducers." It is far too dangerous a drug to be self-prescribed. If used at all for the reduction of weight, the patient should be under competent medical observation.

Training for Medical Research.—To qualify a man to be a skilled investigator in bacteriology, in physiology, and in chemistry, many years of special training are necessary. If it be realized that before a man is qualified to undertake an investigation for the prevention and cure of disease—the real object of medical research—he must have a knowledge of symptoms, it will be seen that a training is required which is bound to take a great many years.—J. MacKenzie, *Brit. M. J.* 1:109 (Jan. 24) 1920.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.

DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.

FLORIDA: Regular Board, Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.

GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.

IOWA: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, May 17. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.

MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 1-4. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.

MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, May 19-26. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW YORK: New York, Albany, Syracuse, Buffalo, May 18-21. Assistant, professional examinations, Mr. Herbert J. Hamilton, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.

RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.

TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.

VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.

WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

Wyoming February Examination

Dr. J. D. Shingle, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Thermopolis, Feb. 2-4, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Two candidates were examined, who passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1918)		87.5
St. Louis University	(1906)		75

South Dakota January Examination

Dr. Park B. Jenkins, secretary of the South Dakota State Board of Health, reports the written examination held at Pierre, Jan. 13-15, 1920. The examination covered 13 subjects and included 105 questions. An average of 75 per cent. was required to pass. Of the 23 candidates examined, 22 passed and 1 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1918)		83.2
College of Physicians and Surgeons, Chicago	(1908)		89.2
Northwestern University	(1916)		84.7
Rush Medical College	(1889) 85, (1916) 87.6, (1919)		88.9
Indiana University	(1908)		89.9
Sioux City College of Medicine	(1906)		79.8
State Univ. of Iowa Coll. of Med.	(1897) 78.1, (1904)		81
University of Louisville	(1909)		88
Harvard University	(1896)		84.6

Tufts College Medical School	(1915)	78.4
University of Michigan Medical School	(1919)	87.5
Nat'l Univ. of Arts and Sciences.....	(1915) 82, (1918)	78.2
Washington University	(1919)	81.4
John A. Creighton Medical College.....	(1911)	84.6
University of Nebraska	(1918)	86.8
University College of Medicine, Richmond	(1907)	81.9
Marquette University	(1913)	83.3
Montreal School of Medicine and Surgery.....	(1903)	85.2
FAILED		
National Medical University, Chicago	*(1909)	59.2
COLLEGE LICENSED BY RECIPROCITY		
Rush Medical College	(1913)	N. Dakota
University of Louisville	(1908)	N. Dakota
University of Minnesota Medical School....	(1916), (1919)	Minnesota
University of Bonn, Germany	(1898)	N. Dakota

*Official information on file indicates that this candidate was neither a student nor a graduate of the institution named.

District of Columbia January Examination

Dr. Edgar P. Copeland, secretary of the District of Columbia Board of Medical Examiners, reports the oral and written examination held at Washington, Jan. 13, 1920. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas		(1917)	75.5, 75.8
Georgetown University	(1918)	81.6, (1919)	81.8, 86.8
George Washington University		(1919)	80.5
Howard University	(1918)	82.3, (1919)	87.3
COLLEGE LICENSED BY RECIPROCITY			
Howard University		(1902)	Virginia
University College of Medicine, Richmond.....		(1905)	Virginia

Florida March Examination

Dr. George A. Davis, secretary of the Florida Homeopathic Board of Medical Examiners, reports the written examination held at Jacksonville, March 16, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the six candidates examined, 3 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
State University of Iowa College of Homeo. Medicine		(1911)	82
Cleveland Medical College		(1897)	75
Cleveland University of Medicine and Surgery.....		(1895)	79
FAILED			
Chicago Homeopathic Medical College		(1904)	69
Homeopathic Medical College of Missouri		(1880)	14
Homeopathic Hospital College, Cleveland		(1886)	67

Book Notices

TEXT-BOOK OF MEAT HYGIENE WITH SPECIAL CONSIDERATION OF ANTEMORTEM AND POSTMORTEM INSPECTION OF FOOD-PRODUCING ANIMALS. By Richard Edelmann, Ph.D., Medical Counsellor. Fourth edition by John R. Mohler, A.M., V.M.D., Chief, United States Bureau of Animal Industry. Cloth. Price \$4.75. Pp. 472 with 166 illustrations. Philadelphia: Lea & Febiger, 1919.

When we consider that meat and meat products constitute a large part of the diet of the American people, physicians in this country cannot very well escape the obligation of possessing at least a general knowledge of the subject of meat inspection and meat hygiene in general, just as a modern pediatrician is of necessity interested in and must inform himself on the developments of milk hygiene. It will hardly do to shift all the responsibility in these matters to the shoulders of the veterinary inspectors. There is still some meat and game on the market that is not inspected; and even as regards that which is inspected, with the immense mass of material passing through the hands of the inspectors, it can scarcely be expected that no diseased carcasses and no faulty meat products will be overlooked. Some knowledge of the problems with which meat inspectors have to deal, and more especially of the abnormal conditions and

diseases found in food-producing animals, will facilitate the diagnosis of pathologic conditions that arise from the consumption of meat or meat products which were not quite up to standard, but which escaped the watchful eye of the inspector or which deteriorated in quality in the interval that elapsed between the time when the stamp "U. S. Inspected and Passed" was affixed and the date of consumption. The book contains fifteen chapters, of which Chapters VII-XI will prove most interesting, as they cover such topics as the abnormal conditions and diseases of food-producing animals, postmortem changes of meat, the examination of preserved meats, chickens, game, fish, amphibia and crustaceans, and meat poisonings. As many diseases of the human body find their counterpart in animals, a comparative study of this sort will prove helpful; and for that purpose, the present work will furnish valuable aid.

THE NOSE, PARANASAL SINUSES, NASOLACRIMAL PASSAGEWAYS AND OLFACTORY ORGAN IN MAN. A Genetic, Developmental and Anatomico-Physiological Consideration. By J. Parsons Schaeffer, A.M., M.D., Ph.D., Professor of Anatomy of the Jefferson Medical College of Philadelphia. Cloth. Price, \$10 net. Pp. 370, with 204 illustrations. Philadelphia: P. Blakiston's Son & Co., 1920.

This study of the embryology, development and anatomy of the human nose, accessory sinuses, olfactory organ, and related structures bears evidence of exhaustive observation and research. Special consideration is given throughout to the important matter of anatomic variations or so-called anomalies. The author first describes the general embryology and development of the special organs under consideration, and carries this through fetal life, infancy and childhood, adding numerous photographs and drawings of specimens and dissections throughout these various stages. In this chapter is also a consideration of congenital defects. The following chapter is devoted to the anatomy of the fully developed nose, wherein the structures are treated as a whole and in correlated groups and in individual detail with excellent illustrations, all combining to convey an illuminating knowledge of the anatomy of the nose itself. Each of the next four chapters is devoted to one of the nasal sinuses, namely, maxillary, frontal, sphenoidal and ethmoidal. Each sinus is described in the fetal, childhood and adult stage, with special consideration of anatomic variations as regards size, shape, location, septums, diverticula, duplication, etc. Mention is made regarding the relation of the sphenoidal sinus to the hypophysis cerebri, optic nerve and commissure, cavernous sinus, and its contained structures. A consideration of the nasolacrimal apparatus is followed by a description of the nasal mucosa with its histologic variations as to location, etc. There is then a chapter devoted to the blood and lympho-vascular systems, and another to the common sensory and sympathetic nerves. The next chapter describes the olfactory apparatus both as to its peripheral organ and central organ or olfactory brain. The final chapter treats of the physiologic functions of the nose. The volume is well written, and the illustrations are excellent.

ON FACIAL NEURALGIA AND ITS TREATMENT, WITH SPECIAL REFERENCE TO THE SURGERY OF THE FIFTH NERVE AND THE GASSERIAN GANGLION. By J. Hutchinson, F.R.C.S., Surgeon to the London Hospital. Cloth. Price, \$4. Pp. 216, with illustrations. New York: William Wood & Co., 1919.

This book contains a practical discussion of the symptoms and diagnosis of tic douloureux, as well as of minor forms of neuralgic pains in the face due to demonstrable causes, such as carious teeth, ocular and nasal affections, and syphilis. The surgical anatomy is adequately presented and well illustrated; less must be said of the surgical treatment, which is not brought up to date. In particular, too little consideration is given to the greatly improved methods in gasserian ganglion and sensory root operations, perfected by American surgeons in the last fifteen years, while antiquated British methods are given preference. Considerable space is devoted to alcohol injections, especially to the work of the British imitators, while that of the French originators of the external method is scarcely considered. In spite of these shortcomings, however, this is a readable book, and will be found helpful by those especially interested in the subject.

Medicolegal

Workman's Compensation Before and After Amputation

(*Addison v. W. E. Wood Co. et al. (Mich.), 174 N. W. R. 149*)

The Supreme Court of Michigan says that the plaintiff suffered an accidental injury while in the employ of the W. E. Wood Company, and was paid compensation for total incapacity at the rate of \$10 a week for fifty-four and one-third weeks. His foot was then amputated, and payments at the rate of \$10 a week were continued until he had been paid and tendered compensation for 125 weeks, the compensation specified in the workmen's compensation law of Michigan for loss of a foot. It was contended for the defendants that the one injury which the plaintiff sustained resulted in the loss of a foot, entitling him to 125 weeks' compensation for such loss, to be computed from the date of the injury, the exact time when the foot was amputated having no material significance. But the industrial accident board awarded him compensation for total incapacity during the fifty-four and one-third weeks he was disabled without loss of any member, and after the operation continued compensation during 125 weeks more for loss of a foot; and the court affirms the award, concluding that the construction of law by the board as applied to the facts in this case was permissible within the wording, spirit and inferable intent of the law considered in all its provisions. It is within the spirit of the law, and does no violence to the wording of the sections considered, to construe them as authorizing compensation for existing total incapacity resulting from any injury to a member while medical skill is attempting to restore and save it, and until such time as developments have proved amputation necessary, followed by compensation for the loss of such member during the period fixed by the law after such loss becomes an actuality cognizable under the schedule.

Ratification of Employment of Physician

(*Baker v. Brown & Hackney, Inc. (Ark.), 215 S. W. R. 578*)

The Supreme Court of Arkansas says that the plaintiff, a practicing physician, sued the defendant, a lumber corporation, for \$1,110 on account of medical services alleged to have been rendered at the instance of the defendant to one of its employees. The defendant denied that it employed the plaintiff to render medical aid to the employee. It appeared in evidence that the general manager of the defendant's business at the place where the employee that was injured worked was especially authorized by the defendant to employ first aid medical assistance in case of injury to the employees, received while performing their duties. He employed the plaintiff to render medical aid to the employee, who had received a serious injury while engaged in the line of his duty. No limitation or restriction was placed on the plaintiff as to the extent of the employment. The general manager testified: "I told him we wanted him taken the best care of." Immediately after the injury, the general manager wrote a letter to the defendant, informing it of the injury, and possibly his employment of the plaintiff to treat the employee. Shortly thereafter the general manager went to the city where the corporation had its general office, and informed an officer and manager of the corporation that, according to the plaintiff, the employee was in pretty bad shape. The plaintiff continued to render medical services to the employee, except for a short time on account of illness, from January 30 to July 22, making a total of 185 visits. A short time prior to June 19, the plaintiff presented a partial account for services to the defendant, which carried a liability policy on its employees, and, on receipt of the plaintiff's bill for \$936, being a partial bill, sent it to an agent of the insurance company, and without replying to the plaintiff. The insurance company declined to pay plaintiff the bill on the ground that, under the terms of the policy, it was not responsible for first aid assistance or medical attention of physicians. When the evidence was concluded, the trial judge instructed the jury that the defendant was liable only for first aid services, in keeping with which instruction the

jury was directed to return a verdict for the plaintiff for \$24. In reversing the judgment rendered for that amount, and remanding the cause for a new trial, the supreme court says that the plaintiff conceded that the evidence was not sufficient to show general authority in the local general manager to employ physicians generally, but contended that there was sufficient evidence to present the issue of ratification by the defendant of the act of its agent in employing the plaintiff to treat the employee. It is a well-established rule that an employer may ratify the unauthorized acts of his agent by silence and acquiescence. There was no serious denial that the local general manager was the defendant's agent in the management of the lumber business at the place where the accident occurred. It might be, under the evidence recited above, that he exceeded his authority in the employment of the plaintiff to render medical assistance to the injured employee beyond first aid; but the evidence strongly tended to show that the defendant was apprised of the fact and remained silent. Under this state of case, the question of ratification should have been submitted to the jury. It was error to instruct the jury peremptorily to render a verdict for first aid only.

Infection Carried from Toe to Face

(*Bethlehem Shipbuilding Corporation, Limited, v. Industrial Accident Commission et al. (Calif.), 185 Pac. R. 179*)

The Supreme Court of California, in affirming an award under the workmen's compensation act for the death of one Caffrey, says that on Friday, July 26, 1918, he sustained a contused wound of the great toe of his right foot. He continued at his work Saturday, and also the following Monday. On Monday he had the toe dressed at an emergency hospital. Tuesday, the foot was so painful that after starting to work he returned home and undertook to treat the toe himself. August 1, he complained of a swelling of the face. On the following day, the symptoms of the face became alarming, and he was removed to a hospital, where it was discovered that there was a streptococcic infection of the injured toe. The skin surrounding the toe was in an erysipelatous condition, and there was a development of erysipelas on the face. The facial infection resulted in septicemia, from which he died, August 8. The industrial accident commission found that the germs which caused the facial infection were carried from the toe to the face by external means, and that Caffrey's death was proximately caused by the original injury. The medical testimony on which the commission based its finding that the germs which caused the facial infection were carried from the toe to the face by external means was, in effect, that such a method of transfer was exceedingly common, the transmission of the germs being very readily accomplished; that there was no reason to suppose that the infection had come from another source than the toe, and that, while it was within the realm of possibility for the infection to have come from another source, such a hypothesis was so very much the least probable that it seemed useless to theorize as to such a possibility in the face of facts indicating that the germs certainly must have been carried from the foot. The testimony showed that the experts were not indulging in mere conjecture or speculation. They were given what, on the facts before them, and in the light of medical science, appeared to be the most probable explanation of the event.

Moreover, in the light of medical knowledge properly presented to the commission that such a transfer of a streptococcic infection from a discharging wound as that found to have taken place in Caffrey's case was not only possible but highly probable, the court is of the opinion that the fact that the germs reached the face by external means and not through the system could not, as a matter of law, be said in itself to have broken the chain of causation.

Nor does the court think that Caffrey's conduct was such as to require a finding of negligence on his part. He was, of course, under a duty to use reasonable care to restore himself to health. But if he conducted himself as would a reasonably prudent person in his situation and circumstances, and innocently enhanced the original injury, it was within the province of the commission to find that the

original cause continued to the end and accomplished the final result, and was therefore the proximate cause. He might have had free treatment at the hospital maintained by the corporation for its employees, but he chose instead to remain at home and treat the foot himself with witch hazel and iodine. In the light of subsequent events, this was an unfortunate decision. The court is, however, unable to say as a matter of law that the commission was bound to find that, under all the circumstances appearing at the time, it was a decision so unreasonable and imprudent as to amount to a breach of his duty to use due care to restore himself to health.

Evidence Touching Testamentary Capacity

(*In re Swain's Estate (Iowa)*, 174 N. W. R. 493)

The Supreme Court of Iowa, in affirming a judgment holding invalid a will contested in this case, says that it is true that a man may be a drunkard and yet not necessarily incapable of making a valid will. He may be grossly immoral and filthy, and still not be of unsound mind in the legal sense of the word. He may be quarrelsome, or abusive, or profane, or eccentric, and yet not necessarily incompetent; but when very many of these characteristics are found uniting in a single character, and there is added thereto the testimony of experts that such a showing indicates a loss or decay of mentality, a verdict to that effect by the jury cannot be disregarded. Much of the complaint made by counsel in this case related to the refusal by the trial court to instruct the jury that evidence showing the testator had syphilis, that he frequented houses of prostitution, and indulged in other unclean and filthy practices, was immaterial and should not be considered as having any bearing on the question of his mental soundness. None of these objections were sound. It is true that no one of such acts, practices or habits is, as a matter of law, necessarily inconsistent with the theory of testamentary capacity; but this is not to hold that proof of such facts may not be considered with other facts as tending to show mental unsoundness. Men of sound mind do not, as a rule, so conduct themselves. With the normal man a sense of shame and regard for the decencies of life operate as some restraint on his conduct, and this is especially true with the normal man who has outlived his youthful follies and has left mentality enough to realize that his career is drawing to a close. Moreover, where the validity of a will is being contested, physicians who treated the maker of the will in his lifetime may be examined by the contestants of the will concerning knowledge so acquired by them in their professional capacity, under the Iowa decisions that it is not a violation of professional confidence protected by the Iowa statute.

Society Proceedings

COMING MEETINGS

American Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 31.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Orthopedic Association, Toronto, Ont., June 7-10.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
Arkansas Medical Society, Eureka Springs, June 8-9.
Association of American Peroral Endoscopists, Boston, June 1.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Connecticut State Medical Society, New Haven, May 19-20.
Illinois State Medical Society, Rockford, May 18-20.
Massachusetts Medical Society, Boston, June 8-9.
Michigan State Medical Society, Kalamazoo, May 25-27.
Nebraska State Medical Association, Omaha, May 24-26.
Nevada State Medical Association, Lake Tahoe, June 25-26.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
Rhode Island Medical Society, Providence, June 3.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.
South Dakota State Medical Association, Sioux Falls, May 18-20.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.
West Virginia State Medical Association, Parkersburg, May 18-20.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

April, 1920, 19, No. 4

- *Infant and Child Mortality, Including Miscarriages and Stillbirths. H. Schwarz, New York City.—p. 249.
- *Experimental Work with Sodium Cacodylate on Athreptic Infants. F. S. Clarke and A. Dow, Omaha.—p. 260.
- *Prognosis in Operated Cases of Hypertrophic Stenosis of Pylorus. A. Goldbloom and R. C. Spence, New York.—p. 263.
- New Method for Determining Coagulation Time of Blood in New-Born. F. C. Rodda, Minneapolis.—p. 269.
- Roentgen-Ray Demonstration of Abnormalities of Gastro-Intestinal Tract in Children. C. G. Kerley, New York.
- Résumé of Literature on Tuberculosis in Children During 1918 and 1919. M. Michael, Chicago.—p. 287.

Infant and Child Mortality.—The material for Schwarz's paper was taken from the social histories of 10,000 families. In 6,968 families there were 27,711 pregnancies, including miscarriages and stillbirths, an average of 3.9 per family. Of these 27,711 pregnancies, 2,239 were miscarriages and 413 were stillbirths; that is, there were 3.6 live born children to each family. The total number of deaths under 1 year of living births were 3,232. From the first to the eighth year there were 1,081 additional deaths, or a total of 4,313 deaths of living births. Taking all the deaths up to 8 years, including miscarriages and stillbirths, of the 27,711 pregnancies, 6,965 babies, or 25 per cent., died. The miscarriage rate in these families was 80.7 per thousand of all pregnancies and 89.3 per thousand of living births. The infant death rate (up to 1 year of age) in this group of families was 128 per thousand living births. A contrast to this figure is the death rate of 70 per thousand in this same group of families of only those of their children who, during the ten years, were under medical care. This figure, which shows a saving of 58 infants per thousand living births, proves conclusively what supervision, education and care can accomplish. The child death rate (up to 8 years) reached 172 per thousand. In other words, 172 out of every thousand children born alive, died before they reached the age of 8 years. The stillbirth rate per thousand total pregnancies was 14.9, and per thousand living births it was 16.4. The death rate, in early infancy, of children of native born parents, greatly exceeds that of the foreign element. The miscarriage rate is greatest when both parents are native born and least when both parents are foreign born. The literate have more miscarriages than the illiterate. There were 358 literate families with an infant mortality rate of 111 per thousand born, and 133 illiterate families with an infant mortality rate of 172 per thousand born. It does seem that education is a very important factor.

Use of Sodium Cacodylate in Athreptic Infants.—Six athreptic infants were selected by Clarke and Dow for study. A von Pirquet and a blood Wassermann from each infant proved negative. A routine urine examination yielded similar negative results. Eight injections of sodium cacodylate were given in all, at intervals of four days. All injections were given intramuscularly and hypodermically. The youngest infant, 6 months old, received one-quarter grain, as an initial dose; the oldest, 15 months old, three-quarters grain. The dosage was gradually increased till the youngest was receiving three-quarters grain and the oldest 1 grain. The maximum dose at any one time was 1 grain. A blood examination was done on all the infants before the injections were begun. A second examination was done after two injections, and a third after the last injection. The red and white cell count remained nearly uniform throughout, nor was there any marked change in the differential count. There was, however, a striking increase in the hemoglobin in all the children. Three children showed an increase of five points; one child of ten points; one twenty points, and one twenty-five points. One child failed to gain in weight during the injections, but in the month succeeding gained 1 pound, 10 ounces. Three children gained approximately 2 pounds,

and two gained $1\frac{1}{3}$ pounds. These gains have been continued since stopping the treatment. They all improved in nutrition and seemed to be more hungry for their food when feeding time arrived. Therefore, the authors conclude that carefully graduated doses of sodium cacodylate, when injected hypodermically into infants, has no toxic influence.

Prognosis in Operative Cases of Hypertrophic Pyloric Stenosis.—Goldbloom and Spence analyze 163 cases in which a Rammstedt operation was performed. One hundred and thirty-one children recovered and thirty-two died, a mortality of 19.63 per cent. It was evident that the operation per se is, perhaps, the least important factor in the mortality. The condition of the baby at the time of operation is the most important factor. Fourteen babies died from collapse from one to three days after operation, and five died from general peritonitis. One child died of bronchopneumonia complicating whooping cough, and one child died from post-operative hemorrhage on the third day after operation. The remaining eleven deaths were from marasmus and occurred in from three to twenty-five days after operation. In all cases, then, except the seven in which death was due to complications, the fatal result can definitely be attributed to a state of inanition existing at the time of operation. The mortality in artificially fed babies is more than three times that for the breast fed babies. In infants weighing 7 pounds or less, the mortality was three and one-half times as great as in those who weighed more than 7 pounds. The mortality increases in direct proportion to the amount of weight lost previous to operation. The mortality for breast fed infants who had vomited less than four weeks and who had lost less than 20 per cent. of their best weight is almost nil. The fatalities which occur are due to accidents usually avoidable when the operation is done by a skilful surgeon.

Bulletin Johns Hopkins Hospital, Baltimore

March, 1920, 31, No. 349.

*Unrecognized Pathway for Bacterial Invasion of Respiratory Tract. M. C. Winternitz, G. H. Smith and E. S. Robinson, New Haven, Conn.—p. 63.

German Nutrition, 1914-1919. C. C. Mason, U. S. Army.—p. 66.
Pathologic Changes in Gasteropod Liver Produced by Fluke Infection. E. C. Faust, Peking, China.—p. 79.

III. Fate of Influenza Bacilli Introduced into Upper Air Passages. A. L. Bloomfield, Baltimore.—p. 85.

*Muscular Work During Hypnosis. N. C. Nicholson, Baltimore.—p. 89.

The Granules, Vacuoles and Mitochondria in the Sympathetic Nerve-Fibres Cultivated in Vitro. T. Matsumoto, Chiba, Japan.—p. 91.

Infection Route in Respiratory Tract.—The submucosa of the trachea contains a rich plexus of lymphatics, prominent everywhere and devoid of valves. At the bifurcation of the trachea anastomosis occurs with similar plexuses in the bronchi, and this phenomenon is repeated throughout the region of the cartilage-bearing bronchi. At the bifurcation of the trachea, as well as of the bronchi, there is drainage to the lymph glands and anastomosis with periarterial and peribronchial lymphatics. When the lymphatics are injected, the larger portion of the material is diverted at these bifurcations, but continuity of the lymphatic system in the tracheal and bronchial submucosae is demonstrable. Winternitz and his associates found that pneumococci introduced by needle puncture through the skin into the lumen of the trachea or by insufflation, provided the insufflation catheter damages the epithelium of the trachea, spread by way of the lymphatics to the lung. The lymphatics of the submucosa of the trachea, then, afford a direct pathway of infection to the lung. Although this lymphatic system provides a pathway for infection, it may also serve as a protective mechanism against pulmonary infection, for the drainage of the submucosa of the trachea and bronchi is largely diverted as the lung is approached to the protecting regional lymph glands.

Fate of Influenza Bacilli in Respiratory Tract.—Three strains of influenza bacilli introduced by Bloomfield in large amounts into the normal upper air passages disappeared very rapidly within from one to two days. In no case was a carrier state produced. In no case did any local or general pathologic process result from such inoculation. In five instances influenza bacilli isolated later than twenty-four

hours after inoculation were shown to be different strains from those introduced. Influenza bacilli were no longer viable after being suspended in saliva for twenty-four hours at 37 C. The rapid disappearance of influenza bacilli from the upper air passages is probably due to the combination of an unfavorable environment with the mechanical flushing processes at work in these regions. Bloomfield is of the opinion that the question of the persistence of influenza bacilli in normal throats cannot be finally settled until we possess accurate methods for differentiating various strains of hemophilic bacteria.

Muscular Work During Hypnosis.—In order to determine the effects of suggestion on muscular efficiency and record the findings objectively, a Mosso ergograph was used by Nicholson as the instrument best adapted to fulfil these requirements. Only those subjects were used who could be placed in the deepest hypnotic sleep—the state characterized by cataleptic rigidity. The records secured show that a very definite increase in muscular efficiency can be obtained by suggestion in the hypnotic state and that suggestions given even while the subject is fully awake influence muscular efficiency to some extent. The increased efficiency during hypnosis shows itself in three ways: (1) By an increase in the actual amount of work done. In fact, during the hypnotic sleep the capacity for work seemed practically endless. (2) By an increase in endurance. (3) By a decrease in fatigue, both subjective and objective. After work in the hypnotic sleep the subjects never complained of any fatigue, nor could questioning elicit any signs of fatigue, whereas after performing a much smaller amount of work in the waking condition they frequently complained of being quite tired and exhausted and always on being questioned stated they were fatigued. The records show the absence of any objective fatigue.

Bulletin of Lying-In Hospital of City of New York

March, 1920, 12, No. 1

*Chemical Examination of Blood and Urine in Normal Pregnancy and in Toxemia of Pregnancy. J. R. Losee, New York.—p. 38.

Executive Management of a Clinic for Babies. E. L. Coolidge, New York.—p. 57.

*Blood Transfusion in Obstetrics. J. R. Losee, New York.—p. 65.

Chemical Examination of Blood and Urine in Pregnancy.—The twenty-one cases investigated by Losee fall into four groups, normal pregnancy, preeclampsia, eclampsia and pernicious vomiting. In the diagnosis of eclampsia a large amount of albumin in the urine and a normal blood urea are the most significant laboratory findings. Although modern biochemical technic is of great scientific interest and has marked clinical value in some diseases, and, whereas, it has disproved such theories as the acidosis, the amino-acid, and nitrogen retention as a cause of toxemia of pregnancy, it affords little assistance in the daily routine of clinical obstetrics.

Blood Transfusion in Pregnancy.—Losee has performed this operation seventy-eight times on seventy patients suffering from the complications of labor. Sixty-one were done by the syringe cannula method and seventeen by the citrate method. There were fourteen deaths in this series and all but one was undoubtedly due to the disease from which the patient was suffering. The latter, which may or may not have been due to transfusion, occurred early in the series, was an emergency and no preliminary tests were made. There were thirty patients on whom the operation was performed for hemorrhage or hemorrhage and shock, twenty-nine who were suffering from postpartum hemorrhage and localized pelvic sepsis, seven who had either bacteremia, septic thrombophlebitis of the pelvic veins or general peritonitis and four with toxemia of pregnancy of the pernicious vomiting type. Of the thirty patients suffering from acute hemorrhage due either to placenta previa, postpartum hemorrhage, premature separation of the placenta, ruptured ectopic or ruptured uterus thirty-two transfusions were performed and six patients died. There were twenty-nine patients with anemia secondary to postpartum hemorrhage and localized pelvic sepsis on whom thirty transfusions were done. They all completely recovered although some of them seemed critically ill on admission.

Four cases of toxemia of pregnancy of the pernicious vomiting type have been transfused with two deaths but here again it is only a supportive measure.

California State Journal of Medicine, San Francisco

April, 1920, 18, No. 4

Board and Staff Organization of Hospitals. W. E. Musgrave, San Francisco.—p. 117.
Organization of Metabolism Unit. N. W. Janney, Santa Barbara.—p. 118.

Canadian Medical Association Journal, Toronto

April, 1920, 10, No. 4

*Obstetrics and the State. K. C. McIlwraith.—p. 305.
Genesis, Classification, Interrelationships and Clinical Diagnosis of Disease. H. B. Anderson.—p. 314.
Headache of Nasal Pharyngeal and Aural Origin. P. G. Goldsmith.—p. 328.
*Fifty-Eight Cases of Delayed Arsenical Poisoning Following Administration of Arsphenamin Preparations. G. S. Strathy; C. H. V. Smith and B. Hannah.—p. 336.
Lessons from War Surgery. J. A. Gunn.—p. 354.
*Primary Sarcoma of Mediastinum, with Postmortem. J. A. Street.—p. 362.
Chronic Diarrhea Associated with an Adenoma of Thyroid Gland. A. H. Gordon and A. T. Bazin.—p. 365.
Submaxillary Salivary Calculus. A. T. Bazin.—p. 366.
Erythema Multiforme Mistaken for Lesions Due to Chemical Poisoning. G. G. Campbell.—p. 368.
Veil Pin in a Bronchus. Removed Through Bronchoscope. R. H. Craig and W. A. Wilkins.—p. 370.

Obstetrics and State.—Many enthusiasts for maternal insurance, according to McIlwraith, carry the idea to extreme lengths, advocating motherhood insurance or practically the state support of the mother. Extremes of this kind seem to lead directly to bolshevism. Among the insurance benefit which the state might assume, in his opinion, would be the provision of sterilized dressings, sheets, etc., for the accouchement, and in some cases for nursing and medical attendance. Then, too, the authorities should be the judges as to whether the patient should be confined at home or in a hospital.

Arsenical Poisoning Following Use of Arsphenamin.—Fifty-eight cases of delayed poisoning following the administration of arsphenamin and mercury were observed by the authors in military hospitals and in private practice. Forty-seven of these showed symptoms referable to the liver, namely: jaundice, decreased digestive power and liver atrophy. Eight of these were fatal and at necropsy showed marked atrophy of the liver. Dermatitis occurred in eight cases. Five were severe with marked exfoliation. Peripheral neuritis was observed in two cases. Albuminuria was present in over 50 per cent. of the cases. Edema was found in two cases. The onset of the symptoms seldom occurred until five weeks after the administration of arsphenamin had ceased. The earliest symptoms of arsphenamin poisoning of the liver were, bile in the urine, albuminuria, loss of appetite and jaundice. Dermatitis with atrophy of the liver occurred in one patient who received arsenic in the form of Fowler's solution, 5 minims, three times daily, for five months.

Primary Sarcoma of Mediastinum.—A woman, aged 34, had sudden onset of pain in the left chest; increasing dullness in the left chest and mediastinum; nonhemorrhagic pleural effusion, left side; heart progressively forced to right; increasing difficulty in breathing; stridor; paralysis of left recurrent laryngeal nerve; increasing weakness of voice; persistent and increasing cough becoming brassy in character; no sputum. Emphysema developed in the right lung. Two positive Wassermanns were apparently unrelated to the principal disease. Roentgen-ray examination showed a dense shadow in the left lung area. This proved to be caused by a mediastinal sarcoma, involving also the left lung, trachea and right primary bronchus.

Georgia Medical Association Journal, Atlanta

March, 1920, 9, No. 11

*Trichocephaliasis and Appendicitis: Report of Case. L. Hannah, Sandersville.—p. 69.
Acidosis—Alveolar Air-Tension Compared with Urine Acidity. T. D. Walker, Jr., Macon.—p. 71.
Perniciousness of Considering Rest Cure a Panacea for "Nervous People." W. W. Young.—p. 73.
Fatigue. R. J. Holmes, Wadley.—p. 74.

Use of Radium in Treatment of Epithelioma. C. Swanson, Atlanta.—p. 75.
Significance of Stools in Infancy. M. M. McCord, Rome.—p. 78.
Etiology of Thrombo Angitis Obliterans. S. J. Sinkoe, Atlanta.—p. 81.

Trichocephalus Infection Following Appendectomy.—In the case cited by Hannah, the symptoms of postoperative abdominal adhesion were simulated by a *Trichocephalus trichiuris* infestation. Discovery of these parasites resulted from examination of the blood smear, with reference to the eosinophilia. Helminthiasis previously had never been suspected, as no gastro-intestinal symptoms were evident. The patient had been operated on for appendicitis, hence it was at first believed that the symptoms were caused by postoperative adhesions.

Illinois Medical Journal, Oak Park, Ill.

April, 1920, 37, No. 4

*New Skin Suture Material. E. H. Ochsner, Chicago.—p. 229.
War Neuroses and Psychoses: After Care and Treatment. F. P. and F. G. Norbury, Jacksonville.—p. 232.
Doctor and Public Health. C. St. C. Drake, Springfield.—p. 237.
Physician as an Investor. G. F. Lydston, Chicago.—p. 241.
Physicians' Fees. C. A. Buswell, Chicago.—p. 245.
Ophthalmologist and Otolologist; Retrospectively and Prospectively Considered. J. S. Clark, Freeport.—p. 248.
Diagnostic Hystotomy. B. G. R. Williams, Paris.—p. 254.
Influence of Carbohydrates and Fats on Nitrogen Equilibrium. A. Kraft, Chicago.—p. 255.
Why Have Both Primary Focal Infection and Subsequent Pulmonary Tuberculous Disease Their Origin Nearly Always in Air Vesicles and Not in Bronchial Tubes? J. Ritter, Chicago.—p. 257.
Surgical Technic in Tonsillectomy. J. Z. Bergeron, Chicago.—p. 261.
Health Insurance from Standpoint of Physician. C. J. Whalen, Chicago.—p. 264.

New Skin Suture Material.—The suture material used by Ochsner is made by treating silk chemically so that the tissue cells cannot penetrate the meshes of the silk. In addition, it renders the silk smoother, a little stiffer with less of a tendency to snarl, in fact, overcomes all of the objections to silk as a coaptation suture without robbing it of any of its desirable qualities. This material is said to overcome all the objections which can be raised against other suture materials.

Journal of Industrial Hygiene, Boston

April, 1920, 1, No. 12

*Significance and Treatment of Varicose Veins. J. Homans, Boston.—p. 567.
Industrial Dental Clinic from Standpoint of Industrial Surgeon. R. W. Elliott, Cleveland.—p. 575.
Charles Turner Thackrah. A Pioneer in Industrial Hygiene. T. M. Legge, London.—p. 578.
A Lecture on Sex and Venereal Disease Hygiene. E. B. Vedder, U. S. Army.—p. 582.
Twenty Years' Experience of Notification of Industrial Disease. T. M. Legge, London.—p. 590.

Treatment of Varicose Veins.—Forty-eight cases form the basis of Homans' paper on this subject. He points out that operative treatment to be efficient must permanently break the column of blood between the abdominal vessels, which have no valves, and the surface capillaries. If it accomplishes this, it permits the restoration of a considerable amount of surface venous circulation through small veins which have not been distended by the stagnation in the main venous channels. It does away with stagnant blood on the surface—blood which keeps pouring down the distended vessels and increases the work of the still normal deep veins. It thus removes veins which are worse than useless and affords real comfort, but as it does not restore the original surface circulation, it cannot be said to return the patient to an absolutely normal condition. In other words, a perfect surgical result may not make the leg as good as new. At the Peter Bent Brigham Hospital, the so-called Corliss stocking is used with good result as a form of palliative treatment. The so-called "jelly" bandage, which is nothing more than gauze permeated with a paste originally devised by Unna, is also useful.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March, 1920, 15, No. 1

*Physiologic Action of Fumes of Iodin. A. B. Luckhardt, F. C. Koch, W. F. Schroeder, and A. H. Weiland, Chicago.—p. 1.
Action of Pilocarpin, Atropin and Epinephrin on Tonus Waves in Terrapin Heart. C. M. Gruber, Colorado.—p. 23.

- *Action of Gum Acacia on Circulation. W. M. Bayliss, Condon.—p. 29.
Nonclotting Blood Pressure Apparatus. P. D. Lamson, Baltimore.—p. 75.
*Minimum Concentration of Dichlorethysulphid (Mustard Gas) Effective for Eyes of Man. C. I. Reed, Washington, D. C.—p. 77.
Pressor Compound from Pituitary Gland. A. C. Crawford, San Francisco.—p. 81.

Physiologic Action of Iodin Fumes.—On the basis of the results reported in this study there seems to be no question that the fumes of iodine are absorbed from the skin and by the pulmonary tissue. The negative results reported in man when the fumes and tincture were applied to the skin, are said to find a probable explanation in the fact that the urine and saliva were not collected over a long enough period of time. As a result of fuming the skin with the vapors of iodine the iodine content of the thyroid gland is greatly increased. The increase in iodine is accompanied by a pronounced change in the histologic features of the gland which clearly indicate an absorption of iodine. Iodin fumes when inhaled are absorbed by the respiratory tract; for the excess of iodine appears promptly in the urine and the iodine content of the thyroid gland is invariably increased, accompanied by a corresponding change in the histology of the gland. The indiscreet use of iodine fumes for inhalation leads to respiratory disturbances characterized by a dyspnea due to an inflammatory reaction in the lungs as result of the irritating action of the fumes. When iodine fumes are inhaled in quantities greater than 18 mg. per kilogram body weight, the animal dies within twenty-four hours from acute pulmonary edema. Intratracheal administration of iodine fumes leads to a temporary moderate rise in blood pressure and acceleration in the rate and increase in the amplitude of the respiration. The temporary rise is followed soon after by a more pronounced fall in the arterial pressure from which the animal partially recovers. After maintaining this pressure for a more or less prolonged period of time, the arterial pressure drops quite quickly. It is during this period that the signs and symptoms of acute pulmonary edema become quite marked. The respiration decreases in both rate and amplitude and ceases while the heart in the majority of instances shows a decided vagal inhibition.

The cause of death is an acute and rapidly developing pulmonary edema involving chiefly the basal portions of the lung. The edema supervenes more rapidly in animals having respiratory disease (tracheitis and bronchitis of beginning distemper) than in normal animals. It is clear therefore that the administration of iodine fumes by inhalation is a dangerous procedure. Such administration in persons with pulmonary disease is absolutely contraindicated.

Action of Gum Acacia on Circulation.—It is claimed by Bayliss that a solution of gum acacia of 6 or 7 per cent. in 0.9 per cent. sodium chlorid is capable of effectively replacing lost blood, unless the loss amounts to more than 75 per cent. of the blood volume. Hence its use in hemorrhage from various causes, whether from injury, disease or in operations. It has no chemical or druglike action and can be used in large quantities. It can also be used with benefit when the blood volume is reduced owing to removal of a part from effective circulation by stagnation in the capillaries, as happens in wound shock, traumatic toxemia and probably in similar conditions. In such cases, its primary object is to maintain a normal circulation until the toxic products are eliminated from the blood, while the blood out of circulation is restored to use. Neither gum nor blood has any permanent effect when the blood vessels are deprived of control by the vasomotor centers. Gum acacia does not produce anaphylaxis nor hemolysis. Nor does it agglutinate the blood corpuscles in man, although it does so in vitro in the case of some cats. This latter phenomenon does not appear to occur while the blood is in circulation, and is not followed by hemolysis, even in vitro. The addition of gum acacia to fluids used for perfusion of organs is recommended on account of the relative absence of edema.

Effect of Mustard Gas on the Eyes.—Reed found that concentrations of "mustard gas" of 0.0005 mg. per liter of air (1 part in 10,000,000), will produce visible reactions in less than one hour of exposure of individuals whose cutaneous resistance is relatively high.

Kentucky Medical Journal, Bowling Green

April, 1920, 18, No. 4

- Tuberculous Peritonitis. C. A. Vance, Lexington.—p. 93.
Community Sanitation. I. L. Denton, Fordsville.—p. 97.
Acute Surgical Diseases of Abdomen. J. Y. Welborn, Evansville.—p. 99.
Propnylactic Vaccines Against Influenza and Pneumonia. W. R. Thompson, Mt. Sterling.—p. 102.
Surgery from Standpoint of Average Doctor. T. J. Marshall, Bardwell.—p. 103.
Plaster of Paris in Throat. J. P. Edwards, Middlesboro.—p. 104.
Diagnostic Value of Roentgen Ray in Lung and Mediastinal Disease. V. Blythe, Paducah.—p. 105.
Case for Diagnosis. J. G. Sherrill, Louisville.—p. 106.
Blindness of Obscure Origin; Probably Due to Sinus Disease. S. G. Dabney, Louisville.—p. 107.
Epidemiology of Communicable Diseases and Discussion on Treatment.—p. 108.
Syphilitic Aortitis; Case Report. J. R. Morrison, Louisville.—p. 121.
Traumatic Laryngeal Edema; Case Report. I. A. Lederman, Louisville.—p. 122.
Focal Infection in Relation to Bones and Joints. P. C. Layne, Ashland.—p. 122.
Obstruction: Report of Cases. H. Rivers, Paducah.—p. 125.
Diagnostic Significance of Vertigo to General Practitioner. J. D. Heitger, Louisville.—p. 130.
What Can We Do For Inoperable Cancer Patient? A. H. Barkley, Lexington.—p. 131.

Laryngoscope, St. Louis

March, 1920, 30, No. 3

- Decrease of After Nystagmus During Repeated Rotation. C. R. Griffith, Urbana, Ill.—p. 129.
*Two Cases of Gradenigo's Syndrome. J. L. Maybaum, New York.—p. 138.
Cerebellar Abscess Associated with Chronic Suppurative Otitis Media: Operation and Recovery. J. C. Keeler, Philadelphia.—p. 143.
New Method for Closing off Eustachian Tube in Radical Mastoid Operation. A. Kahn, New York.—p. 146.
Brain Abscess as a Complication of Acute Infection of Nasal Accessory Sinuses. L. W. Jessaman, Framingham, Mass.—p. 147.
Tuberculosis of Larynx: Report of Cases. H. Kunz, New York.—p. 150.
Incomplete Mastoid Operation as a Cause of Delayed Healing. F. T. Hill, Waterville, Me.—p. 154.
An Adenoidoscope or Soft Palate Retractor. A. Kahn, New York.—p. 163.
Lupus of Upper Air Passages. R. Webber.—p. 164.

Gradenigo's Syndrome.—This syndrome is characterized by an acute purulent otitis media, with or without mastoid involvement; intense pain in the temporal and parietal regions from involvement of the gasserian ganglion, and paralysis or paresis of the abducens nerve of the same side as the aural lesion. Such a group of symptoms occurring during the course of a middle ear suppuration or of an acute mastoiditis, before or after operation, may occasion considerable apprehension of an intracranial complication. In the cases reported by Maybaum these symptoms presented in more or less characteristic manner. In one case, the complication occurred two weeks after a simple mastoid operation, while the patient was making a satisfactory convalescence. Complete recovery followed without any further surgical intervention. In the second case, there was a history of an acute middle ear suppuration which had completely resolved at the time Maybaum first saw the patient, the syndrome had been present, with lessening severity, for a period of ten days; there was entire absence of signs or symptoms of mastoid involvement. A fulminant type of meningitis developed, from which the patient succumbed the following day.

Michigan State Med. Society Journal, Grand Rapids

April, 1920, 19, No. 4

- Roentgen Ray as Aid in Early Recognition of Postoperative Ileus. J. T. Case, Battle Creek.—p. 151.
Shock, Hemorrhage and Blood Transfusion. R. C. Lockwood, Detroit.—p. 154.
*Acriflavine in Treatment of Venereal Conditions. R. Rosen, Detroit.—p. 161.
Community Hospital. J. G. R. Mauwaring, Flint.—p. 165.
Report of Psychologic Division of Michigan Department of Health for April, May and June, 1919. F. A. Foster.—p. 167.
Acidosis: Determination by Means of H-ion Concentration. T. L. Hills, Kalamazoo.—p. 171.

Acriflavine in Venereal Disease.—According to Rosen, acriflavine has not answered the requirements of an ideal gonococcide clinically but it is a valuable addition for the treatment of venereal conditions. It would be an ideal gonococcus prophylactic. In the author's experience, the discharge was controlled in 61.36 per cent. of the chronic cases in from

one to six days' treatment. In 33.74 per cent. the character of the discharge was changed to a mucoid one, while in 4.9 per cent. of the cases it was without effect for twelve treatments. Two negative smears were reported in 60 per cent. of the chronic cases five days after discontinuance of treatment, i. e., no gram-negative diplococci were demonstrated. In 20 per cent. the discharge stopped but did not affect the organisms. In the other 20 per cent. of the cases the result varied, i. e., the first smear was reported negative and the second positive, or vice versa. Severe burning was complained of in 39.9 per cent. of all the cases, and was most intense in the acute cases.

Minnesota Medicine, Minneapolis

April 20, 1920, 3, No. 4

Rational Treatment of Carcinoma of Uterus. J. W. Little, Minneapolis.—p. 159.

Results of Cholecystectomy. W. A. Dennis, St. Paul.—p. 163.

*Palliative Treatment Versus Radical Treatment of Trifacial Neuralgia. A. W. Adson, Rochester.—p. 169.

*Protein Sensitization in Asthma and Hay Fever. A. H. Sanford, Rochester.—p. 174.

Protein Sensitization in Bronchial Asthma and Hay Fever. C. N. Hensel, St. Paul.—p. 180.

Colloidal Gold and Other Cerebrospinal Fluid Reactions. C. E. Nixon, Minneapolis.—p. 186.

Colloidal Gold Reactions. M. Warwick, Minneapolis.—p. 188.

Prevention and Control of Venereal Diseases. S. Lull, Waubay, S. D.—p. 191.

Injuries to Skull. O. N. Meland, Warren, Minn.—p. 195.

Palliative Treatment of Trifacial Neuralgia.—Adson reports on 805 alcohol injections in 318 patients in addition to 203 other palliative operations, making a total of 1,008 palliative surgical treatments. Ninety patients have had the radical operation with complete relief, the remaining 228 are still seeking relief by temporary methods. Having personally divided the posterior root in seventy-four cases of trifacial neuralgia, he is convinced that the radical operation is indicated in operable cases after one or two alcohol injections, in preference to continuing the palliative procedures indefinitely.

Protein Sensitization in Asthma and Hay-Fever.—A preliminary report is made by Sanford on the work done thus far on protein sensitization in asthma and hay-fever in the Mayo Clinic. Tests have been made on more than 800 patients during the past two years. Of this number, more than 500 were entirely negative in their skin reaction. The reactions of about 100 more were doubtful. The remaining patients, more than 200 in number, had definite skin reactions. Twenty-eight persons reacted positively to some of the animal emanations. The largest number of reactions was to horse dander. One hundred persons reacted to one or several of the proteins derived from foods. The greatest number of reactions was to egg white; eleven patients in all were sensitive to this protein. Twenty-five patients had marked positive reactions to grain. Twenty-eight patients were sensitive to vegetable proteins. This group, on the whole, is negative. Fruits, apparently, have little to do with asthma. In several instances banana gave marked reactions. Twice it was known to be a definite factor in producing asthma. In 365 tests to *Staphylococcus pyogenes-aureus* and *Staphylococcus albus* there was not a single reaction. Of the patients sensitive to ragweed and other fall pollens, fifty-two were definitely positive, thirty-six with hay-fever and sixteen with both hay-fever and asthma. The discussion of the treatment is reserved for a later report.

Oklahoma State Medical Ass'n Journal, Muskogee

February, 1920, 13, No. 2

*Sporotrichosis. E. S. Lane, Oklahoma City.—p. 41.

Relation of Focal Infections to Skin Diseases. C. H. Ball, Tulsa.—p. 49.

Obstructions to Outlet of Stomach. E. N. McKee, Enid.—p. 59.

Operative and Diagnostic Cystoscopy. B. Lewis, St. Louis.—p. 63.

Importance of Urologic Examination in Cases of Obscure Abdominal Pain and in Bladder and Kidney Infections. J. H. Sanford, Muskogee.—p. 73.

Sporotrichosis.—Lane reports five cases and details the clinical history of this affection. In each case the patient had had contact with a domestic animal. The patient made a rapid recovery in about fifteen days under the treatment given, which consisted of tincture of iodine and roentgen ray locally, with potassium iodide.

Texas State Journal of Medicine, Fort Worth

April, 1920, 15, No. 12

Congenital Defects and Heredity in Relation to Eye: Special Reference to Retinitis Pigmentosa. L. H. Lanier, Texarkana.—p. 424.

Technic in Cataract Extraction. L. K. Beck, San Antonio.—p. 426.

Senile Cataract Extraction. W. Ralston, Houston.—p. 427.

Direct Vision in Removing Foreign Bodies from Eye and Lung; Transfusion in Hemophilia. D. L. Bettison, Dallas.—p. 429.

Gas Anesthesia. W. W. Boyne, Fort Worth.—p. 431.

Intravenous Solutions: Life-Saving Measure in Infancy and Childhood. H. L. Moore, Dallas.—p. 432.

Woman: Ideal Maker of Nations. E. H. Cary, Dallas.—p. 433.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Indian Journal of Medical Research, Calcutta

Special Number, 1919

Research Work on Cholera. L. Rogers.—p. 1.

"The Next War": Man versus Insects. W. G. Liston.—p. 18.

Results of a Mosquito Survey of Indore City. M. O. T. Iyengar.—p. 26.

*Hydrocyanic Acid Gas as an Insecticide. W. G. Liston.—p. 40.

Beriberi. P. Hehir.—p. 44.

*Anti-Beriberi Vitamin Content and Antiscorbutic Property of Sun-Dried Vegetables. J. A. Shorten and C. Roy.—p. 60.

*Scurvy. P. Hehir.—p. 79.

*Quinin in Treatment of Malaria. J. W. Cornwall.—p. 83.

Treatment of Malaria by Quinin. P. Hehir.—p. 89.

*Results of Treatment at Malarial Convalescent Depot, Dagshai. D. F. Curjel.—p. 101.

Quinin. R. S. Kennedy.—p. 105.

*Simple Method for Detecting Fecal Carriers. W. G. Liston and S. N. Gore.—p. 107.

Enteric Carriers. J. A. Cruickshank and H. M. Lafrenais.—p. 124.

Amebic Dysentery Carrier. W. MacAdam.—p. 135.

Carrier Problem. J. Cunningham.—p. 142.

Rat Problem of India. J. C. G. Kunhardt.—p. 145.

Rat and Plague Conditions in Huttid Camps. J. Taylor.—p. 173.

Rat Problem. W. A. Justice.—p. 179.

Meteorologic Conditions in Mesopotamia Affecting Occurrence of Heat-stroke. J. Taylor.—p. 181.

Diagnosis on a Large Scale in Hook Worm Infection. C. Lane.—p. 186.

Is Human Bilharziosis Likely to Spread in India? M. B. Soparkar.—p. 207.

Existence of Distoma Disease in India. N. F. Surveyor.—p. 214.

Prophylaxis of Dracontiasis. D. A. Turkhud.—p. 217.

Small Outbreak of Lobar Pneumonia in Baghdad Due to a Bacillus of Gaertner-Paratyphoid Group. W. MacAdam.—p. 226.

Remarks on Quinin Treatment of Malaria, etc. P. Hehir.—p. 233.

Sodium Morrhuate in Treatment of Tuberculosis. L. Rogers.—p. 236.

Hydrocyanic Acid Gas as Insecticide.—The quantity of chemicals required for 100 cubic feet of space to be treated is one-half ounce each of potassium cyanide and strong sulphuric acid. It is important to note that the potassium cyanide is pure. Under satisfactory conditions, where there is very little loss of gas by leakage from the room and when the room is empty, this will give approximately 110 parts of hydrocyanic acid per hundred thousand parts by volume of mixed gases in the room.

Antiscorbutic Property of Sun Dried Vegetables.—The experiments reported on by Shorten and Roy that three varieties of sun dried vegetables, viz., carrots, onions and cabbages, retain to some extent their antiscorbutic properties; while spinach is entirely lacking in this virtue.

Scurvy.—Hehir reports on the epidemic of scurvy among British troops and natives in Mesopotamia. He also calls attention to the fact that the Lister Institute has been investigating the etiology of scurvy carefully, and has found that germinating grains and pulses of various sorts contained antiscorbutic vitamins after the grain has sprouted.

Quinin in Malaria.—The whole subject of quinin and malaria, in Cornwall's opinion, requires and merits a properly devised and coordinated scientific enquiry, in order to determine whether quinin in harmless doses can act as a reliable prophylactic; if it cannot, then its use should cease; whether a primary attack of malaria due either to *Plasmodium vivax* or to *P. malaria* or to *P. falciparum* can be cured by doses of quinin which, compared with the harmful influence of the parasite, are relatively harmless to the patient; whether any useful purpose is served by dosing a patient with quinin between his relapses; whether any other chemical combination can be found which is able to destroy the parasites of

malaria without at the same time exerting a seriously harmful effect on tissue cells.

Quinin in Malaria Re'apse.—Curjel is firmly convinced that some form of quinin appears to be the drug indicated for the treatment of malarial relapse. The exact mode of administration is immaterial, nor does there seem to be any advantage in excessive doses.

Detecting Fecal Carriers.—The method described by Liston and Gore is one which can be used by the general practitioner, provided he secures some ordinary agar slopes, a graduated pipet marked in fiftieths of a cubic centimeter, a feces emulsion tube, two platinum loops, some high titre agglutinating serum and a glass plate with hollows or some watch glasses. A little sterile water or physiologic sodium chlorid solution will also be required, together with an alcohol lamp, some slides, stains and a microscope. The details of the method are given.

Journal of Laryngology, Rhinology and Otology, London

April, 1920, 35, No. 4

Latent Sphenoidal Sinusitis in Children with Recurrent Adenoids and Appendicitis. P. Watson-Williams.—p. 97.

*Thirteen Cases of Aural Tuberculosis in Infants. D. Guthrie.—p. 99.

*Method of Suturing Pillars of Fauces. T. Guthrie.—p. 102.

Origin of Quick Phasis of Vestibular Nystagmus. A. Rejo.—p. 103.

Tuberculous Otitis Media.—Among seventy-nine cases of chronic suppurative otitis media in which the causal condition was noted, Guthrie found thirteen cases of tuberculous origin. The mode of feeding was noted in eleven cases and in nine of these unboiled milk was used. Hence, it appears probable that the tuberculous infection is primarily implanted in the nasopharynx, whence it is conveyed to the middle ear by way of the eustachian tube.

Suturing Pillars of Fauces.—Guthrie passes a curved slot-eyed needle from behind forward through the posterior pillar, then, if thought necessary, through a thin layer of the tissue lining the tonsil fossa, and finally through the anterior pillar. The suture having been engaged in the slot of the needle, the latter is withdrawn and the suture disengaged and tied.

Lancet, London

April 3, 1920, 1, No. 5040

*Diagnosis of Disease of Pancreas. A. E. Garrod.—p. 749.

Radiology in Chronic Intestinal Stasis. A. C. Jordan.—p. 756.

*Electrical Stimulation of Nerves at Operation. N. H. M. Burke.—p. 761.

*Fatal Anaphylaxis Following Prophylactic Administration of Antitetanic Serum. F. B. Gurd and E. Emrys-Roberts.—p. 763.

Oxygen and Air Replacement of Fluid in Pleural Cavity. F. G. Chandler.—p. 764.

*Hydropathic Treatment of Malaria. T. Zangger.—p. 766.

*A Large Ureteral Calculus Associated with Pyonephrosis. R. L. Ley.—p. 767.

Rupture of Aortic Aneurysm into Pulmonary Artery. W. E. Peacock.—p. 767.

Diagnosis of Pancreas Disease.—Garrod cites cases to emphasize that in the diagnosis of disease of the pancreas practically every sign, symptom, or test may fail and that the application of physiologic discovery at the bedside needs the cooperation of the laboratory and the ward.

Electrical Stimulation of Nerves at Operation.—In order to avoid needless operation, Burke says it must be remembered that conductivity is conclusive evidence of physiologic continuity of nerve fibers, as also is excitability below the lesion. Improvement in conductivity or in peripheral excitability following immediately after neurolysis is suggestive of only slight compression and possibly chemical nerve-block. Absence of conductivity and of excitability, even after neurolysis, is not conclusive evidence of division, but is probably an indication of fairly severe nerve disturbance.

Anaphylaxis Caused by Antitetanic Serum.—The case report by Gurd and Roberts is that of a healthy man who collapsed following the hypodermic administration of a relatively small dose—5 c.c.—during life identical with those which occur in anaphylactic shock in the dog, and with necropsy findings typical of those which are found in the guinea-pig.

Hydropathic Treatment of Malaria.—Eighteen soldiers had had lengthy consecutive courses of quinin treatment for chronic malaria without results. Zangger discontinued the quinin and gave the patients tepid "half baths." The arms, legs, and chest of a patient lying in a bath half filled with tepid water (82 F.) are rubbed for five minutes in the water then dried, and the patient is put to bed. Ambulant cases can rest for an hour and then return home. These baths were repeated three times a week for from three to four weeks, the average of baths per patient being eight. The malaria came to an abrupt termination within 10 days. During five weeks only five attacks were noted, and all the eighteen cases except one, who had one single slight feverish attack, were free from fever for the year during which they remained under observation.

Large Ureteral Calculus.—The stone in Ley's case was 3 inches in length and 4 inches in circumference. It weighed 2 ounces, 2 drams.

Archives des Mal. du Cœur, etc., Paris

December, 1919, 12, No. 12

*The Phlebogram in Complete Arrhythmia and in Tricuspid Insufficiency. P. Schrumpf (Geneva).—p. 529.

*Mechanism of Double Crural Sound. C. Pezzi (Pavia).—p. 547.

The Phlebogram in Complete Arrhythmia and in Tricuspid Insufficiency.—Sphygmographic and electrocardiographic researches combined have led Schrumpf to the conclusion that serious cases of insufficiency of the tricuspid valve are nearly always accompanied by complete arrhythmia; most cases of complete arrhythmia, however, are independent of any insufficiency of the tricuspid valve.

The Mechanism of the Double Crural Sound in Aortic Insufficiency.—On the basis of his own independent investigations, Pezzi opposes the view advanced by Traube in 1867 that the double crural sound is a characteristic symptom of aortic insufficiency, and corroborates the opinion of Dagnini that it is a phenomenon of mixed, that is to say, of arterial and venous origin. Pezzi has never found it present in aortic insufficiency that was perfectly compensated. He has observed it only when there was more or less manifest myocardial insufficiency.

Journal de Médecine de Bordeaux

March 25, 1920, 91, No. 6

*Hydatid Cysts of the Lung. Creyx.—p. 139.

Brain Monstrosities. G. Jeanneney.—p. 147. Cont'd.

Carbuncle with General Staphylococcus Infection. R. Darget.—p. 152.

Typhoid Bacillus in Fixation Abscess in Typhoid. Damade.—p. 153.

*Chromic Acid in Fusospirillar Infections. W. Dubreuilh.—p. 153.

Clinical Forms of Hydatid Cysts of the Lung.—Crex remarks that there is scarcely any physical or functional syndrome of the lung that these cysts may not realize. He therefore thinks that a division into differentiated semeiologic types would have value for the physician who is called on to give his opinion in a case of pulmonary echinococcosis that he has had an opportunity to observe only a limited time: namely, the latent type, the pseudotuberculous type, the pseudopleuritic type, the type simulating intrathoracic tumor, and the suppurative type. Creyx gives six case reports in illustration of these various types. This classification would have the effect of inviting the aid of roentgenologic, serologic and hematologic methods in solving the doubtful problems, and thus the clinician would be put on the right track leading up to appropriate and successful therapy.

Chromic Acid in the Treatment of Vincent's Angina and Other Fusospirillar Infections.—Dubreuilh recommends in Vincent's angina and in analogous infections a saturated solution of chromic acid, applied with a firmly twisted cotton swab. The oxidizing power of the chromic acid is such that if the solution is fresh and one does not use the swab at once after moistening it in the solution, it will begin to fume and the cotton will be found to be carbonized. The swab should therefore be barely moistened and not allowed to accumulate superfluous liquid. The ulcerations are rubbed rapidly and vigorously with the swab so as to detach

mechanically the false membranes and to bring the solution in direct contact with the ulcerated surface. The patient should also be allowed to rinse out his mouth at once, but should be cautioned not to swallow any of the saliva mixed with the acid. Occasionally it may be necessary to make a second application about the fourth or fifth day.

Lyon Médical

March 10, 1920, **129**, No. 5

Emergency Treatment of Cranial Traumatism. P. Santy.—p. 201.

Paris Médical

March 13, 1920, **10**, No. 11

*Renal Syndrome with Asystolia. O. Josué and Parturier.—p. 221.

*Trophedema in the Insane. E. Coulonjou and others.—p. 230.

Disturbances in Kidney Functioning with Asystolia.—Josué and Parturier have published a number of articles on what they call the renal syndromes of asystolia, and here explain the mechanism by which oliguria of cardiac origin entails uremia and edema even when the kidneys are sound. The elimination of waste through the kidneys is defective because there is not enough water pumped into the kidneys to rinse out the waste, and the water stagnates and accumulates in the tissues. The symptoms may indicate uremia from serious kidney disease but under digitalis the whole train of symptoms subsides. The Ambard ureosecretory index may be misleading in oliguria from asystolia, as also other tests of kidney functioning. The heart action should be brought back to approximate clinically normal and the oliguria be corrected by other means before the findings of these tests can be accepted as reliable. Albuminuria may be merely the consequence of the venous stasis, and it may disappear as this is corrected by the *polyurie libératrice*. The true figure representing the arterial pressure cannot be estimated during periods of asystolia and oliguria. There may even be asystolic hypertension, paradoxical as this seems. In asystolia, digitalis is always indicated, whatever the condition of the kidneys. But its task should be facilitated by getting rid of the water accumulated by the venous stasis; venesection and a drastic purge are the indispensable prelude to the digitalis. Nothing but milk should be allowed; with extreme oliguria, nothing but water; the amount of fluids should not be over 1.5 liter, and 100 or 150 gm. of lactose can be added. Small doses of digitalis are notoriously inadequate in the renal syndromes of asystolia, and the drug should be kept up until the energy of the heart seems to be permanently reestablished; one of his patients has taken a small dose daily for years. It is not necessary to restrict salt after the heart action has been restored to normal; there is no danger of return of the dropsy in these cases. The asystolia may be latent but still may imprint its stamp on the symptoms from lungs and liver as well as from the kidneys.

Trophedema in the Insane.—The trophedema in the two cases reported accompanied chronic mania; this seems to confirm the endocrine-sympathetic nature of the trophedema. It is possible that the factors responsible for the latter may be involved also in the causation of the mental disease.

Policlinico, Rome

Feb. 23, 1920, **27**, No. 8

*The Blood Platelets. R. Marchesini.—p. 227.

Epidemic Encephalitis. Two Fulminating Cases. E. Beretta.—p. 230; C. Castelli.—p. 231.

No Outdoor Night Work in Malarial Zones. G. Conforti.—p. 234.

The Blood Platelets.—Marchesini has continued his extensive research on the blood platelets, and here reports that the erythrocytes can all be classed in three groups, the stable, the partly stable and unstable, and that the early disintegration of the latter leads to formation of blood platelets out of their débris. The leukocytes serve merely as gathering centers for the débris of the unstable erythrocytes. This unstable group take stains instantaneously. The process of formation of platelets can be watched most instructively on the large erythrocytes of frogs and fowls. The unstable erythrocytes disintegrate more quickly under the influence of an aqueous extract of leeches.

Riforma Medica, Naples

Dec. 13, 1919, **35**, No. 50

*Hepatopexy. R. Mosti.—p. 1090.

Relations Between Influenza and Other Diseases. A. Bertolini.—p. 1100.

Fulguration for Cancroid of the Face. G. Paoletti.—p. 1103.

Operative Correction of Ptosis of the Liver.—Mosti devotes ten pages to a summary of the different methods in vogue for hepatopexy for total downward displacement of the liver, and comments on the disadvantages of all except the Santucci method. He reports the seventh case in which the latter has been applied, and extols the favorable conditions and permanent correction of the hepatoptosis without the slightest injury to the liver. A long curving incision is made from the sternal margin of the rectus abdominis sweeping down to four fingerbreadths below the costal arch and then up a little to the axillary line. The skin-muscle flap is turned back on the chest, and the peritoneum is incised just below the fold of the flap. The liver is then moved up into place and held there while the free lip of the incision in the peritoneum is rolled up on itself to make a kind of cord; this is encircled by three loops of stout silk about 3 or 4 cm. apart. Each silk thread is then passed through the right lobe of the liver, from the bottom to the top, about 2 or 3 cm. from the sharp edge, exactly to correspond to the location of the threads encircling the rolled-up cord of peritoneum. These threads are then drawn up and tied over the costal arch. The liver is thus supported from beneath and suspended from above, without any direct traction on the liver itself. The simple technic is shown in three illustrations. Mosti has found about thirty operative cases of total hepatoptosis on record, with nearly as many different technics as there were cases. He discusses further the clinical picture with sagging liver. In the case reported, the symptoms for a long time were merely from the stomach, but as the ptosis became more pronounced there was continuous and spasmodic pain, probably from traction of the heavy organ on its ligaments and from pressure on the solar plexus.

Rivista Critica di Clinica Medica, Florence

Jan. 5, 1920, **21**, No. 1

*Tactile Vocal Fremitus in Croupous Pneumonia. A. Gallotti.—p. 1.

*Uremia and Ureic Diuresis. Fornaseri.—p. 4.

Jan. 15, 1920, **21**, No. 2

Arsphenamin in Chorea. G. Salvetti.—p. 13.

Vocal Fremitus in Croupous Pneumonia.—Gallotti found the tactile vocal fremitus in fifteen patients with croupous pneumonia diminished during the second stage in 48 per cent. and intense in 17 per cent. In the first and third phases of the disease it was generally exaggerated. It is of autochthonous origin, that is, it occurs without the influence of the chest wall.

Uremia.—Fornaseri reviews the uremia with various acute and chronic diseases, and emphasizes that in treatment the diet should be poor in nitrogen and without salt. In the acute form, water, teas, gruels, stewed fruits and a small amount of milk are advisable. On water alone, the azotemia may increase, from autophagia. On a milk diet, also, the azotemia always notably increases. In chronic cases, cereals, vegetables, fruit and spaghetti may be allowed but only very little milk and meat. To promote elimination of the urea, measures to stimulate diuresis may include subcutaneous injection of artificial serum with 47 per cent. glucose or 0.5 per cent. lactose, injecting 10 gm. of the serum per kilogram of weight when the blood pressure is high, and 15 gm. when it is unduly low. Revulsives to the kidney region, purges and venesection are also useful.

Archivos Españoles de Pediatría, Madrid

January, 1920, **4**, No. 1

*Intradermal Tuberculin Treatment of Pulmonary Tuberculosis in Children. J. García del Diestro and B. Cordero.—p. 5.

*Polycystic Disease of Omentum. V. Juaristi and D. Arraiza.—p. 20.

Intradermal Tuberculin Treatment of Pulmonary Tuberculosis in Children.—García and Cordero relate their expe-

ences with Mantoux' intradermal technic applied in systematic tuberculin treatment of children, in this instalment of their article, analyzing the cases in which no benefit was realized. These cases in which the method failed, proved useful guides for selecting other cases for the method and for the proper doses until highly favorable results could finally be counted on. To begin with, they state that dispensary treatment by subcutaneous injection of tuberculin has too many drawbacks and dangers, but the intradermal technic is free from these to a large extent, while the response to the intradermal injection is an instructive index of the individual tolerance at the moment, often rendering careful analysis of the temperature, weight, etc., unnecessary. The intradermal technic allows a tentative course of tuberculin treatment without danger for the patient, even when it proves ineffectual.

Cystic Disease of the Omentum.—The ruddy boy of 4 seemed healthy except for the enormous distention of the abdomen. A laparotomy revealed a mass of cysts, mostly united, and requiring the removal of the entire gastrocolic omentum. The conditions in the resected mass testified to the fetal origin of the cysts, some inflammation of the omentum during intra-uterine life having prevented the normal fusion of the layers, so that the inflammatory exudation held them apart and entailed the cyst production. Some of the cysts were as large as a fist, others only the size of a nut, and nearly all were joined together. Neither puncture nor the laboratory would have thrown any light on this case. Juaristi and Arraiza remark in conclusion, saying that if physicians would examine the peritoneum for themselves instead of trusting blindly to what is written in books—which copy one from the other—it would be better for all concerned.

Brazil-Medico, Rio de Janeiro

Feb. 7, 1920, 34, No. 6

*Vomica with Interlobar Pleurisy. Cardoso Fonte.—p. 81.

*Tonsillectomy. C. Rohr.—p. 84.

Examination of Spinal Fluid in Syphilis. G. Moura Costa.—p. 87.

Feb. 14, 1920, 34, No. 7

Chronic Delirium with Hallucinations. H. Roxo.—p. 97.

Recurring Hemoptysis after Influenza. O. Clark.—p. 100.

Definition of Cenesthesia and Kinesthesia. Vieira de Moraes.—p. 101.

Vomica with Pleurisy.—Cardoso has encountered two cases in which encysted pleurisy led to a vomica, the patient suddenly expelling from the lungs a mass of fetid pus and blood to a total of about 200 gm. This occurred at the eleventh day of the disease, during the night, in one of the cases. This patient was a woman of 40 and there had been scarcely any coughing before. Recurring hemoptysis and purulent expectoration kept up afterward for nearly three months, but recovery was complete by the fourth month. There was nothing to suggest a pulmonary process or syphilis, and the physical signs indicated interlobar pleurisy as well as the intense dyspnea, the hemoptysis and the intensely fetid breath and sputum. In another case the sudden expulsion of fetid pus and subsidence of symptoms was followed a week later by another vomica of about equal intensity soon followed by recovery; there must have been two sacs of pus in this case, he thinks. In still another case subcontinuous fever, cough and fine râles in the right lung suggested tuberculosis, but by the end of a month the extreme fetidity of the breath impelled closer examination, and a zone of dulness was found in the middle of the right half of the chest, at the back, a suspended area of dulness. This pointed to interlobar pleurisy, and puncture followed by thoracotomy led to prompt improvement of the symptoms from the pleura. If benefit is not soon apparent after the vomica, surgical measures should be considered, but the patient first mentioned recovered under symptomatic treatment alone, ergot, emetin, calcium chlorid, etc., with balsamics to promote expectoration. The hemoptyses were often alarming, but the good general condition and the final complete recovery justified the exclusive medical treatment.

Tonsillectomy.—Rohr gives an illustrated description of the technic and after-care, with special reference to the Sluder method.

Gaceta Médica de México, Mexico

January, 1920, 1, No. 4

*Operation on Nerves. M. Toussaint.—p. 3.

Treatment of Keratoconus. E. F. Montañó.—p. 7.

Influenza in the City of Mexico. J. León Martínez.—p. 11.

*Treatment of Neurosyphilis. A. Brioso Vasconcelos.—p. 15.

Operations on Ulnar and Median Nerves.—Toussaint describes the preferable technic for operations on these nerves as he applied it in a man of 30 whose right arm had been paralyzed since a gunshot wound eight months before. The operation included neurolysis, suture, and isolation of the sutured segment. The man is said to have now, two years later, complete functional use of his arm. The segments were isolated with two free flaps of adipose tissue, and Toussaint expatiates on the advantages of adipose tissue for this purpose and for arresting hemorrhage in operations on the liver, spleen, etc.

Treatment of Neurosyphilis.—Vasconcelos reviews the literature on this subject, and reports seven cases from his own practice in which he gave intraspinal treatment. He urges this direct treatment of syphilitic disease of the central nervous system whenever the spinal fluid gives a positive Wassermann, Pandy, Nonne, Noguchi or Lange reaction, and still more imperatively when several of these reactions are associated, as the patient is then a candidate for tabes or general paresis.

Repertorio de Medicina y Cirugía, Bogota

February, 1920, 11, No. 5

*Signs of Collective Degeneration in Colombia and Countries Similarly Situated. Miguel Jiménez López.—p. 227.

Hygiene of Milk. G. Arbeláez R.—p. 264. Conc'n.

Collective Degeneration of the Human Race in Colombia.—Jiménez states that Colombia is one of the three countries of the world with the lowest number of marriages (4 per thousand inhabitants), although the number of births was 31 per thousand in 1915. The mortality was 20.9 per thousand. The life expectancy is below the average, he says, and men at 30 have passed their prime, corresponding to the age of 45 in the temperate zones. His remedy is—in addition to hygiene and preventive medicine—to invite immigration on a large scale from peoples with characteristics opposite to those of the Latin races. He specifies in particular Switzerland, Belgium, Holland, Wurtemberg and the Tyrol as the countries where it would be best to seek immigrants.

Semana Médica, Buenos Aires

Dec. 18, 1919, 26, No. 51

*Latent Tuberculosis in Young Children. J. P. Garrahan.—p. 771.

*Fibromatous Degeneration of the Uterus. C. A. Castaño.—p. 781.

Vaccine Treatment and Prophylaxis of Tuberculosis. F. Gómez Alvarez.—p. 783.

*Amebiasis of the Lung. R. A. Bullrich.—p. 793.

Regional Anesthesia for Operations on the Uterus. E. A. Fox.—p. 797.

Mixed Infection in Tuberculosis. F. Gómez Alvarez.—p. 798.

Dec. 25, 1919, 26, No. 52

Uni-Ovular Twins. F. A. Deluca and V. Widakowich.—p. 807.

Case of Total Inversion of Viscera. J. Bacigalupo.—p. 812.

The Royer Atomic Theory. Clemence Royer.—p. 818.

Present Status of Local Anesthesia. J. M. Jorge.—p. 829.

Artificial Eyelids and Eye. R. Gil.—p. 837.

Etiologic Factors in Laennec's Cirrhosis. F. Fernández Martínez.—p. 840.

Masked Tuberculosis in Children.—Garrahan relates that a tuberculin test, often applied up to four times, to 1,214 children at Buenos Aires, between 2 and 16, revealed that over 75 per cent. of the older children, between 14 and 16, were probably infected with tubercle bacilli. The children were apparently healthy and all of the poorer classes. Those brought up in asylums or other institutions showed 20 per cent. less tuberculous than those brought up in families. In infants with tuberculosis, the disease was never found entirely latent. Garrahan's experience thus differs from others' in this respect.

Origin and Treatment of Fibrous Degeneration of the Uterus.—Castaño presents an array of evidence to sustain the assumption that congestion in the uterus, of endocrine or infectious origin, is the initial stage of what progresses

to sclerosis, fibromatosis, parenchymatous metritis, etc.—all these are merely different stages of the one process. It begins with congestion and eventuates in sclerosis. This conception opens new horizons for treatment of all the eight typical uterine affections which hitherto have been regarded as separate entities. Local measures to reduce congestion, radiotherapy and kinesitherapy, with ovarian, thyroid or other glandular extracts to restore the endocrine balance, are the proper treatment for all stages and will benefit all but irreparable lesions. Treatment for syphilis may also be indicated.

Pulmonary Amebiasis.—Bullrich summarizes three other cases on record of nonsuppurating amebiasis in the lung, and describes in detail a case in his own service. The man of 43 had been clinically cured of dysentery with emetin six years before. After nearly three years, there had been a tendency to diarrhea. Then came sudden pain in the shoulder and it progressed, with coughing and sensations of something tearing loose in the lung, with bloody sputum afterward. There was also pain in the lung and liver and some fever, and the stools became dysenteric but no amebas could be found, no tubercle bacilli, and the Wassermann test was negative. Roentgenoscopy showed the apexes clear, but the right lung below cast a shadow, and the diaphragm was immovable. Under emetin, the temperature, stools, lung findings and general condition promptly returned to normal. Bullrich remarks in conclusion that the amebas probably invade the liver first, through the portal system. If they pass beyond the barrier of the liver, the lung is the next barrier they encounter.

Mitteilungen a. d. med. Fak. d. kais. Univ., Tokyo

June 14, 1919, 21, No. 3. German Edition

*Action of Volatile Substances on Blood Pressure. S. Yamada.—p. 355.

*Antitrypsin in the Blood. S. Tachigara.—p. 437.

*Cord Anomaly in Knee Joint. T. Mayeda.—p. 507.

Action of Volatile Substances on Blood Pressure.—Yamada experimented, mainly on rabbits, with fifteen strong smelling and volatile fluids, including benzine and chloroform, and with fifteen essential oils, two perfumes, and with musk, camphor, phenol and tobacco smoke. They can all be classified according to the effect on the trigeminal or the olfactory nerve or on both combined. The reflex action from their effect in the nose raises the blood pressure but in the trachea depresses it. Simple mechanical or electric stimuli applied to the nasal mucosa seem to have a similar blood pressure-raising action, he relates.

Trypsin and Antitrypsin in the Blood.—Tachigara has been applying quantitative tests for antitrypsin in the blood in the healthy and in a number of pathologic conditions as he describes in detail, and reviews a bibliography of seventy-six titles on the subject.

Cord Anomaly in the Knee Joint.—Mayeda describes what he calls chordae cavi articularis genu and explains as an embryonal malformation of comparatively common occurrence. It is usually overlooked on opening the joint as no one examines the inner wall of the normal knee joint, and the cord bridging the cavity is not seen unless carefully sought for. Opposite conditions prevail in respect to the heart cavity, so that abnormal cords in the heart are readily recognized.

Berliner klinische Wochenschrift, Berlin

Dec. 22, 1919, 56, No. 51

Clinical Observations on Abdominal Pressure. E. Melchior.—p. 1201.

Hypertonia as a Constitutional Anomaly. F. Munk.—p. 1205.

Pathology of the Sympathetic System in Influenza. E. Riese.—p. 1208.

*Acute Dermatomyositis. Ridder.—p. 1211.

Pharmacology of Digitalis Leaves. G. Joachimoglu.—p. 1212.

Acute Dermatomyositis Simulating Trichinosis.—Ridder calls attention to the diagnostic value of the absence of hyperleukocytosis and of eosinophilia in a case of dermatomyositis, as this was the first definite indication that the case in hand was not trichinosis, which it closely simulated. That the spleen was not enlarged was also atypical. A diagnosis of dermatomyositis once established, treatment con-

sisted of profuse diaphoresis induced by light baths and hot air; inunction of the skin, and administration of stomachics and sedatives, with quinin in small doses. Ridder adds that an exact account of the anatomic findings and the course of the disease is to be given soon in a thesis by Behrendt.

Deutsches Archiv für klinische Medizin, Leipzig

Aug. 15, 1919, 130, No. 1-2

*Auricle Pulse and Venous Pulse in Man. H. Straub.—p. 1.

Morphologic Examination of the Blood in Diagnosis of Tertian Malaria.

V. Schilling.—p. 21; Idem. C. Klieneberger.—p. 131.

Friedmann's Treatment of Pulmonary Tuberculosis. P. Deuel.—p. 27.

*Extrarenal Elimination of Cardiac Edema. A. Heineke.—p. 60.

*Heart Block. A. Eckstein.—p. 95.

*Aleukemic Myelosis. E. Keuper.—p. 118.

*Origin of Hemorrhagic Diatheses. R. Klinger.—p. 127.

Pulsation in the Auricle in Relation to the Venous Pulse.

—Straub has been making a systematic study of this subject in a young officer left with a large defect in the chest wall after resection of the sternal ends of several of the right ribs for a suppurating gunshot wound. The bullet had lodged in the wall of the superior vena cava near its entrance in the right auricle. The defect was covered with skin and the action of the heart did not seem to be impaired, but the pulsation of the auricle was distinctly visible and could be compared with the venous pulse, throwing light on the mechanism and interpretation of the latter, as Straub explains.

Extrarenal Elimination of Cardiac Edema.—Heineke tabulates the findings in a number of extremely severe cases of edema from heart disease to demonstrate that instead of depending on the diuresis figures in estimation of the course of the case, the scales should be consulted. The patient's weight is the main criterion of the success of the efforts to reduce the edema. He does not agree with those who maintain that digitalis and strophanthin given for the heart disease are liable to induce contraction of the vessels in the kidneys, thus closing the outlet for the fluid through the kidneys. There may be other causes for the lack of effectual diuresis. The mobilization of the edema fluid by the action of the heart tonic on the circulation, and the consecutive hydremia, promote both the renal and the extrarenal elimination of the water. It is more difficult, however, for the circulation through the complicated system of glomeruli and tubuli to be restored to approximate normal than the circulation through the vessels in the skin. Hence the vessels in the skin may get to work sooner and act more efficiently than the vessels in the kidneys; there is no need to assume any constriction of the renal vessels to explain this delay in their functioning. In the cases of which curves are given, the extreme stasis in the vessels in the kidney was evidently exceptionally difficult to overcome. Heineke remarks in conclusion that he does not know of a single authentic instance on record of constriction of the renal vessels from the action of a heart tonic. His extensive experience, on the other hand, with cases of heart disease has convinced him that too often digitalis is given in inadequate doses and not kept up long enough and, above all, that there is too much dread of the intravenous route. He cites Meyer's successful case in which a digitalis preparation was given daily for a year.

Heart Block.—Eckstein has continued his research on the frog heart and in the clinic, and here states that the results have confirmed that the width of the impulse-conducting tract between the auricle and the ventricle does not modify the transmission of the impulse. The so-called partial heart block is not the result of any narrowing of the tract, but is due to functional modifications of the remaining elements. The power of the impulse is dependent on the number of times in which the elements of the tract can repeat a given process in a given unit of time, that is, the length of the refractory phase. This may differ in different parts of the heart and in the same part at different times. When two parts with a different length of refractory phase meet, irregularity of rhythm is inevitable. Hence allorhythmia is by no means always traceable to the impulse-conducting system, and its cause may be sought elsewhere in the heart. The cause may not be anatomic, as every kind of irregularity can be

duced by purely functional disturbances. The injurious influence causing the functional disturbance may reach the heart through the blood, or through the nerves, or may originate in the heart itself. The neurogenous can be distinguished by their modification under atropin. Over two pages of bibliography on disturbance in atrioventricular coordination are appended.

Aleukemic Myelosis.—Keuper reports three cases of what he calls aleukemic myelosis encountered in the course of four years. In one the condition was chronic, and the previously healthy man of 72 improved under roentgen treatment, the spleen became reduced in size and the patient has felt subjectively fairly well during the nearly three years he has been under observation. The sudden onset in the two other cases suggested an acute infection. The disease developed in the young woman immediately after marriage, beginning with intense headaches. The man of 32 had had some months before a period of lassitude, which suggested that the acute phase was the flaring up of a chronic disease. Both these cases terminated fatally in less than two months. The diagnosis long wavered between aleukemic myelocytosis and sepsis, the clinical picture resembling the latter until puncture of the spleen or bone marrow and examination of an excised lymph gland cleared up the case. Necropsy showed myeloid cells in the spleen and kidneys and leukemic infiltration in the spleen and kidneys in the woman.

Origin of Hemorrhagic Diatheses.—Klinger recalls experiments in which the blood platelets were removed from blood and the blood was then defibrinated and reinjected, but no hemorrhagic tendency was noted thereafter. He also recalls that the platelets normally do not stick together but only acquire this property as they lose their vitality. For these and other reasons he thinks that although hemorrhagic diatheses are usually accompanied by a reduction in the numbers of blood platelets, yet there may be no causal relation between these facts. He presents evidence to sustain the assumption of chemical factors as responsible for the hemorrhagic diatheses. The spaces between the cells forming the capillaries become more permeable under the influence of chemical injury (probably mostly hydrolytic) of the cells bordering these spaces (albumin or lipid membranes).

Deutsche medizinische Wochenschrift, Berlin

Dec. 18, 1919, 45, No. 51

- Indications with Threatened Dystocia. R. T. von Jaschke.—p. 1401.
*Amount of Blood Expelled at Each Heart Beat. J. Plesch.—p. 1404.
*Lefthandedness. H. Griesbach.—p. 1408.
*Diphtheria of Umbilicus in the Newborn. M. Henkel.—p. 1411.
*Morphin Poisoning and Apparent Death. G. Joachimoglu.—p. 1413.
Friedmann Treatment of Surgical Tuberculosis. Elsner.—p. 1415.
Cont'n.
"Hygiene and Social Hygiene." Reply. W. Hanauer.—p. 1418.
Treatment of Lupus Erythematosus. Axmann.—p. 1419.
Hospital Diet Kitchens. Lenné.—p. 1419.
History of Medicine in the Medical Curriculum. W. Haberling.—p. 1420.

Determination of the Blood-Flow at Each Heart Beat.—Plesch describes his further development of the method of determining the volume of blood discharged during the phases of the human heart cycle by the amount of oxygen given off from the arterial blood. He claims to have perfected the method so that it can be applied to any person, under the most diverse physiologic conditions, during rest and work, and also under pathologic conditions. It can also be used for the testing of pharmacologic effects. The amount of oxygen consumed by the body must first be established, which is easily done by means of a short test of respiratory metabolism. The amount of oxygen held in the blood is then determined, which, Plesch states, can be done by means of a special type of hemoglobinometer just as accurately and with as little trouble and loss of time as a clinical determination of the hemoglobin content of the blood. Then the oxygen content of the blood in the right heart must be ascertained. Analysis of the peripheral venous blood will not suffice for this. For the determination of the oxygen content of the blood of the right heart Plesch has introduced what he calls the "Sackversuch" or rubber bag test. The subject to be examined is required to breathe

into and out of a rubber bag apparatus until, in accordance with the Henry-Dalton or the Boyle-Mariotte law, a tension equilibrium is established between the blood and the gas mixture in the bag. Based on an analysis of the air in the bag, a direct estimate of the oxygen content of the blood that flows from the heart through the lungs can be made. A portion of blood is saturated with alveolar air and another portion with the air contained in the bag. The difference in the oxygen content of the two samples of blood shows then the amount of oxygen per 100 c.c. given off or received by the lungs. He describes and compares with his method those devised by others for similar purposes.

Lefthandedness.—Griesbach states that owing to the fact that in lefthanded persons the speech center is located in the right hemisphere of the brain, instead of in the left as in righthanded persons, the custom of compelling them to write with the right hand, which work is for the most part associated with the speech center, causes them to struggle for years in order to transfer the speech center from the right hemisphere to the left. Lefthanded persons are not originally mentally inferior, as Stier maintains, but it is possible for them to become so through the above described attempt at a readjustment of the speech center. The result of their efforts may be that the speech center is not predominantly located on either side, which Griesbach regards as an unfortunate state of affairs, as it interferes with hemisphere differentiation during the process of its development throughout childhood and adolescence. In adults, a change from the right hand to the left, which sometimes becomes necessary through accident, is not marked by any central changes, as their unilateral hemisphere differentiation has become definitely fixed.

Diphtheria of the Umbilicus in the New-Born.—Henkel reports four cases of diphtheria of the umbilicus in the new-born, and states that this localization of the infection is not particularly rare. His experience with the condition has not been extensive but so far he has not found it a severe infection. The important thing is to recognize early the presence of diphtheria bacilli in order that mixed infection may not set in. If not recognized until late, more or less deep tissue injuries are sure to result, which renders the management of the case more difficult. When the diphtherial character of the infection is once recognized, the treatment must be entirely specific. Diphtheria antitoxin was administered in doses of from 500 to 600 units and was applied locally. In one case 4,000 units were administered in all. Powders and ointments are avoided. The infant should never be immersed in a bath until the cord has dropped off and the stump is dry. With this endemic appearance of diphtheria of the umbilicus, the cord and the umbilicus were treated daily with 96 per cent. alcohol. Other disinfectants are contraindicated as the skin of the new-born is so sensitive.

Morphin Poisoning and Apparent Death.—Joachimoglu, in discussing the case of apparent death in Berlin, an account of which appeared recently in *THE JOURNAL*, p. 837, expresses surprise that although the person when found in the park showed signs of life that were readily noted by laymen, the physician who examined the apparently lifeless body when brought to the hospital should have pronounced death as having ensued from morphin poisoning and should have neglected to make any attempts at resuscitation. In acute poisoning from morphin or other narcotics of the fatty series, Joachimoglu states, absence of respiratory movements, pulse and reflexes are by no means sufficient evidence of death, as was shown long ago by the animal experiments of Boehm, who chloroformed cats and waited until the manometer showed no pulse vibrations and until no heart sounds could be noted with the stethoscope, and then, at various intervals, instituted attempts at resuscitation. Cats were thus resuscitated when the heart had ceased to beat perceptibly for 7, 8, 9 and 19 minutes, and when respiratory movements had completely ceased for 10, 13, 14 and 24 minutes, respectively. As is well known, many persons apparently dead from chloroform poisoning have been resuscitated. The condition of the organism after acute poisoning may be compared to

that following drowning. In view of these facts, Joachimoglu considers it the imperative duty of the attending physician in all such cases to institute artificial breathing and to employ all other therapeutic measures (e. g., atropin in large doses) in an attempt to bring about resuscitation, and that only after long and energetic trials to restore heart and lung activity should the subject be pronounced dead.

Jan. 1, 1920, 46, No. 1

- *Artificial Sterilization of Women. G. Winter.—p. 1.
- Pressure in the Venous System. W. Arnoldi.—p. 4.
- Heliotherapy in Surgical Tuberculosis. F. Brüning.—p. 5.
- Experimental Immunization Against Tuberculosis by Means of Tubercle Bacilli from Cold-Blooded Animals. F. Klopstock.—p. 6.
- Behavior of Cerebrospinal Fluid in Experimental Anemia and Vital Staining. W. Baumann.—p. 10.
- Recurrent Localized Salvarsan Exanthems. W. Schönfeld.—p. 11.
- Sensitization in Roentgenotherapy. R. Leuk.—p. 12.
- Precipitation Reactions in Syphilis. E. Meinicke.—p. 13.
- Roentgen Picture of Pericarditis with Effusion. Paetsch.—p. 16.
- Treatment of Spastic Talipes Equinus. K. Rohde.—p. 16.
- Gastro-Enterostomy for Pyloric Ulcer and Stenosis. F. Ehrlich.—p. 17.

Artificial Sterilization of Women.—Winter discusses what he regards as the indications for artificial sterilization. There seems to be an increasing misuse of the operation, which should be checked. Too much attention has been paid to the technic of the operation, to the neglect of the indications therefor. The fundamental idea or justifying basis for sterilization is to ward off the aggravating influence that pregnancy has on the course of certain chronic diseases. It is justifiable only when the life or health of the patient is seriously menaced. In exophthalmic goiter, although in from 6 to 7 per cent. of the cases one can expect serious complications, sterilization is not justifiable because strumectomy during pregnancy will ward off the danger just as well. In diabetes, relapses often result during pregnancy, and clinical experience would indicate that there are some cases of intermittent diabetes that do not subside after pregnancy; in such cases sterilization is justifiable. While tetany is sometimes seriously aggravated by pregnancy and fatalities are recorded, this is so rare that it can not be taken as an indication for sterilization. Dementia praecox is the only psychiatric disease that may necessitate sterilization. In chorea gravidarum, sterilization is strongly indicated if in earlier pregnancies grave and life-endangering symptoms were manifest. In neuritis of the optic nerve sterilization should be performed if after pregnancy the disease does not respond to treatment and atrophic conditions begin to develop; otherwise later pregnancies may lead to permanent blindness. Winter opposes sterilization in hysteria and neurasthenia, which many physicians recommend and carry out on the ground that the patients have been worn out by numerous pregnancies and the ever growing cares of the household. He thinks the husband should bring the desired relief through continence exercised for a time or means to prevent conception. In tuberculosis and in heart disease, sterilization is indicated in the most severe cases, as Winter explains in detail. In some severe complications of chronic nephritis sterilization is recommended. Owing to the fact that the mortality rate from cesarean section has been reduced to 1.5 per cent. (transperitoneal) and to 2.4 per cent. (extraperitoneal), a narrow pelvis is not as strong an indication for sterilization as formerly, but may be such still. Sterilization naturally presupposes consultation between two or more physicians and the consent of both spouses.

Deutsche Zeitschrift für Chirurgie, Leipzig

August, 1919, 151, No. 1-2

- *Plastic Operations on the Skull. R. Gebhardt.—p. 1.
- *Tuberculin Tests in Surgical Tuberculosis. E. Duthweiler.—p. 21.
- *Ileus During Wartime. H. Reusch.—p. 36.
- Diaphragmatic Hernia with Rupture of Stomach. J. Dubs.—p. 60.
- Paralytic Ileus from Fermentation. H. Walther.—p. 77.
- Operative Correction of Obturator Luxation. A. Szenes.—p. 86.
- Isolated Fracture of Coronoid Process of Ulna. F. Bähr.—p. 100.
- Isolated Injury of Posterior Crucial Ligament. M. Budde.—p. 110.
- *Rupture of Mesentery. J. Dubs.—p. 120.
- *Chyle Cysts. V. Hoffmann.—p. 137.

Plastic Operations on the Skull.—Eight cases are described and the advantages of utilizing bone tissue from the vicinity to close the gap are emphasized.

Tuberculin Tests in Surgical Tuberculosis in Children.—Duthweiler analyzes her experience with 8 cases of tuberculous spondylitis, 3 suspects, 7 of a tuberculous process in the knee, 4 in the elbow, 3 of the hip joint and one suspect, and 6 others with tuberculous processes elsewhere. In the 28 cases in which the diagnosis was beyond question, only 6 responded with a positive reaction to the subcutaneous injection of tuberculin, and the focal reaction proved unreliable both when positive and when negative. None of the children seemed to have been injured by the skin Pirquet test done with small doses, and the response to this was constantly positive in the above 28 cases.

Ileus During Wartime.—Reusch reviews the experiences with ileus during the last five years at Würzburg and comments on its increasing prevalence of late years, the number of operative cases having increased from five in 1912 to twenty-nine in 1918.

Rupture of the Mesentery.—Dubs reports two further cases of isolated rupture of the mesentery from abdominal contusion, with fatal outcome in one case. The other patient recovered after resection of the stretch of mesentery involved and the 15 or 20 cm. segment of attached intestine. The other patient had recovered after suture of the tear in the mesentery, and seemed to be well for nine months except for occasional hematuria. Then he developed ileus, and necropsy showed circular stenosis of the stretch of intestine corresponding to the injured portion of the mesentery, and the latter had shriveled to a certain extent. Necropsy also revealed cicatricial changes in one kidney suggesting that the kidney had been ruptured at the same time.

Chyle Cysts.—Hoffmann reports a case of a large chyle cyst, and has found four others in his hospital records. He explains them as cystic lymphangiomas—tumors connected with malformations.

Zentralblatt für Chirurgie, Leipzig

March 13, 1920, 47, No. 11

- *Contracture of Great Toe. Kleinschmidt.—p. 243.
- *Regional Anesthesia for Goiter Operations. D. Kulenkampff.—p. 246.
- *Wire Versus Nail Extension. K. Ansinn.—p. 249.

Operative Treatment of Contracture of the Flexor Muscle of Great Toe.—Kleinschmidt describes the causes of contractures of this nature. A frequent cause during the war was immobilization of the foot for too long a time following gunshot injuries. In peace times the contracture is not so common. The clinical picture of the condition as seen in ten different cases was as follows: The ankle joint and the other joints of the foot, if they were not directly implicated in the fracture, showed only a moderate degree of stiffness, but the first metatarsophalangeal joint was fixed in a more or less flexed position. Any attempt at dorsal flexion met with stubborn resistance. The Payr operation for this condition consists in removing the sesamoid bones from the joint capsule and correcting adhesions. In five cases their removal relieved the condition and gave rise to no functional disturbances.

Local Anesthesia and the Technic of Goiter Operations.—Kulenkampff endorses Härtel's simplified technic for regional anesthesia in operations on the neck. He and his associates have used it for more than a year in over 100 cases and have yet to note any bad results. Kulenkampff recently has still further simplified it and used this technic in about fifty of the cases. The mastoid process-clavicle line is determined and following this line (the patient's head being turned away), with the palpating finger tips along the posterior border of the sternomastoid, and pressing fairly hard, the transverse processes of the cervical spine are located. A wheal is produced on both sides of the cervical spine at the junction of the upper and middle thirds. A needle 3.5 cm. long is inserted at one of these points and pushed directly downward into the tissues, thus coming in contact at a depth of from 1 to 2 cm. with the transverse process of the third or fourth cervical vertebra. The operator then cautiously goes on past the anterior border of the transverse process and for 0.5 or 1 cm. deeper. If no blood flows out of the needle, the syringe is attached and several drops

of the anesthetic solution are injected; the syringe is then removed and he waits to see whether a clear fluid will flow out of the needle. Often three or four trial injections are necessary before a clear fluid is returned. After securing a positive result, 50 c.c. of a 0.5 per cent. solution are injected without changing the position of the needle. The same procedure is followed on the other side. For the last two syringefuls (of 10 c.c. each) it is well to withdraw the needle partially and inject its contents just beneath the skin. Even large substernal goiters associated with severe dyspnea have not caused the slightest trouble when the above described technic has been employed. The regional anesthesia is as complete as with Härtel's multiple injections.

Wire Versus Nail Extension.—Ansinn prefers wire extension to nail extension for the alleged reason that it performs the same service and is associated with less danger from infection and formation of fistulas.

Zentralblatt für Gynäkologie, Leipzig

March 13, 1920, 44, No. 11

Critical Observations on the Simplified "Twilight Sleep." C. J. Gauss.—p. 257.

Tardy Results of Perforation of Uterus. K. Frankenstein.—p. 270.

Zentralblatt für innere Medizin, Leipzig

March 13, 1920, 41, No. 11

*Urobilinuria and Urobilinemia. H. Strauss and L. Hahn.—p. 193.

Urobilinuria and Urobilinemia.—Strauss and Hahn state that as urobilin is a normal ingredient of urine, it is also present in every blood serum, and its presence can be shown provided a sufficiently large amount of blood serum is taken for examination. Since urobilinuria denotes a physiologic condition, this term should not be used to designate an excess of urobilin in the urine; hyperurobilinuria is the proper term for this. The amount of urobilin in the blood varies greatly. It could not be found in normal persons in less than 48 c.c. of serum, so we might speak of a hyperurobilinemia when urobilin is found in a certain minimal quantity of blood serum.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 21, 1920, 1, No. 8

*Changes in Pulse and Respiration During Reaction to Mental Processes. J. Bramson.—p. 614. Begun in No. 7, p. 547.

Sign and Treatment of Influenza. H. B. L. Vos.—p. 634.

Influence of Mental Processes on Pulse and Respiration.—Bramson describes an electric contrivance with which the record of the respiration can be compared with the plethysmograph record during and after some slight mental process. An unmistakable physiologic response in both directions is evident. Such tests would be useful in psychoanalysis if the words on the cards were chosen with care. Bramson's findings confirm Benussi's study of the respiratory symptoms accompanying a lie.

Feb. 28, 1920, 1, No. 9

*Early Rupture of the Membranes. I. A. Wijsenbeek.—p. 695.

*Rabies. W. Hamburger.—p. 717.

*Protein Therapy. E. H. B. van Lier.—p. 725.

Early Artificial Rupture of the Membranes.—Wijsenbeek compares the experiences at the maternity in Utrecht, where the bag of waters is spared as long as possible, with those at the maternity of Leyden where it is the routine practice to rupture the membranes early. In both series there were a number of cases in which delivery was abnormally prolonged; the rupture in itself does not seem to influence this. But the disadvantages in such cases of the membranes being ruptured is evident.

Prophylactic Treatment of Rabies.—Hamburger comments on the great increase in the number of cases of rabies in France and Belgium during and since the war. In the Netherlands, the burgemeester supplies money for traveling and other expenses so that prophylactic treatment for rabies is within the reach of every one free of charge. But the country has long been free from rabies until recently when a number of patients from the eastern provinces applied for treatment. In comparison with smallpox vaccination, the

antirabies treatment has the drawback that it is applied, not to the healthy, but during the incubation of the disease.

Protein Therapy.—Van Lier analyzes the extensive literature of the last few years for and against parenteral injections of milk. He relates that the *Deutsche medizinische Wochenschrift*, No. 20, 1918, had an article by Müller extolling the harmlessness of the injections as he had been making them for two years, and on another page an account by Lubliner of fatal anaphylaxis from this cause, the robust girl dying from anaphylactic shock a few minutes after an injection of milk, eight days after a previous series of injections had been borne without mishap. Oppenheim has also reported a severe anaphylactic reaction after injection of milk the seventh day. The injections should be made with all the precautions of serotherapy, and van Lier suggests that it might be better to use horse serum or other source of protein, adding a little deuterio-albumose at need, or some simple solution of albumin, instead of milk.

Acta Medica Scandinavica, Stockholm

Feb. 20, 1920, 52, No. 6

*Gastric Secretion in Young Children. A. T. B. Jacobsen.—p. 773.

*The Parathyroid Glands. H. Bergstrand.—p. 791. In German.

Gastric Secretion in Young Children.—Jacobsen tabulates the findings after the Ewald test meal in twenty-five children, between 1 and 5 years old, with apparently normal digestive apparatus, and in six children with acute and twenty-four with subacute or chronic gastro-intestinal disturbance. The stool findings are also tabulated. These experiences testify that in children of this age the secretion of hydrochloric acid and of pepsin is not so strong as in adults, even in health. The congo and other reactions are weaker. With gastro-intestinal disturbance, achylia or hypocholia was found in about 75 per cent., but conditions returned to approximate normal as the gastro-intestinal disorders were cured. The stomach seemed to share in the presumed catarrhal condition in the bowels. He has been very successful in treatment with a milk and gruel diet after a few days of raw oatmeal soup following twelve hours of restriction to water during which the child was given 5 gm. of castor oil. Then one-fourth liter milk; a day or two later, one-quarter liter milk gruel; then one-half liter milk, one-quarter liter milk gruel and one-half liter water gruel, after which were allowed rusks, porridge, sweet sago soup, minced fish with melted butter and finally mashed potato, minced meat and tea. He ascribes the rapid benefit to the milk in these acute and chronic cases. Functional tests of the stomach proved to be superfluous, as the course was the same in the cases with and without anomalies in the gastric secretion. The article is in English.

Normal Anatomy of the Parathyroid Glands.—Bergstrand gives six pages of bibliography on the parathyroids and thirteen photomicrographs of the findings in parathyroids from adults, and discusses the minute structure and functions of the different elements. His conclusions differ in certain respects from those generally adopted.

Finska Läkaresällskapets Handlingar, Helsingfors

January-February, 1920, 62, No. 1-2

*Roentgenotherapy in Gynecology. O. A. Boije.—p. 1.

*Transient Hyperopia in Diabetes. E. Enroth.—p. 28.

Roentgen-Ray Treatment of Uterine Myomas and Hemorrhagic Tendency.—Boije reports that the hemorrhages ceased entirely in 83.7 per cent. of his 49 cases of uterine myomas, and the tumors shriveled in 95.5 per cent. Only one case proved refractory to this treatment and no untoward by-effects were observed in any instance, or in 14 cases of uterine hemorrhages. In 5 of the latter complete amenorrhea was realized, and in the others the hemorrhages were restored to normal proportions. He warns, however, that polypous, submucosa and degenerated or gangrenous myomas are not adapted for radiotherapy. Operative measures also act quicker and more certainly on pain, but it may be wise to reduce the hemorrhagic tendency with radiotherapy and wait for the anemia to improve before attempting the operation.

He emphasizes that if myomas require intervention before 40 or 42, conservative enucleation should be the rule, but radiotherapy very cautiously applied might be advisable for younger women with ordinary menorrhagia and metrorrhagia. Between 40 and 45 it is better not to strive to arrest menstruation entirely. "The main point," he reiterates, "in radiotherapy is the selection of the cases for it. With the proper indications, the outcome is as favorable as with operative measures and with less risk."

Transient Hyperopia in Diabetes.—Enroth describes two cases of diabetes mellitus in a coachman of 48 and a farmer of 34 in which hyperopia up to 3 D developed suddenly in one and more gradually in the latter. It disappeared gradually in the first case by the third month; in the other the manifest hyperopia did not last more than five weeks. Changes in the lens seem to be responsible for the transient hyperopia, as he explains. Experimental glycosuria with examination of the sugar content and the refraction index in the fluids in the eyeball might throw further light on the question. He has encountered three cases of transient hyperopia in diabetes in the course of little more than two years, and has found twenty-seven cases on record in the literature.

Hospitaltidende, Copenhagen

Jan. 28, 1920, 63, No. 4

*Regulation of Neutrality in Epilepsy. A. Bisgaard and J. Nørvig.—p. 49.

Causation and Treatment of Epilepsy.—Bisgaard and Nørvig have been conducting research on sixteen epileptics in an institution, with comparative research on healthy persons—a total of several thousand investigations of blood and urine. They found a most remarkable increase in the ammonia content of the blood about three hours before an epileptic seizure or an epileptic psychic equivalent. Their charts show, as they say, "actually colossal" fluctuations in the ammonia content at these times. They were able to detect them by control of the ammonia content of the urine; when this began to go up, they examined the blood, and thus happened on the pre-seizure rise. They applied the van Slyke, Cullen, Folin, Kjeldahl and Hasselbach technics in their study of blood and urine, hydrogen ions, etc. Their discovery of the increase in the ammonia of the blood in the psychic-epileptic status is, they say, the first well defined endogenous toxic substance yet demonstrated in connection with psychoses. The epileptic seizure seems to be a kind of anaphylactic shock or poisoning with albumin waste products. One man weighing 65 kg. had an amount of ammonia in the blood, just before a seizure, corresponding to 32 c.c. of normal solution of ammonia, that is, of a 1.7 per cent. solution. Besides ammonia, other toxic elements may be at work, but they are not able to bring on the seizure until the ammonia reaches a certain concentration in the blood.

Bisgaard and Nørvig conclude their extensive report with arguments to sustain the analogy between tetany and epilepsy, and their possible common etiology from deficiency in the parathyroid glands. The anamnesis of epileptics needs revision and the treatment, instead of being merely with sedatives to reduce reflex action, may advantageously attack the endocrine disturbance presumably responsible. The attempts published to date in this line have not been encouraging except with autotransplantation. Possibly the differences between donor and recipient may have interfered with the success of homotransplantation.

Feb. 4, 1920, 63, No. 5

*The Epidemic of Influenza in Iceland. S. Matthiasson.—p. 65.

Influenza in Iceland.—This report of the epidemic in Iceland states that the strict quarantine enforced restricted the disease to the southern and western parts of the island, and the rest of the population escaped entirely.

Hygiea, Stockholm

March 15, 1920, 82, No. 3

*Total Gastrectomy. H. Sundberg.—p. 145.

*Origin of Gastric Ulcer. R. Dahl.—p. 159.

Gastrectomy.—In the first of Sundberg's two cases there had been symptoms suggesting cancer of the stomach for several months in the woman of 64, but the glands around were not involved, and the stomach was freely movable. The woman is living in good health to date fifteen months after he resected the whole of the stomach except a small part of the cardia which was sutured to a loop of jejunum brought up through a wide opening made for it in the mesocolon. The loop was carried in a wide curve past the duodenum to which it was fastened. In the second case a still more complete operation was done; the jejunum loop had to be sutured to the esophagus. The condition was good after the operation but the woman of 65 succumbed shortly after to a recurring cerebral hemorrhage.

Origin of Gastric Ulcer.—Dahl presents evidence to show that aberrant cells of intestinal mucosa in the stomach and of stomach mucosa in the duodenum may be the points of lesser resistance which lead to the production of ulcers.

Ugeskrift for Læger, Copenhagen

March 11, 1920, 82, No. 11

*Polycythemia with Juxtapyloric Ulcer. H. I. Bing.—p. 337.

*Acute Orbital Disease Originating in Nasal Sinus. S. H. Mygind.—p. 342. Conc'n.

Immunity after Influenza. V. F. Møller.—p. 356.

*Radium Treatment of Uterine Cancer at Stockholm. I. Hansen.—p. 357.

Polycythemia with Juxtapyloric Ulcer.—Bing has heard of four cases in Denmark in which polycythemia accompanied duodenal ulcer, but he has been able to find in the literature only one article referring to this subject, Friedmann's report (American) in 1914 of twenty-five cases of a hitherto undescribed form of polycythemia and its possible relation to duodenal ulcer. Bing remarks, to begin with, that Friedmann's assumption that the normal limit for the erythrocyte count is 5 or 5.5 millions, is incorrect; the normal limit is 6 for women and 6.5 for men. He says further that Friedmann's account shows that the ulcers were juxtapyloric rather than strictly duodenal. Friedmann suggests as an explanation that an excess of epinephrin in the blood may explain both the ulcer and the polycythemia; citing Falta's statements that polycythemia developed in animals injected with epinephrin. Bing does not accept this explanation, and thinks abnormal losses of salt may possibly be the decisive factor. He reports a case of juxtapyloric ulcer in a man of 27 in which he found 7 millions erythrocytes in blood from the lobe of the ear and 8.2 millions in blood from the abdominal wall. Examination a week later, however, showed only 4.7 millions. In a woman with extreme retention in the fasting stomach, requiring the use of the stomach tube, he noted that the aspirated fluid contained large amounts of salt, from 2 to 9 gm. in the 300 c.c. of stomach content extracted each day. Salt might also be lost in vomited fluids. The output of urine ranged from 750 to 1,450 c.c.; the specific gravity was sometimes down to 1.003. The food contained usually little salt. The ash in the blood was 8.9 and the erythrocyte figure 7.5 or 7.1 millions; in blood from the skin of the abdomen it was sometimes 8.4 millions. The chlorid content of the urine ranged from 0.31 to 4.09, and of the blood from 3.5 to 4.1, with hemoglobin 128. These and other findings suggest, Bing states, that the excessive losses of salt may have been responsible for a relative polycythemia, restoring the balance in the blood. Perhaps the large amounts of soda which Friedmann's patients had been taking may have modified the chlorid content of the plasma.

Acute Orbital Disease Originating in the Nasal Sinuses.—Mygind reviews in detail the extensive experiences in this line at the Copenhagen eye and ear clinics, and urges the necessity for prompt and ample evacuation of the foci in the orbit and sinus, discussing the indications.

Radium Treatment of Uterine Cancer at Stockholm.—Hansen reports sixty-six patients with uterine cancer treated with radium over five years ago, mostly inoperable cases. About 6 per cent. died from intercurrent disease or have been lost to further investigation, but 27.3 per cent. are known to be living after the five year interval.

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THE FUTURE OF OTOLARYNGOLOGY*

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CHICAGO

From the title of my address it might be assumed that I have been able by some magic influence to cast my eyes far ahead; that I have the great secret here transcribed, and that I am about to admit you into my confidence. If you will follow me, however, into the future, you will note that I am only judging it by my personal experience and observations, since I entered the practice of medicine exactly twenty-five years ago.

I have found it desirable to make two subdivisions of my subject: (1) development of an otolaryngologist, and (2) cooperation in otolaryngology.

DEVELOPMENT OF THE OTOLARYNGOLOGIST

A review of the history of the development of otolaryngology as a specialty would add considerable to the value of my presentation; but, for lack of time and space, it must be omitted. I wish, however, to say that we are much indebted to the pioneers, who have made it possible for those who followed to develop the branch into a real specialty. Yet, however great has been this development in the last twenty-five years, which many of us should feel it a great privilege to have witnessed, I believe we are at a threshold of even a greater step forward, namely, its recognition as a borderline specialty.

To meet the great demand for specialists, a number of graduate schools have made it possible for men to become operating or treating otolaryngologists, after a very short and inadequate course, and certainly without basic instruction.

Nothing has done more harm to the medical profession and to otolaryngology in America, in particular, than this result of imperfect pedagogics. The by-word "six weeks specialists" has been coined to apply to such practitioners, and the country is riddled with men with such training, doing not only otolaryngologic work, but often ophthalmologic work as well.

Fortunately, there were a fair number of men trained abroad, especially in London, Paris, Vienna and Berlin, who organized societies that set up high standards; and through their influence, many of these prematurely created otolaryngologists sought and secured adequate training. Again, the same societies are at this moment intensely interested in the problems of future development of the American otolaryngologist, and a permanent committee is at work. Having

the honor of being one of the members of this committee, and being personally very much interested in the subject, I desire to present a tentative plan for your consideration—a plan which is feasible and can be instituted immediately.

1. There should be organized a board of directors, selected from each of the five national otolaryngologic societies, namely, the American Otological Society; American Laryngological Association; American Laryngological, Rhinological and Otological Society; American Academy of Ophthalmology and Otolaryngology, and the Section on Laryngology, Otology and Rhinology of the American Medical Association.

Each society is to send five members, irrespective of having membership in one or more of the constituent societies.

2. This board of directors, having been selected somewhat in reference to geographic location, is to be divided into five sections: (a) East; (b) Middle West; (c) North; (d) South, and (e) Extreme West.

3. The division into the five sections is made to facilitate the work of the board throughout the year, as the board as a whole meets only once a year, preferably at the annual session of the American Medical Association.

4. The board of directors should have absolute control of the development of the otolaryngologist, acting as advisory both to the institutions of learning or training, and to the student. It should, furthermore, determine the fitness of the applicant for training as well as practice.

5. A student having satisfied the board of directors of his fitness to become an otolaryngologist, and having shown that in his undergraduate studies, as well as during his internship, he has given especial attention to this branch, as, for instance, seminar work or theses, etc., he is referred to a clinician, who will train him for one year. This corresponds to the second year of internship in a hospital.

It is assumed that the clinician has enough work for one or more such men, in order to give them the training and prepare them for the subsequent advanced study and development.

6. This advanced study or training should consist in a systematically carried out curriculum as prescribed by the board of directors.

A schematic schedule is herewith suggested:

1. Anatomy, normal and pathologic, of the nose and nasal accessory sinuses. From 10 to 12 (sixty hours) one month.

Use of wet, dry and microscopic specimens, including illustrations. The actual work for one such month's course may be thus exemplified:

A. Mornings: 1. Embryology and comparative anatomy of the nose and paranasal sinuses. Four hours.

2. Anatomy of the nose and paranasal sinuses from birth to adult life. Four hours.

* Chairman's address, read before the Section on Laryngology, Otology and Rhinology, at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

3. Anatomy of nose and paranasal sinuses in adult life. Eight hours.
4. Gross pathologic anatomy of nasal septum. Two hours.
5. Gross pathologic anatomy of middle and inferior turbinated body. Four hours.
6. Gross pathologic anatomy of the paranasal sinuses. Four hours.
7. Histologic pathologic anatomy of the septum, turbinates and paranasal sinuses.

2. Anatomy, normal and pathologic, of the pharynx, larynx, trachea, bronchi and esophagus. Wet and dry specimens, including microscopic slides and illustrations. From 2 to 4 (sixty hours) one month.

B. Afternoons: 8. Embryology and comparative anatomy of the pharynx, larynx, trachea, bronchi and esophagus. Four hours.

9. Anatomy of pharynx, larynx, trachea, bronchi and esophagus in children. Four hours.

10. Anatomy of pharynx, larynx, trachea, bronchi and esophagus in adults. Four hours.

11. Gross pathologic anatomy of pharynx, larynx, trachea, bronchi and esophagus. Four hours.

12. Histologic pathologic anatomy of pharynx, larynx, trachea, bronchi and esophagus. Four hours.

3. Anatomy, normal and pathologic, of the ear, including the mastoid process. From 10 to 12 (sixty hours) one month.

Use of wet, dry and microscopic specimens and illustrations.

4. Anatomy, normal and pathologic, of the brain ganglions and cranial nerves.

Use of preparations, gross and microscopic; also illustrations. From 2 to 4 (sixty hours) one month.

5. Diagnosis and surgical treatment, on the cadaver, of the nose and the nasal accessory sinuses. From 9 to 12 (eighty hours) one month.

6. Diagnosis and surgical treatment, on the cadaver, of ear, mastoid, brain and nerves. From 2 to 5 (eighty hours) one month.

7. Attendance in ambulatory clinic of ear, nose and throat, observation only. From 9 to 12 (eighty hours) one month.

8. Reports on work in the observation clinic in writing and illustrating with reading and reference to literature. From 2 to 5 (eighty hours) one month.

9. Ambulatory clinic, ear, nose and throat in a clinic service. From 9 to 12 (eighty hours) one month.

10. Report in writing and with illustrations, reading and reference to literature on work in the clinic. From 2 to 4 (sixty hours) one month.

11. Observation on surgical clinic in ear, nose and throat. From 9 to 12 (eighty hours) one month.

12. Report in writing with illustrations, reading and reference to literature of the work observed in the clinic. From 3 to 5 (sixty hours) one month.

13. Observation in major surgical clinic, especially head and neck surgery. From 9 to 12 (eighty hours) one month.

14. Report in writing and illustrations, reading and reference to the literature on work of that clinic. From 2 to 5 (eighty hours) one month.

15. Surgical clinic in ear, nose and throat in active surgical service. From 9 to 12 (eighty hours) one month.

16. Reports in writing with illustrations, reading and reference to literature, on the work performed at the clinic. From 2 to 5 (eighty hours) one month.

The important questions now to be answered are: Where is the student to get this instruction? How are they to be grouped? What financial arrangements will be necessary?

I stated at the outset that the plan was feasible and could be made use of immediately. Let me propose a trite example:

A student applies to the board of directors, let us say, from the Western Section (San Francisco). He will be informed by this board what credentials he must have. The board is in possession of the names of a number of clinicians, who have signified their willingness to take an applicant for a year. If the student has a preference and the preferred clinician is available, appointment is made accordingly. After one year of service with the clinician, he receives a certificate from the clinician signifying the type of

work performed, and he again applies to the board for advanced work. He will be informed that he may choose Harvard University, Pennsylvania or any university giving the course. At completion of each particular course he will receive from the instructor a certificate of attendance with grade for the work done. The actual expense of such a training cannot be stated, because it will vary with the necessary traveling, etc.; but so far as the first year of the training with the clinician is concerned, the student should receive the same compensation as an intern at the hospital, namely, board and lodging. The cost of the advanced work should be that which each university will demand. It has been customary for the American universities to make the minimum charge for any instruction.

Having completed the prescribed number of courses satisfactorily, he will return to the annual meeting of the board of directors and receive his properly accredited diploma, and he will be recognized as a thoroughly trained otolaryngologist.

While the courses outlined are perhaps not actually available at this time, and they are not absolutely required for a year, I am sure that arrangements can soon be made for them, and the results will be all we could desire.

The most difficult courses to secure in this country are the practical surgical training on the living; and if I may be permitted, I would suggest that until the clinical material is sufficiently organized for this work, the student may be required to go abroad for this portion of the work. I was authorized to state, by the clinicians of the University of Prague-Czechoslovakia, that any one who has had the preliminary training and is recommended by proper medical authority will be given ample opportunity to work on the living at their clinic. It is also quite likely that other European clinics will be soon ready to receive American physicians.

Being in possession of a proper general introduction from the members of the board of directors, the student now makes a tour of observation for four months. A list of large otolaryngologic clinics should be sent to each student. The length of time he shall spend at each place is left somewhat to the judgment of the student. At the conclusion of each visit he is to make a brief and concise report of what he has seen and heard.

It has been considered that perhaps the outline of what I term advanced training should precede the one year of practical work with the clinician; but after I had discussed the matter with several pedagogues in otolaryngology, it was thought best to do as advised above. The reason for this is that the student, having observed for one year the difficulties actually encountered, will be more eager to learn details. Also the question of appreciating subsequent teachers, when he makes the observation tour, comes into play.

Having completed his training and received his recognition as an otolaryngologist, he has yet a great deal before him toward development. In fact, it never stops and one is continually learning. He will have to decide whether he shall enter the practice independently or in association with one or more men in practice.

Speaking from personal experience, I shall advise everybody to become an associate. I have trained men and women ever since I have been in the practice of otolaryngology, and with few exceptions, these have found places as associates and have been, I believe, success-

ful. Furthermore, every otolaryngologist should join his local and national otolaryngologic society, take part in discussions, and try to do, as often as possible, some accredited work, and thus promote the advance of our specialty and develop into a real otolaryngologist. So far as the otolaryngologist visiting his colleges at home or abroad is concerned, I desire to state that the organization of an international society at the next international congress would be advisable. Membership in such a society would be accorded to any recognized otolaryngologist in his respective country, designated by a membership card. There need be no officers, dues or other expenses connected with such an organization. A member of the society, presenting such a membership card, should be entitled to all the possible professional courtesies, and given every opportunity to learn what his friend and colleague is doing. The idea of such a society would be, no need of special letters, etc., of introduction, nor any hesitancy on the part of the visitor to seek information. Besides, men would aspire to the recognition of an otolaryngologist, and the pretender would be denied rare privileges.

COOPERATION OF THE OTOLARYNGOLOGIST

With the establishment of the various specialists, there has developed such an epidemic of so-called group medicine or team work all over this country, that I have thought wise to call your attention to the possibility of this practice to cause more harm than good when thus applied. That group medicine is one of the greatest factors in benefiting the people and furthering science, there is no question; but the group must be competent. What I am objecting to is the pretension group of so-called specialists combining for commercial reasons and causing a lot of trouble by making false diagnosis, unnecessary and poor operations; therefore, my suggestion and outline of conditions or diseases in which otolaryngologists and the other specialists are simultaneously concerned.

We may divide society grossly into three great classes: (1) the wealthy; (2) the middle class, and (3) the poor. The relative percentage of these classes varies considerably, depending on the location, concentration and character of the district. The medical problems of these classes are by no means solved. However, the wealthy do not suffer, for their pecuniary resources command the necessary skill required. The poor are usually provided for in most communities through the great hospitals, which attract men of the highest medical attainment, who give their services free and without stint.

Those who belong to the middle class are by no means so fortunate. They cannot conscientiously accept the charity which is offered the poor, nor have they the means to secure the service which they desire and which the wealthy receive. They are hence often denied the medical attention in the varied and comprehensive manner required in the practice of modern medicine.

The great factor of this situation is the degree to which medicine has been specialized. While this specialization has been at times greatly overdone and often misapplied, the significant fact still remains that medicine as well as medical practice must be subdivided if any degree of expertness or efficiency is to be achieved.

In addition to otolaryngology, the recognized special branches in the practice of medicine are: (1) general

surgery; (2) orthopedic surgery; (3) internal medicine; (4) gynecology; (5) pediatrics; (6) neurology and psychiatry; (7) dermatology; (8) obstetrics; (9) ophthalmology; (10) genito-urinary diseases; (11) clinical laboratory, and (12) dentistry. Naturally, there is a great deal of overlapping in the work of these specialties, and many questions as to the best interests of the patient frequently arise. Furthermore, this condition of things is not always successful in getting the best values—to use a colloquial term—out of the physician's work. A study of these circumstances has convinced me that there is still much to be done before these enforced divisions of medicine can become sufficiently harmonized to be brought into a proper relation with one another.

Among the many relational questions that arise, one of the most difficult is to determine to which of the specialists the patient belongs, with respect to treatment. In other words, when shall a skin and venereal specialist treat a syphilitic nasal or throat case, and vice versa? My answer is, "Whoever knows most about the subject." Surely the skin and venereal specialist should be the man in charge, because no matter how well the local treatment is carried out, the patient will not recover unless his general specific medication is given in the most efficient manner. Yet if that patient has a laryngeal stenosis or a nasal sequestrum, he will require the service of a well-trained rhinologist and laryngologist to help him.

What, then, is the answer? Cooperation. I realize that there are other facts which must be considered, as the ability of a patient to pay the fees of two or more specialists instead of one, and the financial loss to the one who refers. Both these can be overcome. The former can be met by charging only one fee, except perhaps for the initial examination.

Financial loss cannot be considered when the patient's well-being is concerned; however, mutual reference of cases more than compensates for this. Furthermore, the practice of medicine in the future, in furtherance of the interest of humanity, will make the necessary adjustments in this regard to meet this situation.

1. *General Surgery*.—Considered regionally, this may be subdivided into: (a) oral and maxillofacial surgery; (b) brain surgery; (c) neck surgery; (d) chest surgery, and (e) abdominal surgery. In the first three divisions, otolaryngologists are called on to treat most of the borderline conditions. I have for over fifteen years published articles setting forth the reasons why that should be so, and I have considered that upper and lower jaw diseases, as osteitis, fractures and dislocations and tumors, are properly in the domain of the otolaryngologist. The various plastic reconstructions for congenital conditions, as cleft palate and hare-lip, or for those due to the loss of substances from disease and injury about the head and neck, are and have been well managed by the otolaryngologist.

Brain surgery is and has been a function of otolaryngologists for a great many years, by reason of the fact that three important surgical conditions follow as complications of suppurative ear and sinus diseases. I refer to septic sinus thrombosis, meningitis and brain abscess. The result of this is that the otolaryngologist performs many brain operations following his diagnosis, and he is correspondingly entitled to undertake the surgical treatment of tumors and other intracranial affections, such as gasserian ganglion

disease, meningocele, hydrocephalus, microcephalus and oxycephalus, as well as other ventricular conditions.

Several neck operations have for some time come under the dominion of the laryngologist, such as tracheotomy, laryngectomy and laryngostomy, as well as jugular vein and carotid artery ligations.

The thyroid gland and other neck tumors, as well as the glands of the neck, are still more or less under the management of the general surgeon; yet there is no special reason for this, as the otolaryngologist is fully prepared to undertake this work.

In chest surgery, the otolaryngologist is much concerned in lung abscesses, especially from the etiologic standpoint. Since tonsillectomies are being performed in increasing numbers, especially in adults under general anesthesia, there have been reported a fair number of lung abscesses. In this particular, however, the general surgeon is better prepared than the laryngologist.

Foreign bodies in the bronchi and lungs entering by way of the upper respiratory tract are responsible for a goodly number of lung abscesses, due usually to failure to diagnose or to remove them by way of bronchoscopy.

In the mediastinum we are concerned in esophageal conditions, such as diverticula, foreign bodies, strictures, abscesses and tumors, all of which are and have been best treated by way of the upper or pharyngeal route, by the laryngologist who is skilled in bronchoscopy and esophagoscopy.

The otolaryngologist comes in to relation with abdominal surgery in connection with the diagnosis and treatment of such conditions as gastric and duodenal ulcers and appendicitis, in which there may be a question of the source of a focal infection. It may even be impossible to determine whether one of these or a tonsil infection is the causal agent. In cases in which there is doubt, the tonsil operation which is attended with far less danger or discomfort should at least have the preference.

2. Orthopedic Surgery.—The orthopedic surgeons who recognize focal infection as responsible for many of the joint, muscle and tendon affections find it useful to have their cases analyzed with respect to the probable focus of the affection somewhere in the domain of the otologist and dentist. It is very discouraging, however, to note that orthopedists refer cases of bow-legs, clubfoot, ankylosis, etc., for operation on the tonsils.

3. Internal Medicine.—The cooperation of the otolaryngologist and internist is so important that I have found it necessary to have one associated constantly in the diagnosis of chronic septic or focal infection; it requires the most careful attention of the laryngologist and the internist to determine just where the most likely focus of the trouble lies. The disease classified as rheumatism, either arthritic, muscular or neural, is most frequently called into question, and there is no doubt that the proper attention to the infected tonsil, tooth, nasal accessory sinuses or middle ear is frequently followed by relief or cure.

It should not be forgotten that the internist, as well as the pediatrician or the orthopedist, sometimes errs in referring cases to the otolaryngologist for the removal of a septic focus. An instance of this sort was a case of alcoholic neuritis referred to me on the supposition that there was a focal basis in the tonsil. Kidney, heart and the vascular system are very fre-

quently involved from a focal infection, and the best management is through cooperation of internist and otolaryngologist.

Disturbances of the intestinal tracts are so frequently responsible for symptoms referable to the nose, throat and ear that I believe the otolaryngologist frequently treats these conditions by mistake, when they should be under the charge of an internist.

Under the same category may be placed the questions of diet, constipation and conditions resulting from disorders of the gastro-intestinal tract. These are so much in evidence in the daily work of the internist that they are his by superior knowledge and practice. On the other hand, unless the internist is on his guard, he will find himself endeavoring to relieve suppurative ear disease with labyrinthine fistula by attention to the stomach and intestine, the apparent location of the symptoms.

The lower respiratory tract, the bronchi and lungs are so frequently dependent on diseases of the nose and throat, especially the nasal accessory sinuses, that the interest of the patient cannot best be conserved unless both internist and otolaryngologist cooperate. Recurrent tracheobronchitis, asthma and bronchorrhea are most interesting subjects in this connection, particularly asthma, which recent investigations tend to show dependent on sensitization by protein poison due to disturbed action of the glands of internal secretion.

This brings me to the next class of diseases in which the internist and otolaryngologist must cooperate. Although much burdened by speculation, there are no doubt many positive findings that show the importance of the rôle played by the glands of internal secretions. Symptoms referable to the ear, nose and throat are common accompaniments, and it behooves the otolaryngologist to be well informed, so that he may cooperate with the internist in all such disturbances. The internist should understand how readily the rhinologic surgeon can operate on the hypophysis through the nose and sphenoid sinus, which may save the patient's vision and life.

There are no doubt many other conditions in respect to which the internist and the otolaryngologist must cooperate, such as the various anemias and diabetes which produce so many nose, throat and ear manifestations, which need not be particularized. It is easy in this connection for the otolaryngologist to err in the diagnosis. On the other hand, the internist may treat an anemia which is dependent on some nose, throat or ear infection as a chronic sinus or ear sup-puration which he may think unimportant.

4. Gynecology.—The female genitalia, when diseased, may produce symptoms referable to the nose and throat. All are familiar with the swellings of the erectile or turbinate structures within the nose in cases of malposition, inflammation or fibroids of the uterus. Some laryngologists have been very successful in relieving dysmenorrhea by some slight cauterization of the anterior part of the septum nasi. I have called attention to the closer relation in chlorotic girls between infantile uterus and atrophic rhinitis. Grayson and others assert that a hypersensitive condition of the nose occurring during the honeymoon period may result from changes in the female generative organs.

5. Pediatrics.—The pediatrician and the otolaryngologist are very often associated, especially in acute

infectious disease, because the nose, throat and ear symptoms are so prominent and complications involving these organs are among the commonest and most serious results of the infections. While all well trained pediatricians recognize this, they hardly give them the attention they deserve. Thus, it is commonly observed that an acute otitis media or acute sinus affection is frequently allowed to extend into a subacute or chronic state without being properly attended. It is my belief that many chronic suppurative and non-suppurative ear and sinus conditions result from the neglected or undiagnosed cases of sinus and ear infections in childhood.

Great strides have been made in recent years toward the establishment of the diagnosis of sinus disease in children, and for this reason there is less excuse for permitting these processes to continue into adult life, making a cure impossible or difficult.

Pediatricians and otolaryngologists, and even the laity, recognize the importance of the removal of tonsils and adenoid tissue, when diseased, and have been convinced of the remarkable improvement that follows proper removal. It must be admitted that there has been perhaps a bit of overenthusiasm along these lines. I mean that there is a disposition to hold the tonsils accountable before an exhaustive diagnosis of the condition has been made. If the operation does not clear up the condition, both the pediatrician and otolaryngologist may be inclined to hold the tonsillectomy at fault, when in reality a mistake in diagnosis was made.

6. *Neurology and Psychiatry.*—In my practice I see more cases presenting symptoms referable to the nervous system than to any other special branch. I have roughly estimated that 33 per cent. and at times 75 per cent. of all cases under treatment are more or less related to the nervous system. The most pronounced symptom is headache. The analysis of a headache is in my judgment the acme of perfection in diagnosis. The next in frequency is pain about the head and neck. It is often spoken of by the patient as headache. These symptoms are referable to disturbances of the gasserian and sphenopalatine ganglion and their branches.

As already mentioned, intracranial complications of sinus and ear suppurations, as well as brain tumors are very frequently the subject for discussion between the neurologist and the otolaryngologist. But of all the conditions in which the neurologist and the otolaryngologist come into relation, none is so important as disturbances of the organs of equilibrium. The work of Bárány and his followers has been so developed that an actual fusion of the two especial branches has taken place in the formation of what is known as "neurotology."

Neurologists, in the main, have not shown the interest in this work that it merits, whether because they do not take the trouble to study it or because they doubt empirically that it has any value. At any rate, only a few neurologists in the country have cooperated with otologists to the extent that is justified.

There are quite a number of conditions presumably of exclusive concern to the neurologist, as cerebral syphilis, tuberculous meningitis, general paresis, dementia praecox, epilepsy, and the various mental states as mania, melancholia, manic-depressive insanity and hysteria, in which the symptoms of

dizziness and vertigo are present and in which the function of the cerebellum, stalk and semicircular canals should be studied.

7. *Dermatology.*—I have already mentioned that cooperation between the otolaryngologist and the skin and venereal disease specialist is essential. Syphilis, of course, is the most common disease in which both branches are concerned. Not until the Wassermann test came into use as a diagnostic measure, was it found how many syphilitic ear, nose and throat conditions there are; and, strange to say, there are still many cases in which there is a presumption of syphilis and in which a competent Wassermann reaction, either of the blood or the spinal fluid, is not made. I shall speak of the competence of the Wassermann test later, when I take up laboratory cooperation. I could spend a long time discussing examples of syphilitic conditions involving the nose, throat and ear, but it will suffice to say that in every possible case it will be well to cooperate with the dermatologist, especially in the general treatment. I find quite a number of otolaryngologists still refusing to employ arsphenamin, because intravenous medication is somewhat more difficult; and when they do employ it, they are not completely successful.

Lupus and epithelioma are frequently found in the regions of the nose and ear; and in this regard they require cooperation of the two specialists. Especially is this true at present when the therapy is mostly carried out by the aid of radium and the roentgen ray.

A very common and most difficult condition to treat is what we call eczema of the external auditory canal. I am confident that an incorrect diagnosis has often been made. I have one such case which I treated for four years as eczema. A dermatologist made the diagnosis of favus and treated it as such with a permanent cure in six weeks. While furunculosis, both of the external ear and vestibule of the nose, is fairly well treated by most otolaryngologists, the general subject of furunculosis is much more exhaustively studied by the dermatologist. The same can be said of the acne which at times involves the external nose and ear. The bacterial side of the question as well as therapy (vaccines) is important, and the dermatologists are much better qualified than the otolaryngologists in this subject at this time.

So many other rare skin lesions are found, also infrequently about the nose and ear, that I wish to lay special emphasis on the importance of cooperating with the dermatologist. On the other hand, I must express my surprise at the dermatologist who is treating frank nose and throat and even ear conditions without the cooperation of an otolaryngologist, just because he has made a Wassermann test and found it positive or even because the patient has other syphilitic lesions. I am sure that local treatment is entirely ignored. The wrong is twofold: first, a syphilitic patient may and does have a nonsyphilitic nose, throat and ear affection; and secondly, many syphilitic nose, throat and ear affections must have local treatment and even operations at times.

8. *Obstetrics.*—Otosclerosis is a condition which should concern the obstetrician, although it is of far less importance than ophthalmia neonatorum. The well known hereditary tendency of this disease, especially when both parents are affected, makes it an impor-

tant factor in the prophylaxis of deafness. Furthermore, during gestation, labor and lactation, deafness is greatly increased in the mother suffering from otosclerosis. I have had several cases of otosclerosis in pregnant women in whom in cooperation with the obstetrician we carried out the systematic treatment of hypodermic injections of epinephrin, the result being, apparently at least, prevention in increase of deafness. It was also hoped that this might prevent the evidence of otosclerosis in the child. I have already discussed this phase of the subject.¹

The last two epidemics of influenza demonstrated that severe mastoid and sinus complications induced miscarriages in pregnancies of more than three months' duration; however, if pneumonia was present before the miscarriage, the woman usually succumbed.

Another question of great importance is whether or not a nose or throat operation should be performed on a pregnant woman. I feel it best to postpone all operations under the circumstances except those that are urgent. These have not been followed by untoward results in my own experience.

9. *Ophthalmology*.—The cooperation between ophthalmology and otolaryngology has been long established, first, because it has long been the custom of many physicians to associate the two specialties in their practice, and secondly, because the pathologic relation of the nose to the eye has been recognized for many years. During the last two decades, the dependence of many eye affections on the paranasal sinuses has been the subject of much study. While this was formerly fairly limited to the suppurative processes, it has now been extended to include the nonsuppurative conditions which, indeed, have been found of more prolific etiology in this respect than the former. Keratoconjunctivitis, iritis and uveitis are commonly found to be due to focal infections of the tonsils, sinuses, middle ear, mastoid and teeth.

Nystagmus is a symptom that pertains to both the eye and the ear, which makes it necessary to determine the origin. Paralysis of the various extrinsic muscles of the eye may be due and often is due to sinus or temporal bone infections. Likewise muscle imbalance may be due to sinus disease, and it is not uncommon to see a refractive error or latent hyperopia disappear only when the nasal or sinus trouble has been corrected.

10. *Genito-Urinary Diseases*.—Nephritis needs only to be mentioned. As we have considered it under the head of internal medicine, the genito-urinary system need be discussed only from the standpoint of the pelvis of the kidney, bladder and prostate gland. These may be the seat of a chronic septic infection, independent or secondary to a focus of infection in the upper respiratory tract. Some very striking results have been reported from attention to the prostate without treating the tonsil. In my own practice I have had a case of chronic cystitis of long duration promptly recover after tonsillectomy.

11. *Clinical Laboratory*.—This term I use to include radiology, serology, hematology, bacteriology, chemistry and micropathology. The man in charge of such a laboratory should be a physician, preferably an internist, and he should have a corps of technicians, at least two. The relation between the clinical labora-

tory and otolaryngology has really gone beyond the stage of cooperation, for practically every field of medicine has become dependent on the clinical laboratory for the basic understanding of diagnostic and therapeutic problems.

12. *Dentistry*.—Although dentistry has been a highly specialized branch of medicine which had what it arrogated to itself, the dignity of a profession in itself, it is fast becoming more and more attached to medicine. The mechanical requirements and accomplishments of the last fifty years carried it far away from its parent, medicine, and American dentistry has become famous by reason of the crown and bridge work, porcelain inlays and the like. It appears to be the function of dentistry to preserve the decayed teeth, stumps of roots, etc., and to supply their deficiencies by mechanical subterfuge. A great change, however, has come over the profession, as witnessed by the zealotry with which chronic apical infections are studied and the conspicuously energetic effort which is being manifested to remove every tooth or root which shows any evidence of being the seat of a focal infection.

All this has brought the dentist closer to the otolaryngologist, as these two must decide in the majority of cases just where the focal infection originates. The maxillary sinus has already furnished many points of contact, and it must remain a constant source of study for both from the etiologic and therapeutic standpoints. Impacted and infected wisdom teeth may cause a tonsillitis, generally unilateral, and their influence in peritonsillar abscess is now being made the subject of much study. Tinnitus and even reduction of hearing may depend on infected molars, removal of which causes the symptoms to subside. Orthodontia, which has accomplished much with and without the cooperation of the otolaryngologist, has still to answer a serious question. So far it has been available almost exclusively by the well-to-do. The poor have little chance to profit by its wonderful development.

CONCLUSION

While I advocate that every otolaryngologist should be well informed on all the other special branches of medicine in order to cooperate in diagnosis and treatment, it is only in the capacity of cooperator that he should consider his services and not supplant any other specialist.

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Industrial Sickness Statistics.—In the past not much attention has been given to the need for facts concerning the sickness problems of industrial establishments. Cases of illness have to some extent been recorded, but not in such a way as to permit analysis with respect to sex, age, occupation and other important conditions of physical status and environment of the persons concerned. It may appear to some that sickness records are unnecessary for plants having sanitary work places and no injurious processes or occupational hazards. Such an attitude is unjustifiable without knowledge of the sickness rates prevailing in these establishments. Under excellent conditions of work it is still possible for the frequency and severity rates of illness to be above the normal expectancy as the result of bad housing or other wrong living conditions, in which instance it becomes the duty of the employer to extend his activities beyond the confines of his factory or mine or store and to cooperate with municipal authorities and civic associations to right the injurious conditions responsible for the excessive disability discovered.—*Pub. Health Rev.*, April 9, 1920.

1. Beck, J. C.: Contribution to the Pathology and Treatment of Otosclerosis, *Ann. Otol., Rhinol. & Laryngol.* 21: 203, 1912.

SOME FALLACIES REGARDING NARCOTIC DRUG ADDICTION

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In plumbing the depths of narcotic drug addiction one must travel an uncharted course, with guides and landmarks very uncertain and at best most unreliable; but when these are aided and abetted by the unscrupulous and unworthy, as well as the financially interested, all must appreciate that the situation is made more complex and the solution of the problem rendered more difficult, if not actually impossible. Add to this opinions giving color to pathologic processes that do not exist, and confusion worse confounded must occur.

Drug addiction today is a public health problem, as it is a menace to the health, welfare and comfort of the public. The extent of drug addiction is problematic, but it may be indirectly inferred when one estimates the amount of opium and cocain consumed annually in this country.

How much of these narcotics would be ordinarily used by physicians or hospitals in a year? Surely not anywhere near the amount credited as imported annually. Then what becomes of this vast amount of these drugs? It is, of course, used by persons as a "tippling" habit.

CLASSIFICATION OF DRUG USERS

The habitual users of narcotic drugs may be divided into two general classes: (1) Those who suffer from a disease or ailment requiring the use of narcotic drugs, and (2) addicts—dope fiends—drug habitués: those who use narcotic drugs for the comfort these afford and solely by reason of an acquired habit. The Harrison Narcotic law (U. S. Supreme Court, Doremus and Webb cases) says that drugs may not be given to keep the users comfortable by maintaining their customary use.

Class 2 may be divided further:

- (a) Correctional (underworld type).
- (b) Mentally defective (the constitutionally inferior person or the individual with feeble-mindedness).
- (c) Social misfits (the person whose maladjustment does not permit him to conform to social customs).
- (d) Fortuitous (the individual who has had an adequate reason for taking narcotics, but the reason has disappeared and the drug habit is continued because of the physical suffering which unaided deprivation brings).

Many addicts loathe their habit, but physically cannot break from it unaided. A number of addicts, especially those in class subdivision *a*, use the practice of drug indulgence in their jobs. In our experience in drug addiction in New York City we found that those in subdivisions *a* and *b* were mostly heroinists, while the morphinists were in *c* and *d*. The heroinist and morphinist have been thus differentiated by an outspoken physician: The morphinist has guts, while the heroinist has only bowels.

Bad associates and evil environments are the chief causes producing addiction among youthful habitués in this city. Of 7,464 cases observed from April 10, 1919, to Jan. 15, 1920, in the department of health clinic, 3.5 per cent. were morphinists, while 96.5 per cent were heroinists.

MAGNITUDE OF THE DRUG TRAFFIC

How much opium and coca are used annually in this country?

The magnitude of this traffic is indicated by these statistical facts:

For the fiscal year ended June 30, 1918, there were 233,491 registrants as required by the Harrison act. These included: physicians, 125,905; wholesale dealers, 831; dentists, 42,240; manufacturers, 888; veterinarians, 10,399; importers, 76; hospitals, etc., 3,799; educational, 138; retail dealers, 48,196 and miscellaneous, 258.

The average yearly consumption for the period 1910-1915 was 491,043 pounds, which at the price of \$40 a pound for opium would make a total value of \$18,841,720. The average consumption of coca leaves for the same period was 1,048,250 pounds. At the present retail price of \$1 a pound this would represent approximately \$20,000,000.

Illegitimate traffic is known to have increased enormously in recent years, and is a serious menace at the present time. It is through this channel that most of the addicts receive their supplies of narcotic drugs. It has been estimated that about 90 per cent. of the amount of opium and cocain entered for consumption is used for other than medical purposes. This may perhaps be an extreme view; yet when the consumption of opium in the United States is compared with that in other countries, we find that the per capita consumption here is from thirteen to seventy-two times as great as in other countries.

CONSUMPTION OF OPIUM IN VARIOUS COUNTRIES

Country	Consumption per Capita, Grains
Austria	1/2
Italy	1
Germany	2
Portugal	2 1/2
France	3
Holland	3 1/2
United States	36

The amount of cocain which can be produced from the leaves imported is approximately 150,000 ounces—sufficient for two and one-half doses for every person in the country.

It is estimated that one fourth is used legitimately; 112,500 ounces of cocain are therefore used illicitly.

When this magnitude is considered carefully and scientifically, and it is known what a demoralizing, debasing effect such practice has, is it not a very serious matter to know that 80 per cent. of the addicts visiting the department of health clinic are young men and women just out of their teens?

The importance of securing more accurate information, particularly statistical, of the extent and growth of traffic in narcotic drugs in the different localities, especially in the large cities, is coming to be more keenly appreciated by all authorities, and in the near future it is hoped that the medical and pharmaceutical professions will be able to furnish data bearing directly on this subject in order to aid both the legal and the public health officials.

METHODS OF CONTROL

The control of the narcotic menace, to be effective, will necessarily not only have to correlate the professions directly interested but also secure the cooperation of all charitable and social agencies in order to work out a program for the effective administration of antinarcotic laws, as well as the rebuilding of those unfortunate persons afflicted with the drug habit.

Our men and women in the shops, factories, offices and homes must be properly protected from this growing evil, and all individuals and organizations should concern themselves regarding the unsatisfactory con-

ditions prevailing, and aid in better enforcement of the statutes regarding narcotic drug addiction.

One of the very first needs is to make compulsory the reporting by physicians and others of addicts (Class 2) in order that these persons may be known and given careful and suitable consideration. Another regulation is that all prescriptions issued for opiates and cocain should be in duplicate, one for the druggist and the other for some central agency (preferably a local department of health), that the practice in this particular may be independently checked and controlled.

CHARACTERISTICS OF ADDICTS

The etiology of narcotic drug addiction is not unusual or complicated. It is a natural sequence of indulgence in narcotics for a more or less variable period. The very susceptible acquire the habit in very short periods of time, some as short as ten days (some girls state that, after having sniffed three or four times, the withdrawal symptoms were marked); but usually it requires a number of such indulgences. Medically considered, it is thought that any one taking repeatedly a drug for a period of from three to five weeks is in grave danger of becoming an addict. When addiction has been established, it is usually impossible for the individual to discontinue the use of the drug without outside assistance.

In the clinic, 7,464 cases were cared for; and while gradual reduction (one-half grain every other day) was the custom, yet it was extremely difficult to hold our patients to schedule. A number openly opposed reduction; and when the amount was cut down about half, they left the clinic, not to return, or to return under a different name to commence again at the maximum dosage (15 grains) and pursue another course of reduction. Many were detected doubling in this manner. Of the total mentioned above, less than 2,000 availed themselves of hospital aid, 23 per cent. being the actual admissions. This demonstrates that they either feared to undertake a cure or else did not want to be cured.

There is no conclusion to be drawn regarding susceptibility as concerns age, sex or marital conditions. The same statement might also be made regarding race, occupation and other similar factors. The chief direct cause appeared to be evil association, in our experience 96.5 per cent. giving this as the cause of the practice.

Addicts have been found engaged in all lines of work. An early analysis disclosed that the skilled and the unskilled were about evenly divided, and this continued in the final analysis to be a fact. It was astonishing to find that 23 per cent. were engaged in transportation; chauffeurs, trainmen, drivers and motormen being the chief occupations given by the patients themselves. The preponderance was in the order given. This fact is considered, especially in New York City, to be a grave menace. In a case recently tried (*U. S. Government v. Jacobs-Cardoza*), it was testified by a physician that the chauffeur needed cocain to keep him on his job, or else he would be inattentive and sluggish and be unable to take care of his car in an emergency.

In a study of the occupations as a determining factor in causation, it was demonstrated that when hours were irregular, meals badly served, and stress and irritations frequent, addiction was more common. It was most frequent in those who handled the drugs, physicians,

nurses and pharmacists being proportionately the largest indulgers.

The effect of addiction on the character of a person was marked. Some drug addicts appear perfectly normal even to the experienced observer. Some were determined to be addicts with considerable difficulty. In the weak willed and those lacking character and where a drug-jag was apparent, determination was easily made.

The addict is not always a hopeless liar or a moral wreck or a creature sunk in vice and lost to all sense of decency and honor, but was frequently in our experience an upright person except as concerned his affliction or the procuring of the drug of his addiction. Addicts lied about dosage; but when they found that the game was "on the level" they would voluntarily admit deception and tell what they were actually taking.

When it is considered how these creatures were hounded and imposed on by the illicit prescriber and dispenser, as well as how they endeavored to escape police detection and family discovery, it was natural to meet some peculiar situations; but when sanctuary was assured, they calmed down and became friendly and communicative, and in many instances helped the officials to aid them in getting rid of their habit. Most of them when freed are anxious to remain free. I have been assured of this so often by addicts who have been off the drug and whom I have followed up that I make this statement advisedly and with positive assurances that many of our cases are off the drug for good, provided all temptation is removed. There were many instances in our experience in which the victims of this condition were persons of the highest qualities, physically, morally and intellectually, and some held high positions of authority and responsibility. One is a signalman who for twenty-five years has been addicted, yet has not missed a day from work and has never been reported for any company infraction, and, strange to relate, his superior officer was wholly unaware of his misfortune. This man took the cure and returned to his position, and for the last six months has been off the drug.

The correctional class I do not desire to discuss here, as the subject is one which merits special and lengthy consideration. The underworld addict is grossly misunderstood. While drug indulgence has been held accountable for his unmoral character, those whom I have had opportunity to study show degeneracy incident to association and environment, and addiction only as a secondary expedient for stimulating nerve energy and drowning painful reminiscences.

PROGNOSIS AND TREATMENT

The prognosis of narcotic drug addiction depends primarily on two conditions: control of the drug and control of the addict.

Simple, uncomplicated drug addiction is curable. By this I mean that the process of removing the drug and all physical need or craving for it is simple, safe, and can be quickly done—a matter of days only, not weeks, months or years, as some would have us believe.

There is no specific cure; none is needed. Take away the drug and prevent the addict from getting a new supply, and not only will he be cured but he will stay cured.

Addiction is not a mysterious disease, and while, from a purely scientific point of view, it would be

interesting to have more light on the problem of tolerance, there is a very general and complete understanding of drug addiction from the therapeutic standpoint among all who have dealt with it in institutions.

In the vast majority of instances—99 per cent.—excellent results may be obtained by simple abrupt withdrawal, without medication other than catharsis. Some form of mild anesthetic to tide over the first two or three days of suffering, which is mainly psychic in origin, is desirable from a humane point of view. Scopolamin (hyoscin) is ordinarily used for that purpose, but it is stated that belladonna works equally as well.

The clinic has proved in a large number of instances that it is so seldom that one can cure by the method of ambulatory treatment—that treatment in which the drug is given to the patient for self-administration—is practically to stamp such practice as improper. The method should not be permitted. It should be interdicted by law.

CONCLUSIONS

So long as addicts can obtain cheap supplies of drugs without personal risk, very few will apply for hospital curative treatment.

Narcotic drug addiction can be stopped by sufficiently stringent laws, strictly and uniformly enforced.

Public narcotic dispensaries are not desirable or satisfactory in dealing with the problem of drug addiction. This method has been given a careful, thorough and extensive trial in New York City, and we have come to the conclusion that it is unwise to maintain such an institution. The clinic was found to possess all the objectionable features and opportunities of abuse presented by the ambulatory treatment of private physicians prescribing to the addict when at large. Except one factor, namely, financial profit to a few physicians performing this character of service (fifty-five out of 8,100 registered in New York City).

Ample provision should be made for hospital or institutional treatment to cover the stage of withdrawal and for the control, care, and moral and mental as well as physical upbuilding of those persons who require it and show the possibility of profiting from such treatment.

Our study and experience indicate very clearly the necessity for general and uniform enforcement of the law—the Harrison Narcotic Law. There will be no panic of addicts seeking medical relief. Prevent the addict from getting his drug, and in very many instances he will cure himself, and if unable to get the drug he will stay cured. Some have stated time and again that rapid withdrawal will be followed by collapse. It is always well to treat all cases under medical supervision, and physicians experienced in this line of medical practice know that a very small dose of the drug (from one-fourth to one-half grain hypodermically) will control all manifestations of withdrawal. The work of reclaiming narcotic addicts is well worth while. From our recent experience I assert without fear of contradiction that at least of the many undesirables no less than one half can be brought back to useful lives, and that one fourth should be in some special institution (the types classified in *a* and *b*) where, with suitable care and training, many can be made useful citizens instead of merely being impedimenta and parasitic.

Off the drug, and with life made comfortable by suitable guidance the addict, like every normal person,

faces his daily problems and can do so; but to stand alone requires after-care until he can feel at home in his new surroundings. This may take several months; but with help, redemption is sure.

The problem of narcotic drug addiction may be summed up in the problems of life, the underlying causes being more personal than social. Treatment is likewise individual and not specific.

The drug addict serves no useful purpose. He is a loss to himself and a menace to society. Addiction begins and ends in the realm of personality.

ANTHRAX: COMPARISON OF SURGICAL AND NONSURGICAL METHODS OF TREATMENT

A REVIEW OF FIFTY-ONE CASES TREATED AT THE MASSACHUSETTS GENERAL HOSPITAL FROM 1888 TO 1918

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LOS ANGELES

Historically, the anthrax bacillus is of much interest. Pasteur's trials and triumphs in anthrax inoculation and immunization are well known. Davaine, working with this bacillus in 1863, and later Koch, opened up a new era in bacteriology when for the first time a micro-organism was definitely proved to have a specific etiologic relation to an infectious disease.

Anthrax is a specific and highly contagious disease, common to man and to most animals, and, according to Osler, geographically and zoologically the most widespread of all the infectious diseases. It is quite prevalent in France, Italy, Russia, China and South America, although in North America cases are rather infrequent, so much so that the occasional small epidemics find physicians undecided as to the course of treatment. Anthrax in man is always derived from some domestic animal or animal product, such as hide, hair or wool. The lesion appears about twenty-four hours after inoculation, and in the early stage resembles an ordinary small furuncle; but very quickly the central portion becomes filled with a bloody serous material. This rapidly changes to a black central necrosis which, on drying, gives the typical small, black eschar, or crust, commonly seen at the time patients come for treatment. This eschar is encircled by a ring of small, pearly vesicles, and surrounding this is a rather extensive brawny edema.

In animals the disease is contracted by the ingestion of forage containing anthrax spores. Flies evidently also play a minor part, as Schuberg¹ succeeded in transferring the infection from a cadaver to living animals by means of the stable fly. He also demonstrated that anthrax organisms remained viable in the stomach of flies for months, while Graham-Smith¹ recovered positive cultures from feces of house flies three years after deposition. The bacillus itself is easily destroyed; but in the presence of oxygen, markedly resistant spores are formed which are not affected by ordinary means of disinfection.

REVIEW OF CASES

The cases of anthrax treated at the Massachusetts General Hospital between 1888 and 1918 are the basis

1. Cited by Mitzman, M. B.: Summary of Experiments in the Transmission of Anthrax by Biting Flies, Bull. 94, Hyg. Lab. U. S. P. H. S., pp. 41-48.

of this study. The interesting contrast of results between the surgical and nonsurgical methods of treatment affords sufficient excuse to add this series to an already overburdened literature. In recent articles on anthrax, surgery and cauterization are frequently advised, but statistical reports are strikingly few.

These cases were not selected as surgical or nonsurgical, according to the condition of the patient. The nonsurgical cases are more recent and were treated conservatively following a suggestion by Dr. J. Homer Wright.

COMPARATIVE RESULTS OBTAINED IN CASES TREATED SURGICALLY AND NONSURGICALLY

	No.	Per Cent.
Total cases	51	
Total deaths	7	13.7
Cases treated surgically	9	
Deaths	4	44
Cases treated nonsurgically	42	
Deaths	3	7

The average duration of the disease in patients that recovered was twenty-three days. Death in the seven fatal cases occurred on an average of four days after the onset of the disease.

In forty-two, or 82.3 per cent., of the cases, the lesion was located on the face or neck. Infections in this region are considered especially dangerous on account of the proximity of vital structures. The loose cellular tissues in this area aid in the spread and extension of the local lesion, and the resulting edema in the neck often gives rise to marked respiratory difficulty.

Thirty-eight infections were in men engaged in handling hides; of these, twenty-three were leather tanners. All of the patients treated were males except one. This was a girl, aged 17, who was employed sorting bristles in a brush factory.

The general symptoms found in this disease, such as nausea and vomiting, restlessness and headache, are often absent and have no constant relation to the extent of the disease. In the majority of cases a rise in temperature of 2 or 3 degrees was noted which generally persisted only for from three to four days. Cases which are ushered in with marked symptoms and a sharp rise in temperature indicate a definite reaction on the part of the patient, and in such cases there was a favorable and rapid termination of the disease. The temperature is often low in grave cases, and in several a subnormal temperature was noticed just before death.

Anthrax is often mistaken for cellulitis or a carbuncle. An early diagnosis of the condition can be made bacteriologically by demonstration of the anthrax bacillus in the lesion. After the crusting over of the lesion, it is necessary to elevate the cutaneous edge and probe between the crust and the skin in order to find suitable material for examination. Of the fifty-one cases of this series, the anthrax bacillus was found in forty-one; in two cases negative results were reported, and in nine no record of the presence of the bacillus was made.

The patients were isolated, and precautions were taken against the spread of the infection. In the majority of cases, there was no discharge, and no case of reinfection was noted. The anthrax bacillus does not form pus. In one case, fifteen days after the onset of the disease, the initial lesion having practically healed, definite swelling and brawny induration indi-

cated pus in the region of the submaxillary gland. Wide excision of this area with a thorough spreading of the tissues failed to reveal any pus.

The first of the four deaths in the Massachusetts General Hospital following surgical procedure in the treatment of anthrax occurred in a man with a lesion of the right cheek. The patient died nine hours after excision of the pustule without having rallied from the operation. In the second case of death, a spreading of the edema was noted directly after operation, which consisted in a wide excision of a lesion in the neck. Seven hours later the patient was pulseless, the temperature dropped to 97 F., and death occurred shortly after. The third death was also in a case of anthrax of the neck; an elliptic incision 10 by 12 cm. was made down to the deep fascia. This patient showed some improvement; but on the second day after operation, the edema extended, and the patient died on the following day. The fourth death was in the case of a lesion on the arm; a crucial incision was made, but rapid extension of edema followed the operation, and the patient died several days later.

A fifth patient with an infection on the forearm recovered after an amputation at the shoulder joint. The remaining four of the group of nine patients treated surgically had uneventful convalescences following the excision of the lesion.

Patients treated nonsurgically were confined to bed. Whenever the location of the lesion permitted, the infected area was splinted and elevated. A light diet was given, and fluids were forced to the maximum amount.

The infected area in the earlier cases was covered with dry gauze or mercuric chlorid poultices. The cases treated during the last three years cleared up more rapidly, and the patients were more comfortable when no dressings were used, the lesion being exposed to the air.

Anthrax patients were considered potential sources of infection until three consecutive smears taken on alternate days proved them to be otherwise.

Of the three deaths in the nonsurgical cases, the first occurred in a patient with a lesion on the right side of the neck. Edema extended over the face, neck and upper chest wall. The blood gave a positive culture for anthrax. The patient was markedly dyspneic and had practically stopped breathing when a hurried tracheotomy was performed without benefit. The second death also occurred in a case of cervically located lesion. There was marked edema and respiratory difficulty. A tracheotomy was performed through infected tissues without noticeable relief to the obstructed breathing, and the patient died two hours later. The third patient who died among those treated nonsurgically entered the hospital three days after the onset of a lesion of the right cheek. Edema was moderate, and the patient was not considered dangerously ill. On the afternoon of the first day in the hospital, the patient suddenly sat up in bed, complained of a pain in his chest, and died.

The immediate cause of death in anthrax infections is not definitely known. The decidedly toxemic nature of the disease in man indicates the existence of poisons, even though true secretory or endotoxins have not been isolated. Vaughan in summing up the results of his experimental work on anthrax, states that the pathogenicity of a bacterium is not measured by its capability of furnishing a poisonous group, but by its

bility to grow and multiply in the animal body. Hiss and Zinsser state that it is probable that death is brought about by purely mechanical means, such as apillary obstruction.

METHODS OF TREATMENT

Ravenel states that anthrax begins as a local infection, and that the bacilli are localized in and near the lesion. For this reason, he advises immediate destruction of the pustule or focus of infection. Most surgical textbooks advise radical removal as the safest course.

Hiss and Zinsser assert that although the bacilli are not demonstrable in the blood until just before death, they invade the blood and lymph streams immediately after inoculation and are conveyed to all the organs. This was demonstrated by inoculations in the tails or ears of guinea-pigs, after which these parts were immediately amputated. The spread of the disease and fatal outcome were not prevented by these measures. The bacilli in the early stages are not able to multiply in the blood, however, at the site of inoculation, and probably in the organs also, they proliferate until the resistance is entirely overcome. At this stage of the disease, when the antagonistic action of the blood has been destroyed, the bacilli may multiply in the circulation and can then be demonstrated in the blood. A positive blood culture was found in only one case of this series.

Becker² made a study of blood cultures in forty-one cases. Eleven of the cultures were positive; ten of the patients died. The eleventh was treated intravenously with arsphenamin and recovered. Roos³ asserts that in animal experimentation he found arsphenamin to have a specific action on the anthrax bacillus, acting directly on the bacteria. Laubenheimer⁴ also reports a case with positive blood culture successfully treated with arsphenamin.

Prätorius,⁵ whose experience with anthrax has been very extensive, advises against surgical interference; this opens up the lymphatics and aids in the spread of the disease.

Müller⁶ asserts that it is impossible to destroy the disease by excision of the site of inoculation. He carried out a series of experiments similar to those carried out by Hiss and Zinsser. In guinea-pigs, he was unable to prevent the spread of the disease by amputation of the inoculated area. He states that treatment should aim to assist the cells about the inoculated area in preventing dissemination of the bacteria. Excision is harmful, as it tends to break down the natural barriers to the local infection and to increase the absorption of the toxic substances around the lesion. In a number of cases in the Massachusetts General Hospital series, operation was so closely followed by extension of the edema, septicemia and death that it was undoubtedly a causative factor. Müller believes in immobilization and elevation of the infected part; he reports thirteen successfully treated cases. Eurich⁷

asserts with regard to immobilization that the most severe cases are those in which the lesion occurs in parts of the body in which motion is free and in which the cell tissues are lax. Three of his ten patients who had lesions on the wrist died. There were no deaths among the ten patients with infections on the arm. Eurich insists that absolute rest of the part affected is necessary.

Graef⁸ reports 384 cases in which cauterization with potassium hydroxid was performed with only a 5 per cent. mortality. Potassium hydroxid is extremely painful when applied to the skin, and often leaves extensive scarring. Pied⁹ drives a blast of hot air on the lesion through a small needle, until the eschar and vesicular area are completely cauterized. He asserts that no anesthetic is necessary, as there is an anesthesia to pain and heat about all anthrax lesions. He advises continuing the cauterization 0.5 cm. beyond the anesthetic area.

Muskett¹⁰ found in laboratory experiments that ipecac readily destroyed the anthrax bacillus. He cites fifty cases successfully treated by applying powdered ipecac to the lesion. Fortineau¹¹ found an antagonistic action between *Bacillus pyocyaneus* and *Bacillus anthrax*. He treated thirty-two patients by injection of an extract from a culture of *Bacillus pyocyaneus*; one patient died.

A number of recent articles on anthrax mention phenol (carbolic acid) injection. Scharnowski⁸ reports fifty cases from Russia, with a 2 per cent. mortality. Regan¹² reports a successful case, and suggests phenol injection at the site of the wound.

Anthrax serum was used in only one of the cases of this series. The temperature, which had remained at 103 F. for five days, dropped immediately after the first injection and remained normal. Sclavo, in 1895, in Italy; and Marchoux, in 1895, in France, reported the use of anthrax serum. The serum has been used extensively in Italy and also recently in France, but only rarely in this country, although it is readily obtainable here. Legge¹³ studied a series of cases in Italians treated by Sclavo with serum. In 164 cases there was a mortality of only 6.09 per cent., in contrast to 24 per cent., the rate for all cases treated in Italy over a period of fifteen years.

Pied⁹ cites nine cases with a positive blood culture, in seven of which serum treatment was used successfully. Bissell¹⁴ and Graham¹⁵ also report two cases with positive blood culture, successfully treated, serum having been used.

Bowlby and Andrews¹⁶ report a case in which cultures from the vesicles around the lesion yielded abundant anthrax bacilli. Nineteen hours after an injection of serum, cultures similarly taken were negative. Serum, which is evidently not harmful to the patient, generally arrests the extension of the edema,

8. Quoted by Legge, T.: Industrial Anthrax, Brit. M. J. **1**: 589, 1905.

9. Pied, H.: Sur la pustule maligne, Bull. méd., Paris **21**: 1135, 1913.

10. Muskett, E.: On the Specific Treatment of Anthrax and Anthracemia, Lancet **1**: 269, 1888.

11. Fortineau, L.: Traitement du charbon par la pyocyanine, Presse méd. **20**: 678, 1912.

12. Regan, J. C.: Human Anthrax, Am. J. M. Sc. **157**: 782 (June) 1919.

13. Legge, T.: Industrial Anthrax, Brit. M. J. **1**: 589, 1905.

14. Bissell, J.: Human Anthrax, New York M. J. **106**: 110 (July 21) 1917.

15. Graham, R. R., and Detweiler, H. K.: Anthrax: A Case of B. Anthracis Septicemia with Recovery, J. A. M. A. **70**: 671 (March 9) 1918.

16. Bowlby, A., and Andrews, F.: Anthrax Treated with Sclavo's Serum, Brit. M. J. **1**: 296, 1905.

2. Becker, G.: Die bakteriologische Blutuntersuchung beim Milzbrand des Menschen, Deutsch. Ztschr. f. Chir. **112**: 265-283, 1911.

3. Roos, O.: Ueber die Einwirkung von Salvarsan auf Milzbrandbakterien, Ztschr. f. Immunitätsforsch. u. exper. Therap. **15**: 487-505, 1912.

4. Laubenheimer and Bettman: Ueber die Wirkung des Salvarsans bei dem Milzbrand, Deutsch. med. Wchnschr. **38**: 349-351, 1912.

5. Prätorius, P.: Milzbranddiagnose durch Untersuchung des Liquor cerebrospinalis, St. Petersburg. med. Ztschr. **38**: 290, 1913.

6. Müller, K.: Der äussere Milzbrand des Menschen, Deutsch. med. Wchnschr. **20**: 515-535, 1894.

7. Eurich, F.: Anthrax in the Woollen Industry, Proc. Roy. Soc. Med. **6**: 219-240, 1912, Sect. Epidemiol. and State Med.

which is the most troublesome feature of the disease. Krause,¹⁷ in a number of recent articles, reports successful results from the use of normal serum in the treatment of anthrax in man. From 30 to 50 c.c. are injected daily, either subcutaneously or intravenously until the acute symptoms have subsided. Two hundred cases are reported with a 0.5 per cent. mortality. Kolmer,¹⁸ after experimenting with beef serum, concluded that while it contained some antibactericidal properties, they were without demonstrable protective and curative value in experimental anthrax infections in mice and rabbits.

COMMENT

The majority of the methods of treating anthrax described in the literature are conservative. Surgical intervention offers very little. The organism is building up protective barriers and walling off and splinting the infected area. The main contention of those advising surgery is that the lesion is strictly a local one, and excision should be performed before generalization takes place. On the contrary, there is probably a systemic infection from the onset, but in most cases it is not so great that the organism cannot overcome it. The involvement of neighboring lymph glands which is seen in most cases, and the marked edema which, at times, extends as much as 25 cm. beyond the local lesion, argue against a localization of the infection. A wide excision through this edematous area, giving an extensive field for absorption, opening up many new portals of entry is sufficient, in some cases, to overcome completely the resistance of the patient.

SUMMARY

1. The early diagnosis is made bacteriologically by the demonstration of the anthrax bacilli in the wound. Anthrax bacilli were found in 81.2 per cent. of the cases treated at the Massachusetts General Hospital.
2. The general symptoms give no constant indication of the severity of the infection.
3. The mortality in the cases reviewed was 13.7 per cent.
4. Four of nine patients (44 per cent.) treated surgically died; only three (7 per cent.) treated nonsurgically died.
5. Forty-two patients had lesions on the face and neck. Cervical infections are especially dangerous; two of the patients treated nonsurgically died from respiratory difficulty resulting from the associated edema.
6. The patients treated nonsurgically were confined to bed. Their lesions were left absolutely alone and exposed to the air; no special general measures were carried out.
7. In several of the surgical cases a rapid increase in the edema, a steady decline in the patient's general condition, and death several hours later definitely pointed to the operation as the causative factor.

17. Penna, J.; Cuenca, J. B., and Krause, R.: Normal Beef-Serum in Treatment of Anthrax, *Prensa méd., Argentina* **28**: 297, 1917; *ibid.* **30**: 455, 1918; *abstr. J. A. M. A.* **68**: 1589 (May 26) 1917; *ibid.* **69**: 234 (July 20) 1918.

18. Kolmer, J. A.; Wanner, D., and Koehler, M.: Influence of Normal Beef Serum on the Anthrax bacillus, *J. Infect. Dis.* **26**: 148 (Feb.) 1920.

Disease and Symptoms.—Disease is made manifest to us only by the symptoms it produces, hence it is imperative that the first step should be to understand the nature and significance of symptoms.—J. MacKenzie, *Brit. M. J.* **1**:105 (Jan. 24) 1920.

SUCCESSFUL TREATMENT OF GIARDIASIS IN MAN WITH NEO-ARSPHENAMIN

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The pathogenicity of *Giardia (Lambliia) intestinalis* is now fairly definitely established; in fact, this flagellate has recently been described as the causative organism of "trench diarrhea,"¹ a dysenteric condition which most of the overseas troops experienced and from which a number of the returned soldiers are still suffering.

Several different medicaments have recently been employed in the treatment of this disease; and, while some of these² have been found to give temporary relief, no permanent cure has hitherto been effected.

The rôle which salts of heavy metals, notably mercurial and arsenical preparations, play in the treatment of syphilis and some other flagellate diseases is common knowledge; and at least two groups of workers have observed that the cysts of *Giardia muris* disappeared from the feces of infected rats following intravenous injections of heavy doses of arsphenamin. Probably the most noteworthy of these observations are those made by Kofoid and his associates.¹ However, so far as we are aware, no attempt has been made to utilize these substances in the treatment of human diseases caused by intestinal protozoa.

Since neo-arsphenamin is being used with good success against the syphilis flagellate, it occurred to us that intestinal flagellates, and possibly also other intestinal protozoa, might prove to be susceptible to the action of this product; and, moreover, since the oxidation products of neo-arsphenamin are readily excreted by the way of the intestinal tract, intestinal protozoa ought to be more easily reached than the syphilis organism, which is often intracellular. It was, therefore, not surprising when in the course of our investigations we observed that not only the cysts of *Giardia intestinalis* and *Chilomastix mesnili*, but also those of *Endamoeba coli*, *E. histolytica* and *E. nana*, rapidly disappeared from the stools of man following intravenous injections of neo-arsphenamin, and that the cysts of *Eimeria stiedae* disappeared from the feces of rabbits following intramuscular injections of heavy doses of neo-arsphenamin. Whether or not the results obtained through this treatment are permanent is yet to be determined. A number of cases are under observation, and these will be reported on as soon as a sufficient period of time has elapsed to enable one to draw definite conclusions. In the case here reported, however, a permanent cure appears to have been established.

REPORT OF CASE

History.—W. G. S., aged 25, American, a salesman, formerly a soldier, who came in July, 1919, complained of

1. Kofoid, C. A.; Boeck, W. C.; Minnich, D. E., and Rogers, J. H.: On the Treatment of Giardiasis in Rats with Arsenobenzol, *J. Med. Res.* **39**: 293-299 (Jan.) 1919.

2. Wenyon, C. M., and O'Connor, F. W.: Human Intestinal Protozoa in the Near East, published for the Wellcome Bureau of Scientific Research by John Bale, Sons & Danielsson, London; reprinted from *J. R. A. M. C.* **28**: 1-34, 157-187, 346-370, 461-492.

abdominal pain more or less continuous but varying in intensity and interfering greatly with work, together with an intermittent diarrhea. The family history was negative. The personal history was negative as regards the present trouble. June 22, 1918, the patient entered the army. He was detailed to a northern university for study, and on Oct. 16, 1918, he was sent across. He remained in Brest nine days. On the ninth day a distressing diarrhea started, and persisted all night. This was the only serious acute attack that he had, but he continued to have from four to six movements a day for the remaining six months he was abroad. Part of this time the stools were black. He received no treatment. He was discharged, March 11, 1919. The patient experienced a return of abdominal distress in May or June, 1919, when it gradually became worse. He lost twenty-five pounds in four months. Frequent stools varied with the pain, and were watery, containing much mucus and some blood. He had been examined several times and had been variously advised. In one hospital he understood the diagnosis to be duodenal ulcer, and it was with his belief that he came to us for advice and treatment.

Examination.—Conclusions were drawn from physical and roentgen-ray examinations that a gastric or duodenal lesion did not exist and that the irritable intestinal tract must result from a parasitic or reflex cause. The Wassermann test was negative. The urine had a specific gravity of 1.025; it was neutral and clear; Fehling's test was negative; there was a trace of albumin; the sediment was negative. Macroscopically, the stool was unformed, dark brown, almost black, and pasty; it contained some mucus; the patient reported a bloody mucous stool a few days previous to this examination. On microscopic examination a few motile forms of *Endamoeba histolytica* and numerous cysts of *Giardia intestinalis* of the so-called "large race" were found.

TREATMENT

Emetin.—On establishment of the diagnosis of amebic dysentery by the identification of *Endamoeba histolytica*, one-half grain of emetin hydrochlorid was administered hypodermically daily, together with two alcresta ipecac (Eli Lilly Company) tablets by mouth three times a day after meals for fourteen days. Stool examinations were made daily.

Results: *Endamoeba histolytica* disappeared from the stools on the second day and did not reappear. No cysts of this organism were encountered. The character of the stools improved; they were less frequent, less watery, and contained less mucus and no blood that could be detected macroscopically. There was no appreciable decrease in the number of cysts of *Giardia intestinalis*. The abdominal discomforts still persisted.

Sulphur.—In September the patient's stools again became frequent and semifluid. The endamebas were absent from the stools, but the cysts of *Giardia intestinalis* were present in even greater numbers than before. A sulphur treatment was instituted in the hope of controlling this flagellate. Beginning with 15 grains and gradually increasing to 25 grains, sublimed sulphur was administered by mouth three times daily for fourteen days. Stool examinations were made every alternate day.

Results: On the second day the number of cysts was found to be greatly reduced; on the fourth day cysts were detected only after concentration of the stool by centrifugation; on the sixth day the number had greatly increased, while on the eighth day and thereafter the cysts were as abundant as ever. No change in the patient's condition was observed.

Neo-Arsphenamin Treatment (single injection).—In November the patient reported severe abdominal pains, and was able to obtain relief only by wearing a tightly fitting bandage over the point of attack. November 29, 0.6 gm. of neo-arsphenamin was introduced into the blood stream. Stool examinations were made daily for six successive days.

Results: Examination was made of the last part of a stool passed three hours after the treatment; no cysts were found at this examination; however, unfortunately, no examination

was made of the first part of the sample passed, nor had a stool examination been made for six days previous to the treatment. The cysts did not reappear in the stools during the six days following the treatment. The patient's condition improved and he was able to remove the bandage.

Neo-Arsphenamin Treatment (three injections).—December 24, the patient reported a recurrence of the abdominal discomfort. An examination of his stool made on this day revealed numerous cysts of *Giardia intestinalis*. These cysts varied greatly in size and shape; some typically shaped cysts were only one-third the usual size, others were larger than normal, while still others were flat on one end. December 24 and 29 and January 2, intravenous injections of 0.6 gm. each were made; and, following the second injection, calomel and castor oil were administered by mouth. Stool examinations were made daily for twelve successive days during and following the period of treatment; and for six successive days once a month thereafter.

Results: The cysts of *Giardia intestinalis* were greatly reduced in number in the first sample collected after the first injection and were entirely absent from the stools on the second day after the first injection, and have not since recurred. The patient's condition has greatly improved; his stools have become normal and his abdominal discomforts have abated.

INCIDENCE OF TUBERCULOSIS IN HUSBAND AND WIFE *

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A great deal has been written on the degree of infectiousness of the tuberculous consort to the well one. The pendulum has swung from one extreme to the other. It is about time we were taking what I consider a sane view of the matter. The question is whether or not there is such a thing as adult infection. If there is such a thing we have in the man and wife the ideal relation, or culture medium, namely, prolonged and intimate contact.

Probably the most radical exponent against the theory of adult infection is Fishberg,¹ who says he has never observed a case of tuberculosis transmitted from one consort to the other. He gives as proof of the impossibility of adult reinfection the fact that the hospital staffs in institutions harboring tuberculosis patients do not suffer from tuberculosis more than others.

In another study, Fishberg² has investigated the conditions under which many of the tuberculous live. He examined 170 consumptives, nine of whom were women and 161 men. In the latter group he found that seventy-eight of the wives lived with their tuberculous husbands at home, and of these fifty-one slept in the same room and twenty-three even shared their beds with them. Of the rest, twenty-seven of the tuberculous husbands were inmates in sanatoriums or hospitals for consumptives, and five were away from home, though not in institutions. He also found that during the time of the illness of the affected consorts, forty-eight children were born. Out of this number Fishberg found that in only 3 per cent. of the cases both husband and wife were tuberculous—a rather strong argument against adult infection.

* From the Denver Municipal Tuberculosis Dispensary.

* Read before the Medical Society of the City and County of Denver, April 6, 1920.

1. Fishberg, Maurice: Traditional Fallacies About Tuberculosis, New York M. J. **104**: 1085 (Dec. 2) 1916.

2. Fishberg, Maurice: The Rarity of Conjugal Tuberculosis, Am. J. M. Sc. **153**: 395 (March) 1917.

Sir Hermann Weber³ found in "sixty-eight persons, male and female, who with more or less pronounced consumptive taint had married healthy partners, that ten of the partners of these sixty-eight cases became consumptive, or 14.7 per cent. Nine of the tuberculous husbands lost eighteen wives, namely, one lost four, one lost three, four lost two each and three one each."

I. Burney Yeo⁴ collected records of 1,055 cases of consumption, which had come under his observation consecutively in the hospital. Of this number, 621 were males and 434 females. Of the males, 306 were married, 297 were single, and eighteen were widowers. Of the eighteen widowers, only two, or about 11 per cent., could state positively that they had lost their wives by consumption. Of the 434 females, 199 were married, 206 were single, and twenty-nine were widows, only five or 17 per cent., were able to state positively that their husbands had died of tuberculosis.

Among 159 couples in which one of the partners was tuberculous, Brehmer⁵ found that in nineteen, or 12 per cent., both suffered from the same disease.

Haupt⁶ found in 417 cases twenty-two, or 5.2 per cent., in which both partners were affected with tuberculosis.

Cornet⁷ found among 594 couples that both partners were tuberculous in 23 per cent. of the instances.

Jacob and Pannwitz,⁸ in a collective investigation in several German sanatoriums, found that in 8.57 per cent. of the cases, conjugal tuberculosis was present.

An excellent and exhaustive statistical work on this subject has been published by William Weinberg,⁹ who found that among 1,426 husbands of tuberculous wives, 118, or 8.3 per cent., died from this disease. Among 2,506 wives of tuberculous husbands, 112, or 4.5 per cent., succumbed to this disease, or among 3,932 consorts of tuberculous persons 230, or 5.9 per cent., died from tuberculosis. He thus finds that the mortality from phthisis among those who are married to consumptives is about double that observed in the general population, in which it is about 2.7 per cent.

Ludwig Levy¹⁰ investigated 317 married couples who lived in poverty and want. Thirty-four per cent. shared the same bed. Two and eight-tenths per cent. of the disease was due to marital infection.

Ward,¹¹ in an analysis of 156 cases in which the mate of a tuberculous husband or wife was examined, found the extraordinary number of ninety-one, or 58 per cent., tuberculous. Sixteen were considered suspicious, and forty-nine negative.

Wilson Fox¹² cites a few cases of great interest:

A. A phthisical man married several times, and most of his wives became phthisical.

B. A consumptive man died, having transmitted the disease to his wife, who infected her second husband.

C. A man infected his wife and died. His widow remarried and also died of tuberculosis, as did her second husband, after

he had remarried. His widow lived and also married again, and the next husband died of tuberculosis.

D. A woman married two tuberculous husbands in succession and became tuberculous after the death of the second.

E. A consumptive wife died leaving an infected husband, who infected a second wife.

F. A consumptive wife, before dying, infected her husband, who later infected a second wife. This widow afterward infected a second husband.

G. A woman died of tuberculosis. Her husband, not said to have been tuberculous, married three other wives. Of his four wives, the first, second and third died of tuberculosis, but the fourth wife and the husband were apparently free from the disease.

Another convincing study has been made by Crouch¹³ of the Modern Woodmen Sanatorium, Colorado Springs. His investigations covered 4,100 cases, all males. Of this number, 2,771 were married, and 233 were widowed. Out of this total of 3,004 cases, 193, or 6.4 per cent., had wives who showed either a history of tuberculosis or who had died of tuberculosis. In the consideration of the widowers, however, he found that 136, or 58.37 per cent., lost their wives from tuberculosis. He concludes that "58.37 per cent. of tuberculosis among 233 widowers is certainly more than a coincidence."

The conclusions of other men who have made a special study of marital tuberculosis with the percentage of contagiousness they have found in their investigations are given herewith: Elsasser,¹⁴ 39 per cent.; Gebser,¹⁵ 5 per cent.; Jousset,¹⁶ 3 per cent.; Thom,¹⁷ 3 per cent., and Turban,¹⁸ 6 per cent.

There is a variation in the statistics of from 3 to 58 per cent. Of course, it is possible that both husband and wife may have tuberculosis when they marry, which contingency has to be taken into consideration.

Levy¹⁰ and Ward¹¹ have made the interesting observation that when the consort died and the other consort had clinical tuberculosis, often the infection after six months was overcome or the patient was much improved. This occurred in spite of the fact that usually there was the added responsibility of taking care of the children alone. This was true not only in the case of the surviving husband but also in the case of the surviving wife. This would show that the continued massive infection was each day lowering the consort's resistance; but when he was not exposed to the continuous culture of tuberculosis, he improved.

RESULTS OF AUTHOR'S INVESTIGATION

In my investigation, which covered 1,000 successive dispensary cases, I was especially careful to classify none as tuberculous which were in the least doubtful.

I considered that a case was tuberculosis if the bacilli were present, or if there was a history of hemorrhages, a number of attacks of pleurisy, dulness with persistent moisture over the apexes continuing for a year or more, or if the patient died of tuberculosis. In other words, I considered only positive cases of tuberculosis and no suspects. In the series of cases, 502 of the patients were married and 498 were single.

I found that among these 502, there was active tuberculosis in husband and wife in forty-four cases, or 8.7 per cent. Of the forty-four cases, twenty-two of the consorts had died of tuberculosis, or 50 per

3. Weber, Hermann: On the Communication of Consumption from Husband to Wife, *Tr. Clin. Soc.*, London 7:144, 1874.

4. Yeo, I. B.: Contagiousness of Consumption, *Brit. M. J.* 1:895, 1888.

5. Brehmer, Hermann: Die Therapie der chronischen Lungenschwindsucht, Berlin, 1885.

6. Haupt: *Deutsch. med. Wchnschr.* 11:340, 1890.

7. Cornet, George: Tuberculosis, Philadelphia, W. B. Saunders Company, 1904, p. 263.

8. Jacob, Paul, and Pannwitz, Gotthold: Entstehung und Bekämpfung der Lungentuberkulose, Berlin, 1904.

9. Weinberg, William: Lungenschwindsucht bei Ehegatten, *Beitr. z. Klin. d. Tuberk.* 5:365, 1906.

10. Levy, Ludwig: Statistisches über Tuberkulose der Ehegatten, *Beitr. z. Klin. d. Tuberk.* 32:147, 1914.

11. Ward, E.: Conjugal Tuberculosis, *Lancet* 2:606 (Oct. 4) 1919.

12. Fox, Wilson: Diseases of the Lungs, London, 1891, p. 571.

13. Crouch, J. B.: Personal communication to the author.

14. Elsasser: Mitteilungen über die Gefahr der Tuberkulose für Ehe und Familie, Annsberg, Becker's Verlag, 1901.

15. Gebser: Auf der 7. Tuberkulose Versammlung Karlsruhe, 1910.

16. Jousset: Inaug. diss., Paris, 1908.

17. Thom: Tuberkulose Ansteckung unter Eheleuten, *Ztschr. f. Tuberk. u. Heilstättenwesen* 7:12, 1905.

18. Turban: Beiträge zur Kenntniss der Lungen-Tuberkulose, 1899.

ent. Of the twenty-two surviving consorts, seventeen were men and five women. In these twenty-two, tubercle bacilli were present in twelve of the widows and widowers. The period of illness extended from four months to twenty years.

Of course, it is to be borne in mind that my investigation dealt only with the poorer classes. I have not included in the forty-four any cases in which, for instance, there was dulness with suppressed breath sounds or even bronchovesicular breathing at one or both apexes and a vague history of pleurisy or other mild symptoms, but no moisture. No doubt many of these were tuberculosis carriers, yet not clinically open cases of tuberculosis; but no doubt, they were open cases part of the time. Had I considered these, the percentage would be still higher.

That there are these carriers among us is shown by these private cases:

REPORT OF CASES

CASE 1.—A physician, aged 62, widower, weight 190 pounds, who had never been sick except that he had pneumonia at 25, who had been married twice to apparently healthy wives both of whom had died of tuberculosis, finally submitted himself to an examination. He was a well developed man. Over the left apex there was dulness and a few moist crackles after he coughed. There was no history of hemorrhage or expectoration. He suffered a severe attack of influenza in the recent epidemic, but made a good recovery.

CASE 2.—A widow, aged 28, had married at 19 a man who coughed and who had lost a sister of tuberculosis. He weighed 212 pounds at marriage, but lost 50 pounds in four months and died of tuberculosis two years before I saw her. The widow's family history was good. She had never been sick until her first baby was born in 1912 when, because she was catching colds often, she was advised to take what the physician termed a protective course of tuberculin. No doubt, she was having symptoms then. She had been coughing the past year and had lost 20 pounds. Six weeks ago, she was accepted by an old line life insurance company for \$10,000 ordinary life insurance. She did not expectorate except when she had a cold, but her sputum had never been examined at that time. She had persistent râles after cough; expiration was prolonged over both apexes, and the whispered voice was exaggerated over the same area. At the right base there was a definite pleuritic rub.

COMPARISON OF FINDINGS

My findings are in accord with those of most investigators. If we take the normal incidence to be 2.7 per cent. among all classes, we do not find anywhere in the literature so low a percentage in the consort of the infected husband or wife.

When I first entered dispensary work, I was rather prejudiced in favor of the theory of the nonexistence of conjugal or adult infection; but after working a number of years among this class of patients, I was impressed not by the rarity of tuberculosis in husband and wife, but by the fact that it was a rather common occurrence and as a result made the foregoing investigation, not of selected cases but of successive cases coming to the dispensary in the year 1918 and the early part of 1919.

CONCLUSIONS

1. I have found the incidence of marital tuberculosis to be 8.76 per cent. When a consort dies, the mate has been infected in 50 per cent. of cases.

2. There is such a thing as adult infection. We should constantly bear this in mind in our advice to the layman.

3. It is evident that when there is a continued massive infection over a period of years, and especially

when the consort dies, in these last years patients are especially careless and slovenly, and there is not only a possibility of contagion, but in one out of every two cases active tuberculosis supervenes.

4. My investigation covered only dispensary cases. In private practice the incidence of marital infection is smaller, proving that intelligent prophylaxis is worth while.

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CALCULI IN THE SALIVARY DUCTS

REPORT OF FIVE CASES *

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Calculi which form in the ducts of the salivary glands or in the glands themselves possess considerable clinical interest by reason of the peculiar train of symptoms, the infrequency of the lesion, and the necessity of a correct diagnosis. Unless the possibility of this condition is always borne in mind, and a careful diagnosis made, there will be numerous instances in which a totally unnecessary operation on the neck will be performed without relief of the symptoms. In one of the cases reported herewith, such a futile operation was performed despite the suggested diagnosis of calculus; and in two of the other cases, surgeons of equal or greater experience than myself were heartily in favor of a dissection of the submaxillary region for supposed lymphadenitis.

If this lesion is borne in mind, a careful history of the symptoms and a visual examination of the mouth of the duct, with a digital exploration of the floor of the mouth and buccal cavity, will in every case point strongly to the diagnosis. The roentgen-ray naturally suggests itself as the best method of diagnosis; but unfortunately it is not, and the results are very disappointing. In any event, the surgeon would first make the tentative diagnosis before a roentgenogram is made, and even its positive findings would only be corroborative evidence. As a matter of fact, the roentgen-ray report is all too often negative, when operation proves the presence of calculus. The explanation frequently given is that the calculus was lacking in material which would cast a shadow, but this is manifestly not so in any of our cases, as the accompanying illustrations show. The true explanation in most cases is that the technic of making pictures far back in the submaxillary and parotid regions is very far from perfect, and the reason that the roentgenogram is reported negative is that the lesion was never reached.

A technic intended to overcome the difficulties of the situation has been suggested by M. Arcelin.¹

Analyses of many different salivary calculi show that they contain both organic and inorganic matter; the nucleus is usually organic: organic matter, approximately 25 per cent.; calcium phosphate, approximately 60 to 65 per cent.; calcium carbonate, approximately 6 per cent.; with traces of iron, magnesium, etc.² They are usually oval or olive shaped if formed in the duct; but round or irregular if formed in the gland. The color is gray or yellowish usually; the consistency variable from hard to soft. The surface is more often

* From the Second Surgical Division, New York Hospital.

1. Arcelin: *Lyon méd.* 118: 769, 1912.

2. Prouzerque, R.: *Arch. de méd. et pharm. mil.* 58: 125, 1911.

rough than smooth and may be grooved longitudinally. When multiple the stones may be faceted. The average weight of the calculi is from 5 to 20 gm.

REPORT OF CASES

CASE 1.—*Salivary calculus; right submaxillary; removal from Wharton's duct by incision in floor of mouth.*

History.—Walter T.,³ English, aged 31, stable groom, admitted to the Presbyterian Hospital, Sept. 21, 1904, and discharged, Oct. 14, 1904, three weeks before, while eating, had experienced pain in the right side of the "throat," and noticed a "bunching up" or fulness below the angle of the jaw on the right side. Between meals there was no pain and the swelling became smaller, but every attempt to eat solid food caused an attack of pain and swelling.

Examination.—There was a lobulated swelling in the right submaxillary region. In the floor of the mouth there was a rounded, fluctuating swelling opposite the last two molar teeth. No roentgenogram was taken in this case.

Operation and Result.—September 27, under the mistaken diagnosis of suppurative cervical lymphadenitis, a dissection of the right submaxillary region was made by one of the surgeons. No abscess was found; but a portion of the enlarged and inflamed submaxillary salivary gland was excised. There was no relief from symptoms after this operation, and October 10, I inserted a probe into Wharton's duct to a distance of 4 cm., recognized the sharp click of a calculus, and on opening the duct at this point under local anesthesia, removed a calculus, the size of a small cherry pit (Fig. 1). Four years later, the patient was perfectly well and had had no return of any symptoms.

Comment.—A possible etiologic factor in this case was an alcoholic habit with neglect of mouth cleanliness, although there was no pyorrhea. Also as a groom about the stables, the patient had been in the habit of chewing grain and straws, a particle of which may have entered the duct and acted as a foreign body nucleus.

CASE 2.—*Salivary calculus; left submaxillary; removed from Wharton's duct through floor of mouth (Fig. 2).*

History.—Paul T., aged about 24, born in the United States, soldier, admitted to the hospital, Dec. 23, 1918, had had no previous attacks of a similar trouble. The present illness began about ten days before with a painful swelling in the left submaxillary region. Both pain and swelling were made worse by chewing food.

Examination.—There was a swelling of the left submaxillary gland; and in the floor of the mouth there were elevation and thickening along the course of the left Wharton's duct, with swelling and redness of the papilla.

Operation and Result.—The floor of the mouth was cocaineized, and with some difficulty a whalebone filiform bougie was passed into the duct encountering obstruction at a distance of about 3 cm. The duct was then split open along the probe, and a calculus 1 cm. long was delivered with a small spoon curet. After this there was immediate relief and a rapid subsidence of the swelling of the submaxillary gland. Attempts to roentgenograph this suspected calculus, dental films being used on the floor of the mouth, had been unsuccessful, nor was it definitely palpable with a finger in the mouth.

CASE 3.—*Salivary calculus; left submaxillary; removal from Wharton's duct through floor of mouth (Fig. 3).*

History.—E. R. S., aged 42, born in the United States, clerk, referred to me by Dr. McCastline, and treated in the office, had had attacks of severe pain in the "throat" for from five to six years while eating, accompanied by swelling at the angle of the jaw. The pain was described as of a gripping nature, and there was a sharp pricking sensation along the base of the tongue on the left. Occasionally, he obtained relief by squeezing the floor of the mouth and expressing a "little white plug," after which the pain and swelling would subside. His teeth had been very bad for years. He had

pyorrhea alveolaris, and at the time of examination many teeth were absent and bridges had been inserted.

Examination.—There was a moderate swelling of the left submaxillary salivary gland, which was quite tender to pressure. In the floor of the mouth, well forward near the sublingual caruncle, there was a red, tender elevation which was distinctly fluctuating; no stone could be felt, however. Procaïn was injected over this area and an incision opened the distended Wharton's duct, permitting the escape of purulent material and a pyramidal calculus measuring 1.3 cm. in length. There was no opportunity for an attempt at securing a roentgenogram in this case. The relief was great and prompt, and the patient has remained well.

CASE 4.—*Salivary calculi (multiple); right submaxillary; removal of two calculi at two operations, from Wharton's duct (Figs. 4 and 5).*

History.—Emil G., Italian, aged 20, carpenter, admitted to the New York Hospital, Oct. 4 and Oct. 30, 1917, had had an attack four years before similar to the present, lasting about three days, but had had no trouble since then until eleven days before admission. While eating he felt pain in the right side of his throat and noticed a swelling below the jaw. This pain and the swelling subsided between meals, but promptly recurred when he ate solid food.

Examination.—There was a moderately enlarged right submaxillary gland. In the floor of the mouth, there was elevation along Wharton's duct; the sublingual caruncle was swollen and reddened, and by pressure over the duct some pus could be expressed.

Operation and Result.—October 4, a whalebone filiform bougie was quite readily passed into Wharton's duct for a distance of 7.5 cm., which must have carried it well back to the gland itself; but while the probe was being passed there was encountered some slight obstruction at a distance of 3 cm. After local anesthesia had been secured, the duct was split open along the probe and a yellowish, laminated calculus was removed measuring 5 by 3 by 3 mm. (Fig. 4).

The patient was readmitted three and one-half weeks later for a recurrence of the same train of symptoms. He stated that after the operation he was relieved for about five days, after which the pains and swelling at meal times recurred. October 30, under local anesthesia, the right Wharton's duct was again incised opposite the last molar tooth and a calculus of the same color and consistency as the first was removed, but it was more than twice as large as the first and measured 1 by 0.5 cm. These two calculi seemed to fit together very well, as if they had originally been parts of one calculus, and yet it is difficult to see how any trauma sufficient to break the calculus could have occurred at the first operation. Four months after operation, the right submaxillary gland was still very slightly larger than the left. The saliva seemed to be discharged in the floor of the mouth at the side of the tongue where the duct had been split open. One and one-half years after operation, the patient was free from all symptoms.

CASE 5.—*Salivary calculi (multiple); right parotid (Fig 6).*

History.—Aaron B., aged 52, Russian storekeeper, admitted to the New York Hospital, April 20, 1916, and discharged, April 29, had been under dental treatment for pyorrhea alveolaris for the last five months; the teeth had been in very bad condition. Four months before admission he first noticed a swelling of the right parotid region which was very painful at times and seemed to vary in size. He had experienced a feeling of dryness in the right side of the mouth. For the last week the swelling and pain had been very much worse and constant, and he could not open his jaws.

Examination.—There was a very marked and tense swelling of the whole right parotid gland. In the buccal surface of the right cheek, the opening of Stenson's duct was found to be pouting and reddened and giving exit to creamy pus on pressure on the cheek. The whole tract of the duct felt indurated, but no definite calculus could be detected. A roentgenogram on a dental film placed inside the cheek showed a suspicious shadow of a small calculus.

Operation and Result.—April 20, a whalebone filiform bougie was passed into the right Stenson's duct and a gritting

3. This case was reported by the author in the Annual Report of the Presbyterian Hospital in the City of New York, 1906.

sensation was encountered at 3 cm. Under local anesthesia the duct was split open back to this point, but no calculus could be found. The symptoms persisted, and another effort was made to find the stone, April 24; but at this time there was still so much edema about the duct orifice that no probe could be inserted. April 24, a general anesthetic was given and a horizontal incision was made in the right cheek, exposing the dilated duct, but on palpation no stone could be felt, with the duct directly between the fingers. As it was not deemed wise to open the duct through the cheek, a loop of silk was passed about the duct, and the ends of the loop were pushed into the mouth through the buccal mucous membrane. The external wound was then closed by suture. The buccal surface was then exposed, and with the aid of the traction loop of silk the duct was easily drawn into view and a long incision made into it. A small curet was inserted, but no stone was found.

In this case, as the event showed, the multiple stones had evidently slipped well back into the parotid gland at this time.

On the third day after operation, the patient passed a small soft calculus about 3 by 4 mm., which specimen, unfortunately, was lost. On the sixth day after operation, while eating, he passed a second small and harder calculus about the same size, which is shown in Figure 6. After this there was a remarkably rapid abatement of the swelling, and complete disappearance of all symptoms. The patient remained entirely well during the six months that he was followed.

FREQUENCY OF THE CONDITION

From the various monographs on this subject and collection of case reports, it is fair to conclude that the lesion is rather rare. In 1890, Czygan collected from the literature the reports of about seventy cases. Futterer later raised this number to 160; Roberg⁴ reviewed 207 cases; and from my own search of reports, I have found enough to make approximately 300, which will very fairly represent the total of cases reported up to this time. The French seem to have encountered or reported these cases more often than any other people.

SITE OF THE LESION

In about two thirds of all reported cases, the calculus has been found in Wharton's duct or in the submaxillary salivary gland. In about 20 per cent., Stenson's duct or the parotid gland has been the site. Only in a considerably smaller number has the sublingual gland been involved. Certainly they occur very much more frequently in the ducts than in the glands.

ETIOLOGY

They usually occur in middle life; only one case is reported as occurring in infancy. The great preponderance of cases are in the male. As the result of inflammation of the duct, concretions may form about masses of bacteria, or salivary corpuscles, and very rarely about foreign bodies, e. g., bits of tartar. Foreign bodies which have been found occasionally occluding a duct include bristles from a tooth brush, bits of grain, and seeds. The lack of mouth cleanliness, and especially pyorrhea with tartar formation,

afford the most likely source of duct irritation and inflammation.

SYMPTOMS

The classical picture of "colique salivaire" of the submaxillary region is that of intermittent swelling of the salivary gland, or of the duct behind the stone, accompanied by sudden severe pain in the floor of the mouth, tongue and side of the throat, all of which occurs during meals or may be excited by the mere sight of food. This tumor persists until there is a sudden discharge of saliva, which in a case reported by M. Reverchon would spout a jet of saliva, occasionally at meals, to a distance of from 30 to 50 cm. In some cases such a history runs back over a period of ten years or more; but in such cases the diagnosis should be very easily made. In many other cases the history is short, of a few months, or a few weeks or even of only a few days.

Cases which apparently start so acutely usually represent the intercurrent of an acute infection of the duct or gland and may be ushered in with acute swelling of the gland, with fever and much local inflammation; and it is here that the diagnosis becomes more difficult.

Pain is always more considerable when the stone is in the duct than when it is embedded in the gland. The general nutrition may suffer markedly because of the dysphagia. Purulent catarrh of the duct and even actual abscess about the duct is not uncommon. The enlargement of the gland due to the salivary stasis is usually of a chronic inflammatory character, resulting in connective tissue formation and atrophy of the gland cells; and only rarely is there actual

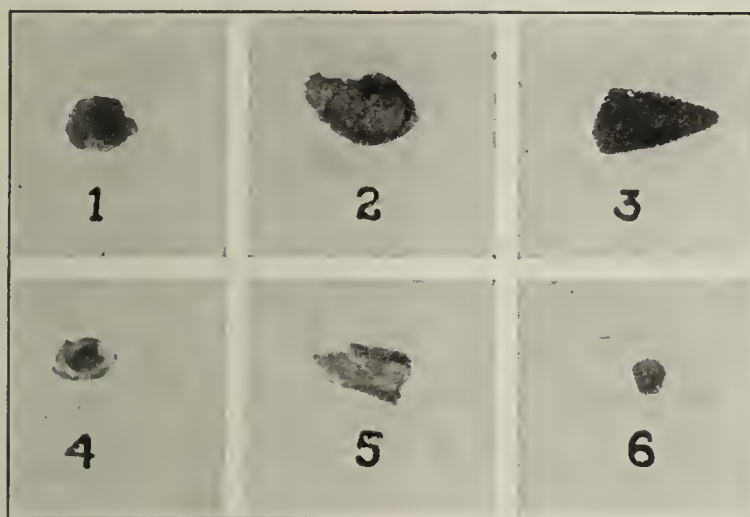
suppuration in the gland itself, although it may remain permanently enlarged. Discharge of the stone into the mouth as the first symptom has been rarely reported.

DIAGNOSIS

A number of these patients present themselves to dentists believing that the swelling and pain near the jaw are due to the teeth. And, indeed, an alveolar abscess may be suspected. More of the acute cases are likely to be diagnosed as cases of suppurative lymphadenitis, and treated by external incision. In the cases of chronic enlargement of the gland, malignancy may be suggested.

Examination of the floor of the mouth or cheek will usually show some change at the exit of the duct, a purulent discharge or swelling and redness. There may be a visible swelling along the course of the duct, or bimanual palpation may reveal a cystic mass or even the actual presence of the calculus. In my experience with Wharton's duct, the stone is very likely to be found rather far back, about opposite the last molar tooth.

Probing the duct requires some application and perseverance, but may yield the convincing sensation of "gritting" against the stone. I have found that a whalebone filiform bougie is well adapted for this pur-



Salivary calculi (actual size): 1 to 5 removed from Wharton's duct; 6 removed from Stenson's duct.

4. Roberg, O. T.: Sialolithiasis, *Ann. Surg.* **39**, May, 1904; abstr. *J. A. M. A.* **42**: 1662 (June 18) 1904.

pose and likely to be more readily obtainable than the very small metal probes which would be necessary.

TREATMENT

After local anesthesia of the vicinity of the duct, one of two methods may be used: First, a probe is inserted and the duct split back as far as may be necessary to deliver the calculus, which may require a spoon curet. Second, a direct incision may be made through the mucous membrane and into the duct at the site of the previously located stone, or into the distended duct behind the stone, or on a probe in the duct.

In the event that the stone has slipped back and cannot be found, the splitting or incision of the duct may permit of its spontaneous delivery within a few days, without further intervention.

Mathews⁵ says that one should be on the lookout for multiple stones, which were present in two of the six cases that he reported, and in two of our cases.

Results are very satisfactory if the obstruction is found and removed, and recurrence is very rare unless a bit of calculus has been left in situ. External incisions are seldom if ever indicated, and are to be avoided.

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RHINOPHYMA

A CURE BY A PLASTIC OPERATION WITH A GOOD COSMETIC RESULT

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Operative removal of rhinophymas has not offered much encouragement to surgeons, judging from the meagerness of the reports on the subject in the literature. The lobular nature of these tumors, with broad bases requiring extensive denudation for removal, and the difficulty of obtaining a satisfactory cosmetic result, without prominent scarring, are factors that have been largely responsible for the discouragement.

My patient was no exception. He had had this disfiguring mass for more than fifteen years. During that time he had consulted surgeons frequently concerning its removal, but none, as he put it, "cared to tackle the job."¹

As can be seen in the accompanying illustrations, the base of the tumor occupied the lower third of the nose, anteriorly and laterally, while the tumor itself protruded forward and downward. To me it offered hope of removal with a reasonably good cosmetic result. I felt that the man was so disfigured by the tumor that he had little to lose. His confidence was encouraging, so we decided to assume the risk together.

REPORT OF CASE

History.—M. G., man, aged 43, single, dated the initial change in the tip of the nose to his tenth year, when, he said, the end of the nose was severely lacerated by a dog bite. He did not recall whether or not there was infection present at that time. At 11 or 12 years, the patient had facial erysipelas

involving the cheeks, eyelids and nose. This attack kept him in bed for two weeks. During his youth he sustained several bad blows and falls involving the nose.

Two and a half years before we saw him he had had a second attack of facial erysipelas. The venereal history presented nothing of interest in relation to the local condition.²

Physical Examination.—The patient was of medium build and, aside from the nasal tumor, apparently without lesions, deformities or organic disturbances. There was a globular tumor about 1¼ inches in diameter, almost a perfect sphere, with a base almost as broad as the diameter of the mass, and extending upward on the anterior surface to the junction of the middle and lower thirds of the nose, and laterally to the anterior borders of the alae nasi. Chronic acneform lesions (comedones and sebaceous cysts) dotted the skin over the entire tumor surface and involved the skin of the rest of



Fig. 1.—Lateral aspect of the tumor.

the nose and the adjacent parts of the cheeks. These lesions are evident in the illustrations. The skin of the tumor was leathery and firmly attached, but of normal color.

Operation and Results.—One-quarter grain of morphin, with ⅛ grain of atropin, was given forty-five minutes before the operation. The entire face was cleansed with naphtha to remove the excessive sebum, and subsequently wiped with 95 per cent. alcohol, followed by ether. A sterile dressing was applied and left in place until the patient was brought to the table. The skin, including the forehead, nose, cheeks and upper lip, was then painted with 2 per cent. iodine. The surface deposit of iodine was wiped off with 95 per cent. alcohol. Twenty-five per cent. argyrol was dropped in the eyes and nostrils, and the mouth was painted with the same solution. Moist, sterile towels were draped over the

5. Mathews, F. S.: Submaxillary Calculi, Ann. Surg. 63: 140 (Feb.) 1916.

1. The patient was referred to me by Dr. Daniel O'Leary, of Newburgh, N. Y. Dr. O'Leary and I had intended to operate on this man at Newburgh but owing to Dr. O'Leary's disability, by reason of an infected finger, he sent the patient to New York, fearing that he would change his mind about being operated on.

2. The history of repeated traumas and infection is of value only in the vague sense in which are associated repeated irritation and tumor growth.

surrounding areas, and the patient was instructed to breathe through the piece of sterile gauze placed over the mouth. Two per cent. procain was infiltrated at the alae, columella and across the nose above the tumor.

A U-shaped flap was made above, beginning at each ala and including about one-half inch of the skin on the superior surface of the tumor mass. An inverted U-shaped flap was made on the inferior surface of the nose, including the skin of the entire inferior surface of the tumor. The ends of the two U-shaped incisions were made to meet at each alar crease. The flaps thus outlined were dissected off the tumor with considerable difficulty, both because of the leathery quality of the skin itself and because of its firm attachment, or rather inclusion in the tumor. The skin flaps having been freed, the tumor was dissected in a wedge-shaped manner from the underlying nasal cartilage. There was considerable fibrous tissue in the tumor and no distinct differentiation between the tumor and nasal structure. The dissection was rather difficult on account of these conditions. Considerable bleeding of both arterial and venous character was encountered. This was controlled by suture-ligatures of fine catgut. The inferior flap proved one-fourth inch too large and was trimmed to fit

after the first application of this acid had completed its good work is shown in Figure 3. The whiter, smoother areas represent the portions thus treated. This treatment was repeated until all areas of the nose had been smoothed out, and the

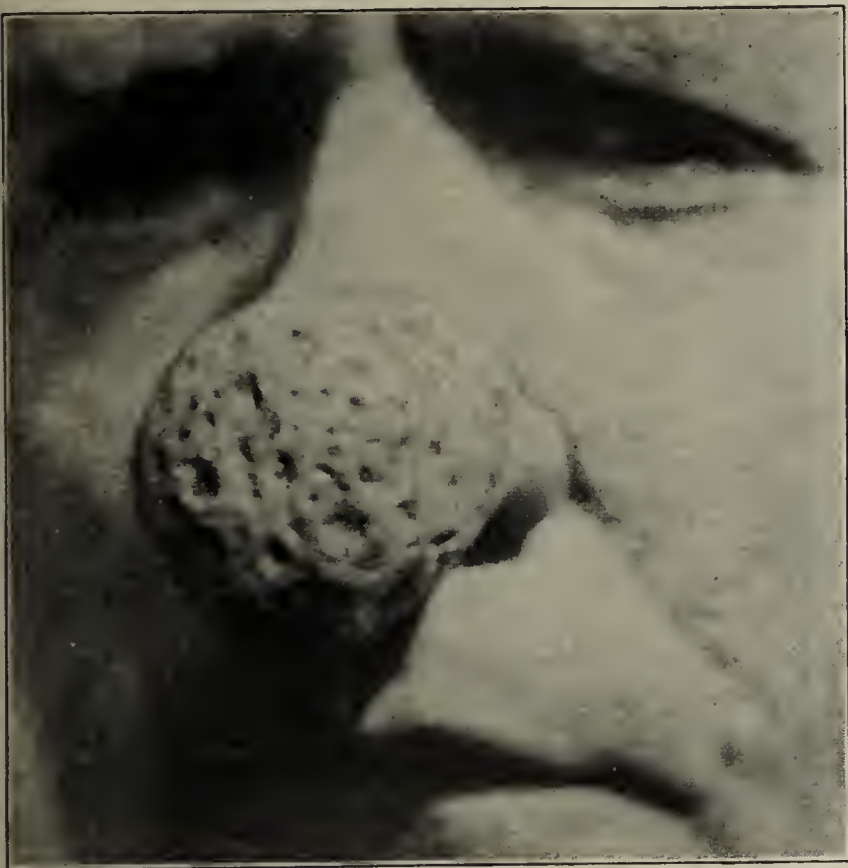


Fig. 2.—Anterior aspect of the tumor.

the upper flap. The lower flap was rolled up over the edge of the nose so that the suture line ran directly across the anterior surface of the nose from ala to ala. The upper flap was very difficult to adapt to the new contour, as it had stood out at a right angle to the anterior nasal line during the long period that it had performed the function of covering the upper surface of the tumor. The adaptation was begun by fastening it at its center to the center of the lower flap and then adapting the sides by trimming and scoring the edge, fitting and refitting several times, until the best possible approximation was obtained. In this way a rather well-shaped nose was molded out of very discouraging material. Interrupted sutures of fine silk were used. These were removed on the fourth day. The tension was relieved by sterile adhesive straps. The result one month subsequent to operation is shown in Figures 3 and 4.

The wound healed by primary union and the patient left the hospital on the tenth day. Aside from slight redness and the prominence of the sebaceous gland orifices, the nose had the appearance of a normal organ. The problem of improving the condition of the skin was discussed in consultation with Dr. Fred Wise. Dr. Wise suggested the use of 50 per cent. trichloroacetic acid, applied periodically, until the higher prominences of the skin were leveled. The appearance of the nose



Fig. 3.—Lateral aspect after plastic operation.

result is most satisfactory. Four applications were made in all. Subsequently, exposures of the roentgen ray at three week intervals were given with the idea of further improving the condition of the skin and keeping in abeyance any tendency to recurrence of growth in the tissues treated.

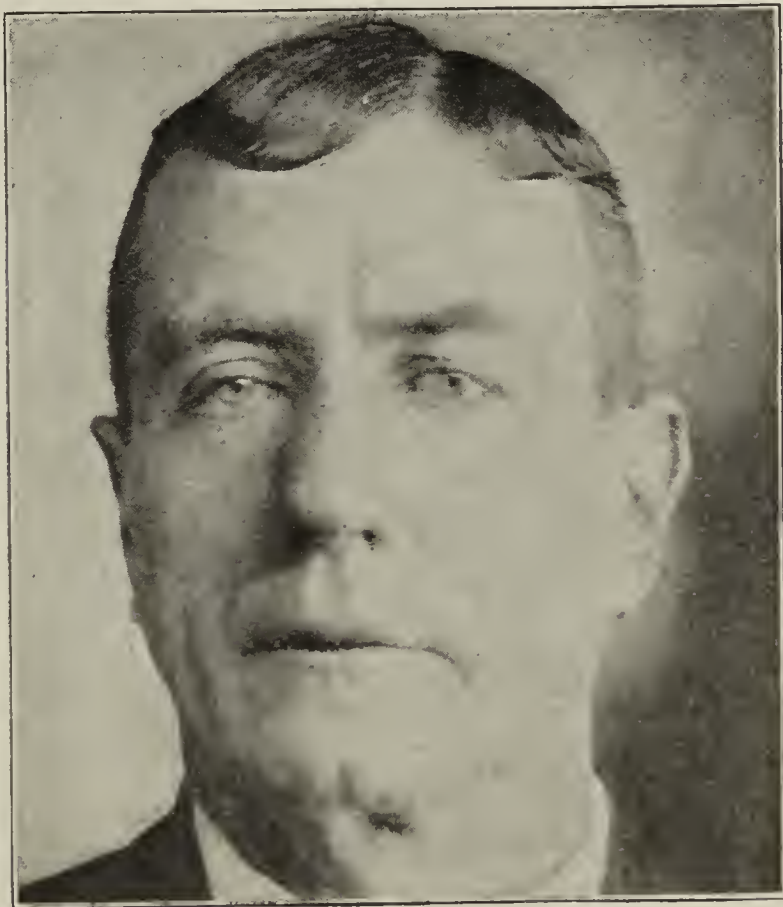


Fig. 4.—Front view after operation.

PATHOLOGY

According to the best dermatologic opinion, rhinophyma is a further developmental stage of acne rosacea. Because of the persistent hyperemia and

irregular periodic aggravations, the vessels become permanently enlarged. A hypernutrition of the skin results. The sebaceous glands hypertrophy first as gelatinous nodules, later becoming fibrous. Acne lesions are sometimes superadded. The markedly hypertrophic forms are due to new connective tissue growth, amounting to a real hyperplasia. Follicular suppuration with new connective tissue formation results in distention of the veins, so that they amount to actual sinuses. In this case the prominent pathologic features were the marked acneform lesions of the surface (comedones and small sebaceous cysts), the excess of fibrous tissue rendering the mass firm and elastic, and the prominence of the blood vessels, particularly the veins.

The result has been most satisfactory to the patient and to me, and there is no reason to believe that the nose will not remain in its present good condition. The illustrations reveal more clearly than any description the complete change in the physical appearance of the face. The condition of the skin has improved greatly since that represented in Figure 3, as a result of the trichloracetic acid treatment.

COMMENT

To me this case demonstrates the desirability of attempting something for the improvement of conditions of this type. It is impossible to estimate the good effect of the result on the patient's mentality and outlook on life, to say nothing of the physical betterment.

24 West Fifty-Ninth Street.

HYPERTRICHOSIS

REPORT OF CASE

ANDREW J. GILMOUR, PH.D., M.D.

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NEW YORK

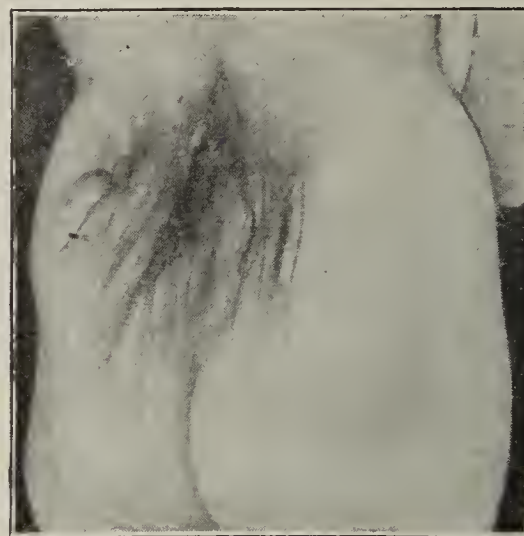
Hypertrichosis is either an abnormal or an excessive growth of hair. In some cases the hairs may be increased in size; in others, the number of hairs may be increased, or both conditions may be present. This abnormality may either be referable to the location on the patient's body or dependent on the age or sex of the individual. There may be either a racial or a family predisposition to this condition. Brunettes are more prone to hypertrichosis than blondes.

This anomaly is classified as acquired and congenital. The acquired type is generally not an extensive condition; it may be universal or partial—usually the latter. An example of the partial is the growth of a beard on a female subject. The congenital condition is comparatively rare. An example of the universal type was Jo Jo, the dog-faced boy, whose face resembled that of a terrier and whose body was covered with soft hair. The congenital variety is usually of the partial type, and often manifests itself as a hairy pigmented nevus. A favorite location for this is at the lower end of the spine over the sacrum. The case here reported is of the congenital partial type.

It is unusual in that so far as macroscopic examination can determine, the hair is growing from perfectly normal skin, indistinguishable from the adjoining skin where the hair is present.

REPORT OF CASE

M. S., woman, aged 30, housewife, married, Italian, with negative family history, was born with a growth of soft hair a few inches long, situated over the small of the back. This hair gradually increased in length and became coarser, so that it is now similar to the hair of the head, though the texture of this hair is a little softer. The color is the same as that of the head, a dark brown. The hair is growing from a perfectly normal skin; there is no pigmentation; no hypertrophy of the skin or other sign of nevus is present.



Area of hypertrichosis.

For the last eight or ten years the patient has cut off this hair about every twelve months. The hair now present is 8 inches long and has been growing for one year. The growth has never been much longer than at the present time. The area covered by the hair has a diameter of from 4 to 5 inches.

The condition described was accidentally discovered while the patient was being given an intramuscular

injection of mercuric salicylate for syphilis. A roentgenogram of the lower end of the spine is negative. The patient is of a highly neurotic type.

133 East Fifty-Seventh Street.

Clinical Notes, Suggestions, and New Instruments

A NEW BLOOD COAGULOMETER*

GEORGE KING, M.D., AND H. A. MURRAY, JR., M.D., NEW YORK

Authorities on blood coagulation, including Howell, Morawitz, Lee and Hurwitz,¹ have asserted that only clotting tests in which the blood is collected by venipuncture can be depended on to give reliable results. Blood taken from a finger prick is unavoidably mixed with more or less tissue fluid, which apparently precipitates the clotting process even in cases in which the power of the blood to form a gel is known to be impaired. Therefore, it seems that if tests made in this way are relied on many hemorrhagic conditions will go undiagnosed. Not long ago there was a "bleeder" in the wards of the Roosevelt Hospital who repeatedly gave a normal clotting time with blood drawn from finger stabs. Although hemophilia was suspected, it was only when venipuncture was resorted to that confirmatory evidence of this disease was obtained.

Last spring in doing some work which involved clotting determinations, we had occasion to study this subject. It was found that in 1911, Solis-Cohen had summarized the results of more than thirty different tests reported in the literature.² But because in all of them blood from finger pricks was used, they had to be disregarded and attention directed solely toward procedures calling for venipuncture. We tried the more suitable ones described in various publications and also had the opportunity to interrogate Professor Howell, who

* From the Laboratories of Surgical Research, Columbia University College of Physicians and Surgeons.

1. Howell W. H.: The Condition of the Blood in Hemophilia, Thrombosis and Purpura, Arch. Int. Med. **13**:76 (Jan.) 1914. Morawitz and Burich: Arch. f. exper. Path. u. Pharmacol. **56**:115, 1907. Lee, R. I., and White, P. D.: Am. J. M. Sc. **145**:495, 1913. Hurwitz, S. H.: Am. J. M. Sc. **154**:689 (Nov.) 1917.

2. Solis-Cohen, Myer: The Coagulation-Time of the Blood as Affected by Various Conditions, Arch. Int. Med. **8**:684 (Nov.) 1911; ibid **8**:820 (Dec.) 1911.

admitted the uncertainty of prevailing methods. As an example, he told how on one occasion blood drawn by venipuncture into a hypodermic syringe containing a few drops of physiologic sodium chlorid solution, and then divided equally between two similar test tubes, had clotted ten minutes faster in one test tube than in the other. At the Presbyterian Hospital, New York, the coagulation time of the blood is usually tested by allowing it to drop freely into a paraffin-lined test tube from a Luer needle introduced into the median basilic vein. The instant at which the tube may be completely inverted without dislodging the clot is considered the end-point. Normal figures by this method have been found to vary from four to twenty-seven minutes.

In our own experiments, we were not able to attain conformity of results with any methods examined, no matter how carefully the instructions were followed. The tube pictured in the accompanying illustration was then devised, and has given more consistent findings in our hands than have other procedures. The tests were performed largely on dogs, whose blood is very readily collected by puncture of the external saphenous vein. In more than thirty tests, with one exception, all the samples of blood from animals in apparent good health clotted in between nine and twelve minutes. The average was ten and one-half minutes. Any technic, however, seems to be relatively accurate when employed repeatedly by the same man, particularly when that man has devised the test himself. The sense of proprietorship apparently calls for thoroughness and devotion to detail which finally leads to a technical precision impossible under less stimulating circumstances. To avoid this possible personal element and properly to subject this instrument to trial, tubes were distributed among a few hospitals and tested without any special care or previous experience by various interns and medical students. The tubes were accompanied by these instructions:

METHOD FOR TESTING COAGULATION TIME OF THE BLOOD

The coagulometer to be used is composed of the following separate parts:

1. Glass tube, length 9 cm., inside diameter 9 mm. (A line to indicate the level taken by 2 c.c. of fluid within the tube is etched on the glass.)

2. One-way stopcock.

3. Luer needle with wire inserted, length 1 inch, gage 20. (These may be purchased from James W. Dougherty, 413 West 59th Street, New York City.)

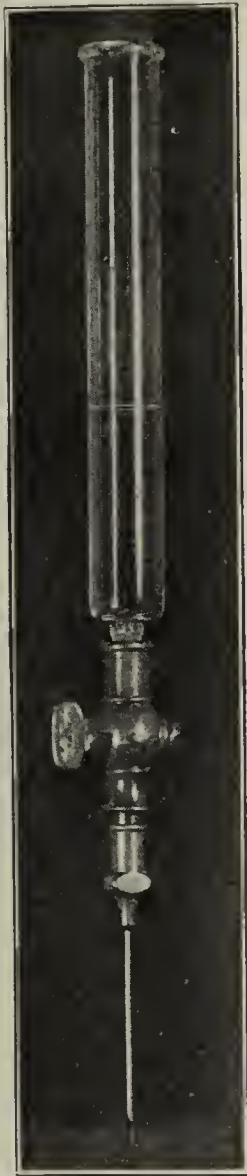
A. *Preparation of Coagulometer.*—The tube is thoroughly cleansed with potassium dichromate cleaning mixture and then rinsed out with water, alcohol and ether in the order named. When it has become absolutely dry its upper wide open end is plugged with cotton. (The cleansing is usually done immediately after a test, and the tube kept in a glazed envelop or desiccator ready for use. It is important that the inner surface of the tube be smooth and absolutely clean, as little specks of dust make a difference in the clotting time.)

After the Luer needle in a test tube has been sterilized in the autoclave, attach it to the stopcock and the latter to the glass tube. Open the petcock. The coagulometer is now ready for use.

B. *Procedure.*—The skin overlying the vein of the patient to be punctured is sterilized with iodine. (One of the veins at the elbow is usually selected, and in that case the arm of the patient is hung over the edge of the bed.)

Put in plain sight a watch with a second hand, and note the time of applying the tourniquet. After thirty seconds, enter the vein from above downward, with the stopcock of the coagulometer open. When blood first appears in the tube, record the time. During the procedure the tube is kept in a vertical position with the lumen of the needle in the direct current of the vein. (It is believed that the ease and speed with which the vein is entered is an indeterminate variable personal error of some consequence. Therefore, if there is difficulty in entering the vessel, the needle should be changed and a second attempt made with another vein.) When the blood has reached the 2 c.c. mark, shut off the flow by turning the stopcock.

Remove the instrument from the vein, separate the needle, and stand the tube with attached stopcock in a rack or vessel for six minutes. (This should be done quickly and evenly. Do not tip, twist or shake



Blood coagulometer.

the tube.) If the temperature of the room does not lie between 65 and 90 F., the tube should be kept during the test in a water bath whose temperature is maintained at about 75 F.

The coagulation time is the time elapsing to the nearest one-half minute from the instant blood first appears to the moment when the tube may be gently but completely inverted without displacing the clot from its bottom. After six minutes have elapsed, test the tube every minute until the blood shows signs of clotting; then test every one-half minute. After twenty-five minutes, if the blood has not clotted, test every five to ten minutes.

In testing, one should avoid breaking the surface clot by rough handling or extreme tipping. At first the tube need only be tipped to the slightest degree to make the fluidity of the blood clearly apparent. It should not be upset until it is quite evident by holding it in the horizontal position that it will not be disturbed by this maneuver.

After completing the test, the needle and stopcock should be cleared of fibrin threads and other matter by the use of a wire, followed by rinsing in hydrogen peroxid, alcohol and ether in the order named. If the stopcock does not turn easily after the washing, add a drop or two of xylene (xylol).

RESULTS

As was expected, the results obtained from these various sources were not uniform, but under the circumstances they were considered satisfactory. At Roosevelt Hospital, twenty supposedly normal patients were tested. The coagulation time varied from eight and one-half to fifteen minutes. The average was eleven minutes. The time in fourteen cases was between nine and eleven and one-half minutes. In three cases of jaundice the time was eighteen, twenty-two and twenty-eight minutes, respectively. Only a few results were received from the Presbyterian and Bellevue hospitals, but the time in all of these in which the proper technic was observed was between the outside limits (eight and fifteen minutes), and averaged about eleven minutes. The results from all our estimations, animal and human, show that, by this method, ten and one-half minutes may be considered the average time for clotting, with eight and fifteen minutes as the outside limits.

ADVANTAGES

The method here presented seems theoretically to allow for nearly the minimal personal error. It is simple, and practically has given rather consistent findings. The end-point, of course, is indefinite; but until the physicochemical mechanisms involved in blood coagulation are discovered, a completely satisfactory test need hardly be expected.

PREGNANCY IN THE RUDIMENTARY HORN OF A BICORNATE UTERUS

GEORGE L. BRODHEAD, M.D., NEW YORK

DeLee¹ states that pregnancy in the rudimentary horn of a bicornate uterus resembles ectopic gestation very closely, the first case being recorded by Mauriceau and Vassal in 1669, since which time more than 100 cases have been reported. The rudimentary horn may be closed at either end, making pregnancy impossible but accumulation of menses probable. Should the fertilized ovum be inserted in the small horn, there is no hope of reaching the uterus, because the connecting bridge of tissue is usually imperforate. The ovum may grow to term, but the gestation sac usually ruptures in early pregnancy, and severe internal hemorrhage follows.

REPORT OF CASE

History.—A quintigravida, aged 30, had had four normal confinements, the last of a half hour's duration. The present pregnancy had progressed to about the eighth month, the only symptom being occasional pain in the left hypogastrium. On the day of admission to Harlem Hospital, there had been slight pain in the left half of the abdomen at 7 a. m., and the patient complained of slight occasional pains up to the time of her admission at 2:30 p. m. No life had been felt for two days before admission, and the midwife who was called in diagnosed death of the fetus, for which reason the patient was referred to the hospital. At about 3 p. m. she was apparently in good condition, but at 3:15 she was found in shock, pulseless. My associate, Dr. Langrock, who saw the patient first, gave 1,200 c.c. of saline solution intravenously, but the condition of the patient when I arrived a

1. DeLee, J. B.: Principles and Practice of Obstetrics, Ed. 3, Philadelphia, W. B. Saunders Company, 1919.

short time afterward was desperate, and in a few minutes she died. Abdominal palpation revealed a fetus apparently free in the abdominal cavity, and the cervix was soft and closed. A diagnosis of ruptured abdominal pregnancy was made, and a postmortem abdominal section was performed.



Fig. 1.—Anterior view of the uterus, which is seen to the left, with the normal right ovary and tube, and the fetal sac to the right. The membranes can be seen attached to the edge of the placenta, a portion of which is visible on the extreme right. The small slit in the right side of the fetal sac is the point from which Section 2 was taken. The fimbriated extremity of the left tube is seen extending downward and to the left from the fetal sac.

Necropsy.—A large amount of blood, with the child, was found in the abdominal cavity. The child weighed 4 $\frac{5}{8}$ pounds and was dead, though showing no maceration. It was impossible to determine the exact variety of pregnancy without thorough microscopic examination of a number of sections, and this has been done for me by Drs. Strong and Schwarz of the Woman's Hospital.

Diagnosis: Their diagnosis was: uterus bicornis, with rudimentary horn and pregnancy of approximately eight months' duration in this horn (decidua in the uterus, corpus luteum of pregnancy in left ovary).



Fig. 2.—Posterior view of the uterus, which has been incised, and the small pedicle connecting it with the fetal sac. The fimbriated extremity of the left tube is again seen in the lower portion of the illustration, with the ovary just above. The fetal surface of the placenta is to the left of the depression in the middle of the fetal sac, and the umbilical cord is seen attached to the placenta at the upper left angle of the illustration.

Macroscopic Examination: The corpus uteri was asymmetrically developed and measured 10 by 5 by 4 cm. The adnexa of the right side showed no gross changes. On the left side of the uterus there was a pedicle of about 5 cm.

length and 1 cm. diameter attached to the side of the uterus at the level of the internal orifice. This pedicle connected a fetal sac of approximately 18 cm. diameter with the uterus. The ovary and fimbrial extremity of the tube of this side (left) were found attached to the fetal sac. The fimbriated extremity was perfectly free. The ovary contained a large, fully developed corpus luteum. The fetus measured 40 cm. in length, and was well preserved. The amnion showed a large lacerated opening through which the fetus with cord escaped into the abdominal cavity.

Microscopic Examination: Section 1, taken from a structure which appeared to be the round ligament, showed a lobulated muscle bundle (round ligament).

Section 2, taken from the fetal sac, showed uterine musculature with a small number of round cells and syncytial wandering cells. It also showed the decidua spongiosa without any fetal elements.

Section 3, taken from the right tube corner, showed muscular ligament tissue.

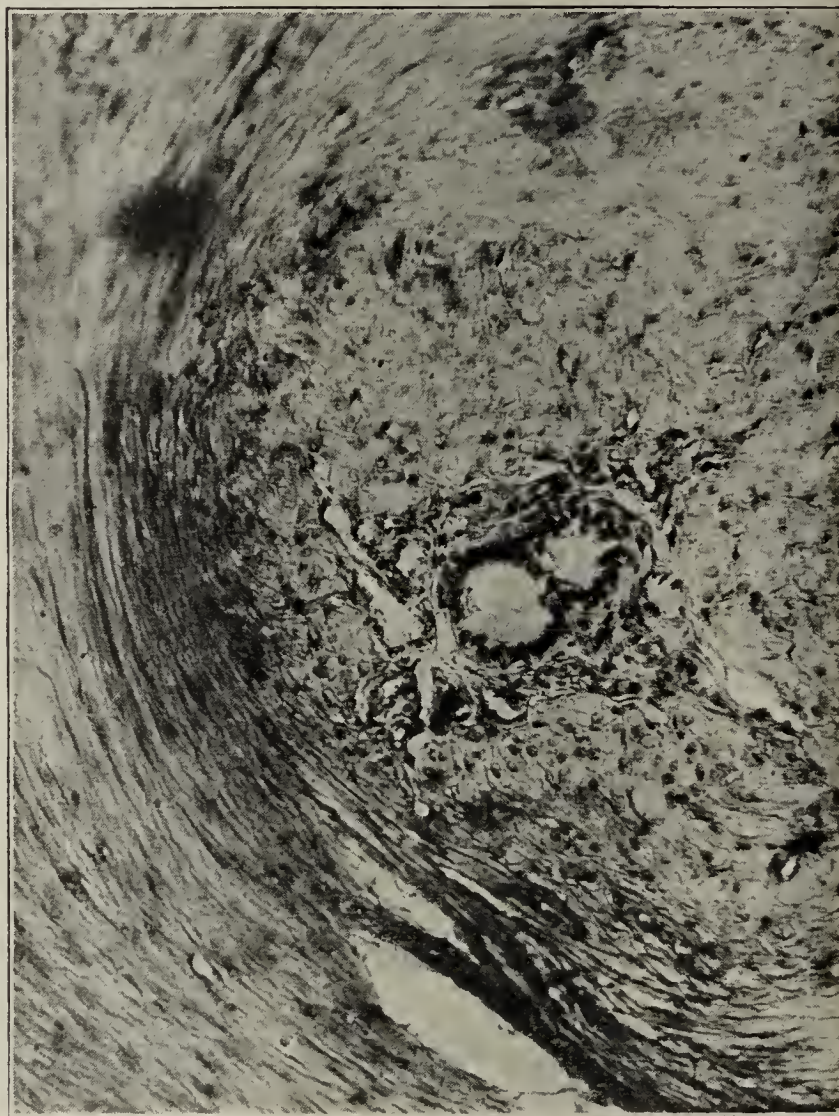


Fig. 3.—Cross-section of rudimentary horn of bicornate uterus (Section 5).

Section 4 showed the fimbriated extremity of the left tube, normal. No tube could be found on the left side.

Section 5, taken from the pedicle dissected out of its cover of broad ligament, showed three strata of smooth musculature, circular and longitudinal, the inner layer showing a marked decidual reaction. The center of this musculature layer contained a narrow circular lumen which was lined with a single row of cylindric epithelial cells.

INTERESTING FEATURES OF CASE

1. The patient had been pregnant four times in the right horn of the uterus before becoming pregnant in the rudimentary left horn.

2. The left ovary contained the corpus luteum of pregnancy and there was a well marked fimbriated extremity of the left tube, but no tube could be discovered.

3. The uterus appeared to be no larger than the usual size before pregnancy, and seemed to have developed chiefly from the right müllerian duct.

50 West Forty-Eighth Street.

FOLDING CHAIR FOR SPINAL PUNCTURE

NORMAN E. WILLIAMSON, M.D., STOCKTON, CALIF.

Pathologist, Stockton State Hospital

The chair that I described recently in *THE JOURNAL*¹ is not readily portable; and as I had to perform spinal punctures away from the operating room, I devised a folding chair that



Chair for spinal puncture, folded and open.

can be easily taken in the automobile. The inconveniences and dangers of the old method are emphasized when one has become accustomed to using the chair for spinal puncture.

At the right in the accompanying illustration the folding chair is open with half the braces in position; the other braces are set at an angle to show the method of adjustment. The chair weighs 33 pounds.

One point should be emphasized: The angle of flexion of the thighs on the pelvis when the patient is in the chair prevents any forcible movement of the thigh and assists greatly in steadying the patient.

ABDOMINOTHORACIC WOUND WITH EVISCERATION OF SPLENIC FLEXURE

FRASER B. GURD, B.A., M.D., MONTREAL

This report of a soldier who came under my care in June, 1919, is of more than usual interest, both as regards the extensive interference to which his gastro-intestinal tract has been subjected, and as regards the repair of a severe injury of the left diaphragm.

History.—Private A. G. P., aged 37, was wounded, Oct. 2, 1918, by a large shell fragment which tore through the lower portion of the left chest, destroying about 5 inches of both the seventh and eighth ribs in the axillary line. The diaphragm was torn and the splenic flexure protruded through the opening. At the primary operation performed at the clearing station, the loop of splenic flexure was opened and the pleural and peritoneal cavities were closed. This opening in the splenic flexure acted as an artificial anus until November 11, when a laparotomy was performed, the ileum divided and the distal end closed, and the sigmoid divided and proximal end closed. An end-to-end anastomosis between the ileum and the distal portion of the sigmoid was performed, with a view to short-circuiting the artificial anus.

1. Williamson, N. E.: A Chair for Spinal Puncture, *J. A. M. A.* 74:602 (Feb. 28) 1920.

November 30, the patient developed acute obstruction. At operation a large pelvic abscess was found with much matting of loops of small intestine. These were separated, and the abscess was drained. A lateral anastomosis between the ileum and the transverse colon was performed, as there was doubt regarding the free passage to the anus, and the small intestine was greatly distended. Convalescence was uneventful. The bowels moved chiefly by rectum.

Condition on Admission.—When the patient entered St. Anne's Military Hospital, June 22, 1919, his general condition as regards nutrition was fair, and his color good. Mentally he was very dull and melancholy. It seemed to be impossible for him to think of anything other than the fecal discharge from his side. With the exception of marked limitation of respiratory effort of the left side of the chest, and diminished breath sounds, examination of the chest was negative. Examination of the abdomen revealed separation of the right rectus muscle at the site of a long laparotomy incision. At this point there was bulging. In the center of the weakened area the muscle was separated 7.5 cm. Over the lower part of the left lower costal area, in the axillary line, there was a large scarred area approximately 16 by 20 cm. in diameter, in the center of which there was an elliptic scar covered by mucous membrane 10 by 7 cm. in size. On examination with the finger it was possible to enter the bowel at two points, the one opening entering the distal portion of the transverse colon, the other the proximal portion of the descending colon. Portions of the seventh and eighth ribs were apparently missing.

The patient was wearing a special corset, both for the support of the abdominal hernia and to retain the dressing over the discharging anus. Approximately one quarter of the fecal discharge escaped into the flank, three quarters being passed normally. The fecal discharge from the side was practically free from odor, and caused no excoriation of the skin.

Despite the fact that the papers accompanying the patient from England advised strongly against further operative interference, it was determined that in view of the intolerable condition in which the patient found himself, his discharge



Fig. 1.—Condition of patient before operation.

from the army in this state without some further attempt to improve his condition should not be accomplished.

Operations and Result.—August 6, an incision was made along the mucocutaneous border encircling the protruding intestine, which was dissected from the underlying tissue. The posterior surface of the intestine was found to be covered by peritoneum with the mesocolon intact. Above, the pleura was fixed to the deep surface of the protruding intes-

tine, and below, the peritoneum was likewise attached. Both pleural and abdominal cavities were opened and packed off. It was found that the mesocolon was replacing the diaphragm, and hence divided the pleural from the peritoneal

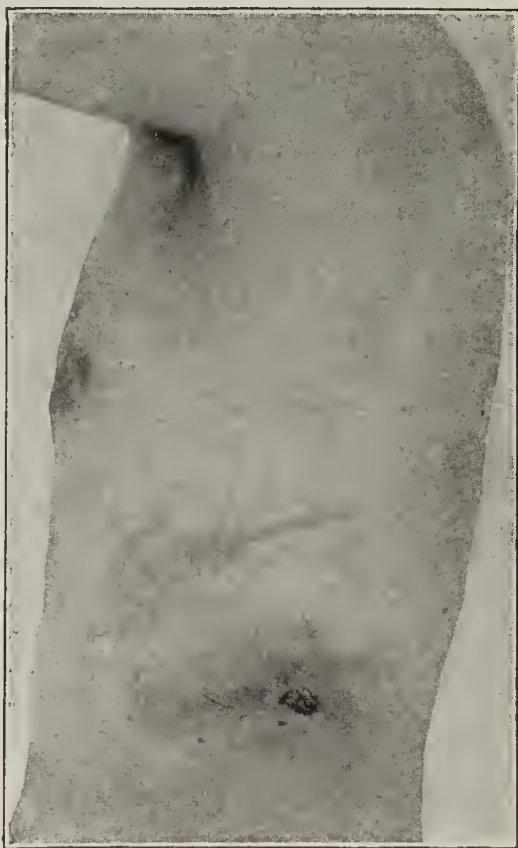


Fig. 2.—Condition of patient on discharge.

cavities. The splenic flexure was cut across, and the proximal end closed by a Connell suture and invaginated by a double purse string. The stump of the proximal colon was sutured to the parietal peritoneum. The distal segment of the intestine was pulled well out of the wound and wrapped

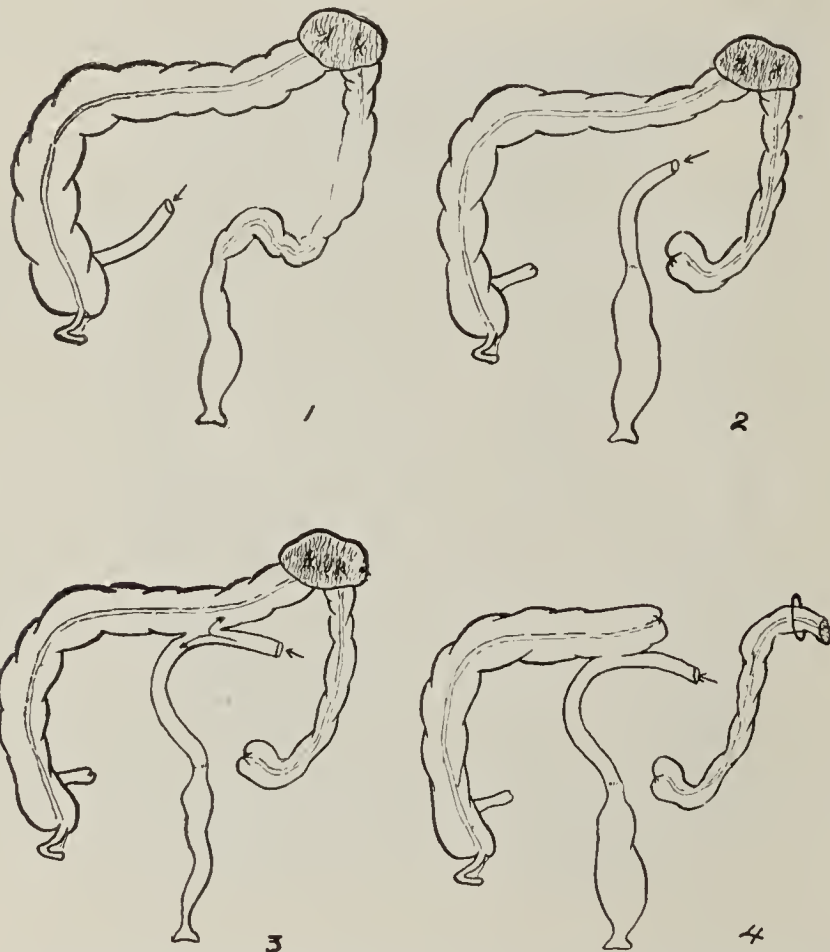


Fig. 3.—Course of intestinal contents after: (1) original wound; (2) first short-circuiting operation; (3) second short-circuiting operation, and (4) closure of artificial anus.

in paraffin gauze. The parietal peritoneum was separated somewhat from below and sutured to the cut edge of the mesocolon. The pleura was sutured to the upper edge of the mesocolon, thus reestablishing the mesocolon as an artificial

diaphragm. Poorly nourished scar tissue surrounding the original artificial anus was excised. As a result of this removal of scar, and more particularly as the result of the removal of the bowel from the opening, all sutures were found to be under great tension. In order, if possible, to prevent the breaking down of the wound and the opening of both pleura and peritoneal cavities, double No. 4 chromic catgut was passed above the fifth and below the eighth ribs. The patient was postured so as to bring these ribs into as close contact as possible, and the sutures were pulled tight. Following this procedure, the entrance of air into the pleural cavity was arrested.

A flap of skin and subcutaneous tissue with its pedicle behind was turned down from the upper part of the chest and sutured over the operation area. The corners of the denuded area were sutured to prevent retraction. A small paraffin gauze drain was passed beneath the flap of the skin to the proximal stump of the intestine, and the denuded area was covered with a bismuth iodoform petrolatum paste dressing. The wound was dressed at four day intervals.

The transplanted flap healed by first intention. On the tenth day the sutures were removed. The site from which the flap was removed was found covered with healthy granulations. The general condition of the area operated was found to be very satisfactory.

On the seventh day following operation the patient, who at all times was difficult to control, walked for his midday meal, a distance of half a mile to the Red Cross hut.



Fig. 4.—Operative field.

August 29, a radical repair of the abdominal hernia was performed. The raw surface of the chest was grafted (Thiersch). The free end of the colon was excised, and the free edges were sutured to the abdominal wall.

September 9, the abdominal sutures were removed. There was a practically complete "take" of the skin graft. After the operation the patient's condition was very satisfactory. By October 15, on which date he went on leave, he had gained 17 pounds, and was bright and mentally alert.

Condition on Discharge.—On discharge from the service, Dec. 1, 1919, he had gained 30 pounds, and will apparently make a useful citizen. A small patch of mucosa representing the upper end of the splenic sigmoid pouch is discharging very little mucus. A roentgenogram demonstrates that no barium enters the ascending or transverse colon. There is marked limitation of respiratory effort on the left side. The patient is free from pain, discomfort or digestive disturbance, and he no longer finds an abdominal support necessary.

115 Stanley Street.

Loss of Health.—The transition from vigor to health, from health to impairment, and from impairment to disease is gradual, almost imperceptible. The loss of vitality does not take place abruptly, suddenly, in ways that stagger and arrest one's attention, but our vital losses, like our financial losses, are in dribblets, in pennies, nickels and dimes, and occasionally quarters. And in the one case, as in the other, we do not become alarmed until our surplus is dangerously drawn on.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents*, 1919.

A NEW TONSIL INSTRUMENT

J. G. ROHRIG, M.D., BENNETT, IOWA

The tonsil enucleator is not a snare, nor is it a cutting instrument or a guillotine. It has a dull blade with an oval shaped opening. The ring encircling this opening is an incomplete one having a 5 mm. gap in its lower part, as shown at A in Figure 1.

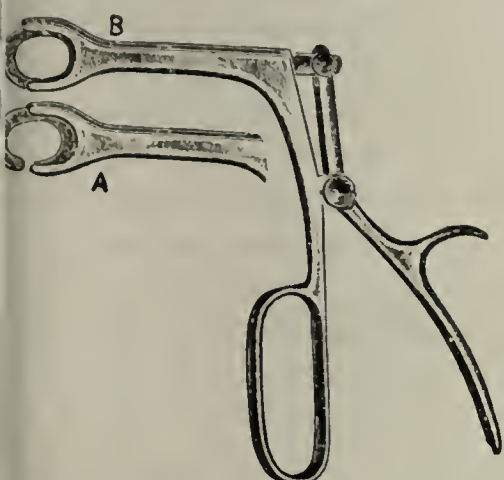


Fig. 1.—Tonsil enucleator: A, gap or passing over tonsil forceps; B, position when gap is hidden and ring is ready for passing over tonsil.

This gap is hidden, and the ring a complete one when the blade is in the position shown at B in Figure 1. By this gap the enucleator may be hooked over the tonsil forceps while the latter keeps its grasp of the tonsil, as shown in Figure 2. The handles are then pressed until the catch on the lower part of the channel supporting the blade is felt to engage the notch on the lower edge of the blade.

The ring is now again a complete one encircling the tonsil forceps, as in Figure 3. The tonsil being held by a good grasp of the forceps secured before the dissection of pillars is begun, the enucleator is instantly placed in position, as shown in Figure 3. The ring is passed well down behind the superior lobe of the tonsil while the distal part of the ring is brought well out to include the inferior lobe, or pole. By pressure of the handles the dull blade is moved, and the entire tonsil with its capsule is peeled out with as little injury to blood vessels and tissues as is possible. The distal part of the blade can be passed well outward to include the inferior pole of the tonsil, while a wire loop cannot be passed beyond even a slight obstruction. The first grasp of the tonsil by the tonsil forceps should be sufficiently deep to engage the fibrous trabeculae, which gives a good bite that will not tear out, and no further laceration or grasping of friable superficial tissue is needed. With a good bite, the pillars are dissected, the upper and anterior part of the tonsil with the capsule is loosened, the enucleator is applied and placed to include

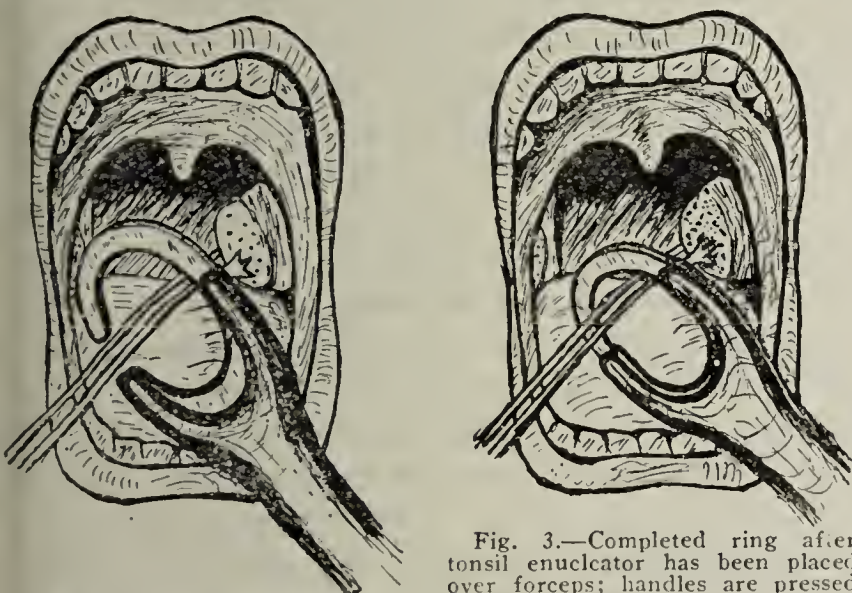


Fig. 2.—Tonsil enucleator being hooked over tonsil forceps.

Fig. 3.—Completed ring after tonsil enucleator has been placed over forceps; handles are pressed until it is felt that catch has engaged notch.

the lower pole, and the operation completed without a second grasp. Even after it is constricting the tissues, the enucleator may be instantly removed from the throat, if it is desired to dissect a pillar. The little dissection may be done, and the enucleator replaced instantly. This cannot be done with a wire loop. Not only does the dull blade better follow the irregularities of the capsule than does a sharp edge or a wire loop, but, in addition, the crushing division by the dull blade is followed by less bleeding, and less opportunity for

organisms to gain entrance to the circulation, than if division of tissue were by sharp edge or wire.

This method does not require outward pressure in the direction of the angle of the jaw to bring the tonsil into the ring of the instrument, and therefore the surrounding tissues are not traumatized. Trauma to these structures is not desirable, especially if active organisms are present at the time.

A NEW AND EASY METHOD FOR DEMONSTRATING SPIROCHAETA PALLIDA

S. D. COFFIN, A.B., M.D., SEATTLE

A piece of passe-partout or black paper, the size of a quarter, pasted on the bottom of the Abbé condenser of the ordinary microscope will facilitate the making of dark field examinations for *Spirochaeta pallida*. I have employed this method for the last six months, and found it even better than the regular "dark field" attachment sold for the purpose.

A hooded light of 100 watts, about 8 cm. above the work bench, is employed. A piece of black passe-partout binding, the size and shape of a quarter, is pasted on the center of the lower (convex) surface of the Abbé condenser, the top of which should be level with the top of the stage of the microscope. The high (4 mm.) objective is used. The specimen should be thin, and evenly distributed between the cover-slip and the slide. Care should be taken to wash the lesion only with cold water. Strict instructions should be given to the patient not to put any medicines, even soap, on it until

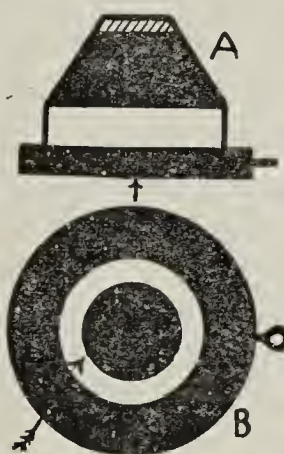


Fig. 1.—Method for demonstrating *Spirochaeta pallida*: A, side view of Abbé condenser; arrow points to black paper; B, bottom view.

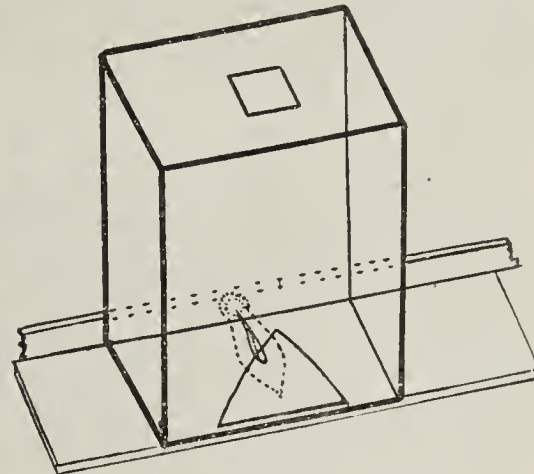


Fig. 2.—Hood for light.

the diagnosis is made, for even the mildest antiseptics make it impossible to find the spirochetes.

Heavy liquid petrolatum is used between the slide and the upper surface of the condenser. Oil should not be used on the upper surface of the specimen, that is, the high, dry lens should be used.

The light is regulated with the lower shutter of the condenser till the field looks like the clear sky on a moonless night. Two fields will be found; one should rack slowly through the first field to the second, where *Spirochaeta pallida* will be beautifully demonstrated.

201-204 Yale Building.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

ACETYLSALICYLIC ACID (See New and Nonofficial Remedies, 1920, p. 247).

Acetylsalicylic Acid-Heyden.—A brand of acetylsalicylic acid complying with the N. N. R. standards.

Manufactured by the Heyden Chemical Works, Garfield, N. J. No U. S. patent or trademark.

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on the second advertising page following the reading matter*

SATURDAY, MAY 22, 1920

It is unnecessary to remind our readers that periodical publishers are at present living under a sword of Damocles. In this instance the sword is "paper shortage." It has been the rule of THE JOURNAL to keep a six to eight weeks' supply of paper on hand in order to be ready for emergency, but, because of freight difficulties, this reserve has gradually dwindled almost to the vanishing point. Somewhere between the paper mills and Chicago there are more than a hundred tons of paper en route to THE JOURNAL. One car was shipped more than six weeks ago and others have since followed at regular intervals. This announcement is made so that our readers may have explained beforehand any contingency which may occur: It may be that THE JOURNAL will be sent out in a thin paper cover; it may be necessary temporarily to reduce the number of pages; there is a bare possibility that some issue may be seriously delayed.

BEE POISON

The mention of animal poisons—so-called zootoxins—is likely first of all to bring to mind the venoms of snakes. This type of highly toxic substances has been extensively investigated, notably by Flexner and Noguchi¹ in this country. The effects produced by venoms are varied and undoubtedly due to a number of distinct components, including hemotoxins (that is, hemolysins and hemagglutinins), neurotoxins, endo-theliotoxins and leukocytolysins. Their precise chemical nature has not yet been ascertained. In addition to these harmful products, practical medicine has to deal with the poisons of various insects: scorpions, spiders, centipedes, ants, wasps and bees.²

Bee poison is probably encountered most frequently. Fatal intoxication in man as a result of the sting of bees is by no means unknown. The bee poison has awakened the interest of investigators, not merely because its effects need frequently to be counteracted in persons who have been stung, but also because it

formerly acquired some reputation as a therapeutic product, with a history of many years' standing. The sting of bees has been recommended in many parts of the world, usually as a suggestion of popular lay therapy, for palliating a great diversity of disease conditions, among which rheumatic disorders stand foremost. Even physicians have not been averse to the trial of treatment with bee poison, and there are records of patients subjected to increasing numbers of "bites" up to a total of fifty, or even a hundred, a day. In such cases the effects have been far more pronounced than mere local manifestations of bee sting.³

It is no longer satisfying to the inquisitive worker to designate a harmful substance, such as may be contained in the bite of an insect, by the vague name of toxin. Students now demand some knowledge of the chemical nature of the toxins. Are they protein in nature, so that the possibility of developing antitoxic substances may be reckoned with? Or are they well defined organic or inorganic compounds for which a chemical antidote can be secured? These are the sorts of questions that are likely to be asked nowadays in considering animal poisons. From the standpoint of the investigator, some of the difficulties become evident when it is recalled that the secretion of a honey-bee represents at best 0.0003 or 0.0004 gm. ($\frac{6}{1000}$ grain), two thirds of which is water. The residual substance is known to include a variety of compounds, including considerable protein.

That the poisonous component of the toxic secretion of the bee is not a protein was shown by Langer.⁴ This discovery made it highly improbable that an immunity to bee poison can be developed through the usual mode of antibody production, as this type of biologic protective response is usually, if not always, associated with protein antigens. Immunity of some sort undoubtedly does exist, if one may trust the personal testimony of beekeepers. Bee poison is known to be markedly hemolytic; and its potency in producing severe inflammatory reactions, with edema and necrosis, has been demonstrated beyond doubt. These different phenomena are usually associated with potent agencies of quite unlike chemical character.

The latest information contributing to the explanation of the action of the bee poison is the outcome of studies by Flury,⁵ who has actually worked with the product from several hundred thousand bees. Langer had believed that the protein-free bee poison was a nonvolatile organic base. Flury regards it as a compound of far greater complexity. A considerable part seems to be lipid in character. By hydrolysis it has been possible to split off cholin, glycerol, phosphoric acid, palmitic and other fatty acids, an indol deriva-

3. Keiter, A.: Rheumatismus und Bienenstichbehandlung, Vienna and Leipzig, 1914.

4. Langer, J.: Ueber das Gift unserer Honigbiene, Arch. f. exper. Path. u. Pharmacol. **38**: 381, 1896; Abschwächung und Zerstörung des Bienengiftes, Arch. internat. de Pharmacod. **6**: 181, 1899.

5. Flury, F.: Ueber die chemische Natur des Bienengiftes, Arch. f. exper. Path. u. Pharmacol. **85**: 319 (Jan.) 1920.

1. Noguchi, Hideyo: Pub. 111, Carnegie Institution of Washington, 1909. Calmette: Les venins, les animaux et la sérothérapie antivenimeuse, Paris, Masson & Cie, 1907.

2. Faust, E. S.: Die tierischen Gifte, Brunswick, 1906.

ive, presumably tryptophan, and an unidentified non-nitrogenous component. Some of these disintegration products are undoubtedly derived from phosphatids like lecithin. The last mentioned non-nitrogenous fragment is assumed to be the pharmacologically active component of bee poison. It can produce hemolysis, and behaves like the hemolytic saponins. In view of these findings Flury regards the bee poison, in its natural form in the secretion, as a complex of lecithin with basic components, showing resemblances to the protein-free sapotoxins, on the one hand, and to poisons of the cantharidin type, on the other. Snake venoms also include saponin-like poisons which account for their hemolytic properties. The potency of cantharidin as an irritant poison helps to explain the hyperemia and attendant symptoms that bee stings call forth.

THROMBOPLASTIC PRODUCTS

It has long been known that most tissues furnish something that can play a potent part in the coagulation of the blood. In the usual process of clotting which occurs after a hemorrhage and thus represents one of the most effective protective mechanisms of the body, contact with tissues inevitably occurs. The blood itself, as it exists in the circulation, remains fluid under normal conditions because it lacks active thrombin, one of the essential factors in the clotting process. It has often been pointed out that if the plasma could be removed from the blood vessels without coming into contact with tissues and without destruction of any of the formed elements of the blood itself, it would tend to remain fluid as it exists within the vessels. Experimentally, plasma has been secure in this way; it clots promptly on addition of tissue extract.

The possibility of controlling hemorrhage more effectually in some cases by supplying a thromboplastic substance, as the tissue factor has been designated, long since suggested itself. Obviously, such a therapeutic procedure could not be expected to promote a successful outcome unless all the other essential factors—fibrinogen, calcium, etc.—were also present in adequate amount. Attention was directed some time ago to the use of extracts of tissues or certain cells, notably the blood platelets, in the attempt to produce effective hemostatic products. Some of them have already been the subject of patents.

The probability that the active component in tissue extracts is lipoid in nature was suggested by earlier investigators. In 1912, Howell¹ of Johns Hopkins University reached the conclusion that the thromboplastic substance is a phosphatid, which he subsequently identified with cephalin. Following this lead, commercial thromboplastic products have commonly been prepared from brain tissue, a material known to be rich

in cephalin.² Whether they shall find a permanent place in therapy remains to be seen. Recently, however, Mills³ of the University of Cincinnati has found lung extracts to be more active as thromboplastic agents than are the extracts of any other tissues tested, kidney coming second, and then heart, brain, spleen, thymus, testes and skin, somewhat in the order named. The remaining tissues were weakly active as compared to lung, some of them showing very slight thromboplastic action. In considering a possible biologic significance of this unlike coagulative action of different tissues, Mills asks whether the marked potency of the lung may not represent a special protection in pulmonary diseases, in which extensive destruction of the tissue occurs. In the case of the kidney, likewise, a peculiarly effective protection against hemorrhage in a vital organ may be postulated. Whether or not lung tissue will offer a better starting point for the preparation of therapeutically available hemostatic extracts remains to be seen. Obviously, if the active principle is identified with certainty, its most advantageous preparation will not necessarily depend on the potency of any particular tissue, but rather on the most available source of the definite chemical compound concerned.

NEW INTESTINAL PARASITES: A PLEA FOR MORE CAREFUL FECAL EXAMINATIONS

The extensive examinations made on soldiers during the war, and previously on many hundreds of civilians as part of the modern attempts to eradicate hookworm infection, have emphasized the paucity of our information regarding the intestinal zooparasites of man. Tapeworms and roundworms have long been recognized; some species are, in fact, not easy to overlook, owing to their conspicuous size and characters. The systematic use of the microscope has, however, revealed unexpected numbers and numerous novelties in the nature of such parasitic invaders.

About a year ago Kofoed and White,⁴ working in the army laboratory at Metchnikoff, reported that a nematode (roundworm) ovum, apparently undescribed, had been found in 429 cases among approximately 140,000 soldiers examined. This is a characteristic illustration of what careful examination on a large scale may bring to light in clinical diagnosis. The ovum in question possessed a uniqueness in addition to its novelty, for it was said to be the largest ovum of intestinal worms encountered in human stools. Its dimensions averaged 95 by 40 microns, but the size was extraordinarily variable in different specimens. Kofoed and White were unable to identify the species, though they

2. New and Nonofficial Remedies, 1920, pp. 18 ff.

3. Mills, C. A.: The Activity of Lung Extract as Compared to Extracts of Other Tissues, in Inducing Coagulation of the Blood, *J. Biol. Chem.* **40**: 425 (Dec.) 1919.

4. Kofoed, C. A., and White, A. W.: A New Nematode Infection of Man, *J. A. M. A.* **72**: 567 (Feb. 22) 1919.

1. Howell, W. H.: *Am. J. Physiol.* **31**: 1, 1912; The Coagulation of the Blood, *Harvey Lectures*, 1916-1917, p. 288.

regarded it as related to *Oxyuris vermicularis*, the well known pinworm, seatworm or mawworm.

This record has now been surpassed by the finding of the eggs and specimens of an oxyurid hitherto unreported for man.⁵ They came from a child living in the Philippine Islands. The ova are stated by Riley, who identified them at the University of Minnesota, to measure 125 by 40 microns. The worms, though resembling the genus to which the ordinary pinworm belongs, probably are of the species *Syphacia obvelata*.⁶ Along with them appeared fragments of the rat tapeworm of man, a cestode likely to be found quite common in the United States. Thus, Frey⁷ found this tapeworm not long ago in a third of the inmates of a Southern orphans' home, this incidence being exceeded only by that of hookworm infestation in the same group of 270 children.

These dwarf tapeworms are common to rodents, notably rats and mice. In man they are easily overlooked because of their small size, so that intensive routine examinations, such as hookworm tests require, alone afford a diagnosis. In the Philippine instance just recorded, a rodent tapeworm was found in a case in which the food of the child had evidently been contaminated by rats or mice. It is not improbable that these rodents also may have been responsible for the occurrence of the ova of the newly described species of roundworm. The circumstances related in the foregoing summary indicate the great importance of careful fecal examinations—an essential routine all too often entirely neglected.

"CHRISTIAN SCIENCE" AND SLOPPY THINKING

A New Jersey salesman, who claims to have been a member of the "Christian Science" faith for three years, was recently found guilty of manslaughter because he had permitted his 9-year-old daughter, who was suffering from diphtheria, to die without medical treatment. The little girl was given "treatment"—"absent" and otherwise—by a professional "Christian Science" practitioner. The man was fined \$1,000 and costs. The judge, in imposing sentence, is reported to have said:

In the light of present-day science, which is the result of many years of progressive experiment and demonstration, no one is justified in neglecting the use of such agencies as have been shown to be efficient in the treatment of malignant and contagious diseases, and this is especially true where one is charged with responsibility over the life of another, and particularly of a child of tender years, who has no option but to rely on the common sense and good judgment of its natural protector.

The verdict has brought to light, as such verdicts are likely to do, the loose thinking that characterizes

so many of the so-called intellectuals of today. Well-meaning people, who deny that they are followers of Mrs. Eddy, have written to the newspapers denouncing the verdict and declaring that it is little less than a crime that a man should be punished for following the dictates of his conscience. The main point stressed by such people seems to be that as children occasionally die of diphtheria under medical treatment, there is no reason for getting excited when a child dies under "Christian Science" treatment. The argument, of course, is fallacious. The efficacy of the modern scientific medical treatment of diphtheria is not a matter of theory, belief or conscience—it is a matter of fact. Its efficacy is as demonstrable as is the efficacy of the Westinghouse air brake. The parent or guardian who fails to give his child or ward the benefit of modern medical treatment for diphtheria becomes as culpable as a railroad would be if it failed to equip its passenger trains with air brakes. Sometimes, it is true, the air brake fails to avert a fatality; but that is not the fault of the air brake, nor is it any argument for its abolition.

If an adult in his own right mind wishes to be treated by "Christian Science" or any other unscientific methods, there can be no objection, provided the disease from which he is suffering may not, through such treatment, become a menace to the community. Children of tender years, however, should not be sacrificed to the distorted views of those who are supposed to be their protectors.

Religious beliefs should be respected and, in general, they are respected. Where, however, religious beliefs conflict with the general welfare, such beliefs must give way. Presumably, the Mormons were sincere in their belief in polygamy; that particular tenet of their religion, however, had to give way to the more enlightened belief of the rest of the community. The Dukhobors that migrated to Canada were undoubtedly sincere in their belief that they should go nude, and the practice of this belief was undoubtedly less of a menace to the community than are some of the bizarre views held by "Christian Scientists" regarding the cause and treatment of disease. Nevertheless, the Dukhobors had to put on clothes. It is conceivable that we might have transplanted to this country some of the religious beliefs of India, but it is doubtful whether public opinion in the United States would ever look with equanimity on Sutteeism, even though the widows might declare that being burned on the funeral pyres of their deceased husbands was a matter of their own personal belief and was none of the concern of the general public. Only a few weeks ago a man in Chicago shot his son with the avowed intention of killing the boy because he feared the lad was acquiring bad habits and he wished to save the boy's soul. We have not yet noticed any letters of indignation protesting against the man's arrest. Possibly this

5. Riley, W. A.: A Mouse Oxyurid, *Syphacia Obvelata*, as a Parasite of Man, *J. Parasitol.* **6**: 89 (Dec.) 1919.

6. Seurat, L. G.: Sur les oxyures des mammifères, *Compt. rend. Soc. de biol.* **79**: 64, 1916.

7. Frey, J. H.: Helminthiasis at the Texas State Orphans' Home, *Texas State J. Med.* **11**: 229, 1915.

is because he represents a minority. Should such beliefs ever reach the dignity of a religious cult with money and well-organized publicity machinery behind it, there would doubtless be found many to defend the killing of minors for the purpose of "saving" them.

Current Comment

THE STREPTOCOCCI COMMONLY FOUND IN MILK

Streptococci are associated by the bacteriologically trained mind with inflammation and suppuration and all the dangers that they may entail. Hence, when it was reported that the streptococci that cause garget or mastitis in cattle are found abundantly in the milk of infected cows, it was easy to speculate on the possible ills of mankind that might follow the drinking of raw milk. How to make the indispensable food, milk, safe is an important problem. As we cannot escape the ever-present bacteria of our environment, it is essential that their nature should be recognized. It has been realized for some time that not all micro-organisms are baneful; some are even beneficent. Let it be said clearly, also, that not all streptococci are virulent. For a number of years it has been customary to lay stress on cleanliness of both man and beast in the handling of milk for human consumption. There is no longer any doubt that attention to this factor will greatly reduce the microbial content, the keeping qualities, and in general the wholesomeness of market milk. But it may come as somewhat of a surprise to many that the external, environmental factors related to the cow are by no means always the most menacing to the bacteriologic purity of milk. Man, the carrier of harmful species, is of course a constant source of danger; but the "dirt" that accumulates mechanically about the animal is far less threatening. According to the most recent observations of Jones¹ at the Rockefeller Institute Laboratories at Princeton, neither the fecal nor the skin streptococci of cows have been isolated from unpasteurized bottled milk of good grade with any great frequency, despite the fact that nonhemolytic types of these micro-organisms can be found in the vagina, saliva, skin and feces of the cattle. The principal source of the streptococci in milk, according to Jones, is the cow's udder. Most of the streptococci agree in character with mastitis streptococci, a fact that may now be regarded as definitely established. Although these have been observed in the milk marketed from a large herd during the last two years, diseases traceable to this milk supply have never been reported. Jones therefore believes that this evidence points to the low pathogenicity for man of the streptococci, particularly udder types, derived from the cattle and found in their milk. If this is established, such streptococci may be excluded as the source of severe epidemics of milk-borne sore throat. For this, human agencies must still be held responsible.

THE DEADLY MOTOR CAR

In an analysis of the accidents occurring in St. Louis during March, 1920, the National Safety Council indicates that there were eleven fatalities and 187 persons injured in 494 automobile accidents. This, it must be noted, was in one month and in a city of less than a million population. The total number of accidents of all kinds was 791, so that the automobile accidents constituted almost two thirds of the total. The property damage was estimated at \$39,500. The causes were not determined in 190 instances; skidding was responsible for ninety-one; careless driving for 205, and careless walking for twenty-seven. Quite a few of the accidents are ascribable to the carelessness of the motorist in giving the signal of his intent to turn, to pass, to stop, to back or to drive out from the curb. A few accidents were due to the glare of undimmed headlights. The great majority of all traffic accidents and fatalities are due to "carelessness." It is a safety aphorism that carelessness can be overcome only by education.

THE ACQUIRED TOLERANCE FOR MORPHIN

The explanations of those forms of idiosyncrasy which consist in failure of a person to react to the ordinary dose of a drug have been both varied and inconclusive. The instance technically designated as acquired tolerance represents a greatly decreased susceptibility to a drug as the dose is repeated. The person becomes readjusted to a new agency, whether it be alcohol, nicotin, arsenic or an opium alkaloid. Thus are drug habits formed. How does an originally sensitive and responsive organism acquire an immunity whereby it may withstand a previously toxic and sometimes ordinarily fatal dose? Apparently in some cases the tissues become adapted to the drug so that it no longer reacts as a foreign substance. Sometimes the intestinal absorption of the compound may decrease with increasing use by oral administration. This explanation has been offered for the acquired tolerance for arsenic, it being reported that frequently when large amounts are becoming tolerated by mouth, much smaller doses given subcutaneously may be toxic. Again, the defenses of the organism may become strengthened, so that a given compound is more readily destroyed by oxidation in the body. In some cases, antitoxic agencies of a chemical nature may actually come into prominence. Whether any of these possible mechanisms explanatory of tolerance are specific for individual drugs, or whether they represent more general biologic responses which might meet a variety of exigencies, is not so clear. It has been reported that the prolonged use of one drug may establish tolerance for others of the same class. Thus, it is said that chronic alcohol drunkards are more resistant than ordinary persons to the action of chloroform. If this is true, the explanation may lie in the fact that the chemically related chloroform and alcohol induce the same changes in the protoplasm. Precisely how tolerance to morphin is acquired is not yet clear. Faust¹ believed that whereas normal persons excrete

1. Jones, F. S.: Source and Significance of Streptococci in Market Milk. *J. Exper. Med.* **31**: 347 (April) 1920.

1. Faust, E. S.: Ueber die Ursache der Gewöhnung an Morphin. *Arch. f. exper. Path. u. Pharmacol.* **44**: 217.

this alkaloid practically unchanged, showing that it circulates as such in the body, in those having a "habit" for morphin it is partially destroyed. This hypothesis of an increased destruction of the drug in tolerance has not been tenable in the light of subsequent researches.² Biberfeld³ has demonstrated, however, that the tolerance to morphin is quite specific. In animals "immunized" to this narcotic, ordinary doses of a drug even so closely related as is diacetylmorphin (heroin) are unquestionably potent. Furthermore, according to Biberfeld's studies in the Pharmacologic Institute at Breslau, marked tolerance to morphin does not protect against the soporific barbital (veronal), nor against scopolamin or cocain. It has been asserted from time to time that the blood of persons exhibiting high tolerance contains protective, antagonistic or "immune" substances which are developed with the immunity to morphin. Carefully conducted investigations with the serum of tolerant animals have, however, thus far failed to afford any real substantiation of these assertions.

RESPIRATORY DISEASE TRANSMISSION BY INANIMATE OBJECTS

Cumming⁴ has suggested, in discussing the transmission of influenza and influenzal pneumonia, that the hands are important factors in the conveyance of germs to healthy persons, and furthermore that hand-to-mouth infection will account for the major part of this transmission. In these studies the methods of washing army mess-kits were particularly concerned, as the wash water served as a means for the contamination of the hands in the groups showing high influenza rates. In a later article,⁵ Cumming reports the results of a study of pneumonia in institutions, in some of which eating utensils were washed by hand and in others by machine washers. In the first group the pneumonia rate was much higher than in the second group. Still more recently the same investigator⁶ has laid primary emphasis on tableware, particularly spoons, forks and knives, as a means of transmitting tuberculosis. This point of view is confirmed by deaths of guinea-pigs from tuberculosis in 25 per cent. of instances after injections of sediment from water in which spoons used by tuberculous patients had been rinsed after washing. In accepting these findings, however, it should be remembered that in intelligent households silverware is usually both washed and rinsed before being used again. It would be interesting to know the influence of the combination of these operations on freeing spoons from tubercle bacilli. The work of Cumming focuses the attention of sanitarians on other means of conveying germs of respiratory diseases than by droplet infection directly from mouth to mouth. More data are needed to show that

these means are really the major ones. It is probably true that the inanimate objects and hands are capable of conveying disease germs as well as are the infectious droplets, and it is possible that too little attention has been given to them.

IN THE COURSE OF THE DAY'S WORK

An interesting though not unique case is described in a recent bulletin sent out by the Federal Board for Vocational Education. Among the blinded ex-service men was a negro who seemed to be blind in both eyes. Neither eye could perceive five fingers at any distance. He had faint light perception and there was hope for sight restoration in one eye. The man was about to be assigned to a workshop for the blind when a physician managed to persuade him that he was not blind. The report of the case reads:

He was suffering from psychoneurosis hysteria giving rise to marked blepharospasm and photophobia and amaurosis. All physical findings negative. Treatment by suggestion completely cleared up all symptoms and I discharged this man cured.

This case is not referred to because it is unique in medicine for, as physicians know, it is not. Had the man regained his sight, however, while under "Christian Science" treatment or while having his vertebrae pushed by a chiropractor, what a to-do would have been made of it. The case would have become a classic in the annals of the cult. As it is, the incident would never have reached the public eye had it not been for the bulletin of the vocational educational board.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DELAWARE

Child Welfare Activities.—On request of the Delaware Reconstruction Commission, an officer of the United States Public Health Service has been assigned to duty in Wilmington in the office of the director of this commission as medical director of the child hygiene activities. He has under his supervision a number of children's clinics and health centers already established and will advise and assist in the establishment of others. In addition, he will exercise general supervision of medical inspection of schoolchildren about to be undertaken in the state in cooperation with a number of authorized and volunteer agencies.

DISTRICT OF COLUMBIA

Personal.—Dr. Van H. Manning, director of the Bureau of Mines, Department of the Interior, has tendered his resignation, effective June 1. Dr. Manning is leaving the government service to accept the position of director of research with the recently organized American Petroleum Institute. —Dr. Ross McC. Chapman, for more than four years assistant superintendent of St. Elizabeth's Hospital, Anacostia, has been appointed medical superintendent of the Sheppard and Enoch Pratt Hospital, Towson, Md.

Survey of Delinquents.—On request of the judge of the juvenile court of the District of Columbia, officers have been assigned to the probation office for the purpose of making physical and mental examinations of juvenile delinquents and supplying the court with information relating to the physical and mental status of such delinquents, to be taken

2. Cloetta, M.: Ueber das Verhalten des Morphins im Organismus und die Ursachen der Angewöhnung an dasselbe, Arch. f. exper. Path. u. Pharmacol. **50**: 453. Rübsamen W.: Arch. f. exper. Path. u. Pharmacol. **59**: 227.

3. Biberfeld, J.: Zur Kenntnis der Morphingewöhnung, II, Ueber die Spezifität der Morphingewöhnung, Biochem. Ztschr. **77**: 283 (Nov.) 1916.

4. Lynch, C., and Cumming, J. G.: Am. J. Pub. Health **9**: 25 (Jan.) 1919. Cumming, J. G.: Ibid. **9**: 414 (June) 1919.

5. Cumming, J. G.: Am. J. Pub. Health **9**: 849 (Nov.) 1919.

6. Cumming, J. G.: Can the Tuberculosis Transmission Rate Be Reduced? J. A. M. A. **74**: 1072 (April 17) 1920.

into consideration in arriving at judicial decisions. Each child coming before the court will be subjected to an intensive physical and mental examination. These will be accompanied by careful medical-social follow-up work.

ILLINOIS

Personal.—Dr. Frank P. Norbury, Springfield, has been appointed neuropsychiatrist to the Wabash Railway System. —Dr. Arthur F. Stotts, Galesburg, was shot by the husband of a patient, May 8, and is under treatment at the Cottage Hospital, Galesburg.

The Venereal Disease Menace.—A special discussion arranged by the Illinois Social Hygiene League was held at the Rockford Theater, Rockford, May 18. Moving pictures of venereal disease treatment were shown, and described by Dr. Alec N. Thomson, Brooklyn; Assistant Surgeon-General Claude C. Pierce, U. S. P. H. S., spoke on "Venereal Disease and the Local Practitioner," Dr. William L. Baum, Chicago, on "Local Phases of the Venereal Disease Menace," and Robert H. Gault, professor of criminology in Northwestern University, and president of the league, detailed the plans of the Illinois Social Hygiene League.

Organized Chiropractors Checked.—A report from the director of registration and education of Illinois states that twenty-five chiropractors have been enjoined by the circuit court of Rock Island County from treating human ailments without state licenses. These twenty-five chiropractors are members of Class "A" of the Universal Chiropractors' Association with headquarters at Davenport, Iowa. The Class "A" members of this association pay a membership fee and quarterly dues. In consideration of the payments, the association pays all fines assessed against them by the courts in Illinois for practicing without licenses. It also pays the fees of attorneys for defending them. When a chiropractor is fined in the courts, he is advised by the officers of the association to continue in his unlawful practice. The circuit court of Rock Island has temporarily enjoined these chiropractors from treating human ailments without licenses and has also enjoined them from carrying out the terms of their unlawful agreement with one another. They are enjoined from contributing to and paying, or paying any part of, the fines and costs and also the expenses and attorney fees that are assessed, or the expenses incurred by any person other than the one prosecuted in an individual case. B. J. Palmer, head of the Palmer School of Chiropractic at Davenport and secretary of the Universal Chiropractors' Association, is enjoined from paying the fines, costs, expenses and attorney fees of Class "A" members in Illinois. Thomas M. Morris and Fred Hartwell of LaCrosse, Wis., attorneys for the association, are enjoined from representing in the Illinois courts any of the members of the Universal Chiropractors' Association. The chiropractors who are enjoined are: Charles J. Brutus, Jesse Newman, Dora K. Yunker and F. W. Linsenmeyer, Champaign, Champaign County; R. E. Davenport, Chicago, Cook County; B. A. Clayton, Mrs. E. E. Clayton and A. H. Morrow, Kewanee, Henry County; Lena M. Warrick and T. L. Warrick, Ottawa, LaSalle County; Mary E. S. Fulleton Tiska and A. W. Tiska, Highland, Madison County; J. C. Underwood, Bloomington, McLean County; Philip H. Griggs, Jacksonville, Morgan County; W. J. Buchanan, Riley E. Bowman, E. T. Henry and S. F. Stewart, Peoria, Peoria County; Emma Calvin, Monticello, Piatt County; H. N. Mettler and Emma S. Rooks, Rock Island, and I. H. Beckholt, East Moline, Rock Island County; R. W. Peerman, Eldorado, Saline County; Elizabeth Goss, Delavan, Tazewell County, and J. L. Hubbard, Minonk, Woodford County. The writ in the injunction proceedings was signed by Attorney-General Brundage, State's Attorney Bell of Rock Island County, and Francis W. Shepardson, director of registration and education. The bill asks that other Class "A" members of the association who have conspired and confederated may be made parties defendant to the bill and bound by the order of the court as soon as their names are ascertained.

Chicago

Personal.—Dr. C. Hubart Lovewell and Elmer E. Simpson were overcome by fumes from a gas heater while attempting to revive patients who had been overcome by gas. —Dr. Charles Louis Mix has accepted the position as head of the department of medicine of Loyola University School of Medicine.

Medical School Recognized.—A letter from the president of the Bureau of Medical Education and Licensure of Penn-

sylvania states that on April 21 the bureau voted to include Loyola University School of Medicine on its approved list, not only admitting its graduates to examinations but also receiving them through reciprocity.

INDIANA

Smallpox Epidemic.—An epidemic of smallpox is said to be prevalent in the Calumet region, Gary having forty-five cases and Hammond, fifty-two, several cases being reported also in Whiting, East Chicago and Indiana Harbor.

Vote for County Hospital.—At the recent election in Adams County, held in Decatur, to decide on the proposition to build a new hospital for Adams County to cost \$100,000, 1,601 votes were cast in favor of the hospital and 1,347 against it.

Hospital Items.—The physicians of Shelbyville and Shelby County have recently formed the Shelby County Hospital Association. The association has purchased a site in Shelbyville where it proposes to erect a hospital.—Public subscriptions amounting to \$105,000 have been received by the committee in charge of buying the Home Hospital at Muncie with a view to transferring it to a board of governors, who will operate it as a public hospital.—The City Hospital at Madison was recently combined with the King's Daughter's Hospital of that place.

IOWA

Personal.—Dr. Dallas L. Scarborough, Grand Junction, fell recently and fractured his hip. He is under treatment in a hospital in Iowa City.

County Society Reorganized.—Fremont County Medical Society which has lain dormant during the World War was reorganized, April 28, at Sydney. Dr. Brownlow B. Miller, Tabor, was elected president; Dr. Ralph S. Lovelady, Sydney, vice president, and Dr. Ambrose E. Wanamaker, Hamburg, secretary.

New State Officers.—At the annual meeting of the Iowa State Medical Society held in Des Moines, May 12 to 14, under the presidency of Dr. William L. Allen, Davenport, the following officers were elected: president, Dr. Donald Macrae, Jr., Council Bluffs; president-elect, Dr. Alanson M. Pond, Dubuque; vice president, Dr. Campbell P. Howard, Iowa City; secretary, Dr. Thomas B. Throckmorton, Des Moines (reelected); treasurer, Dr. Thomas F. Duhigg, Des Moines (reelected), and editor, Dr. David S. Fairchild, Clinton (reelected).

MARYLAND

Hospital to Open.—The Volunteers of America Hospital will be open for inspection, May 24. The hospital will not be ready to receive patients for about thirty days. The institution contains forty beds, and was built and equipped at a cost of \$40,000.

Gift to Phipps Clinic.—A gift of \$100,000 has been made to the Phipps Psychiatric Clinic, Johns Hopkins Hospital, by Henry Phipps of New York, founder of the clinic. This sum is to be a nucleus of a permanent endowment for the clinic. When the clinic was built, Mr. Phipps provided a maintenance fund for a period of ten years. Seven of the ten have already passed, so that this gift was received with great gratification by the hospital authorities. It will require the interest on \$1,200,000 to maintain the hospital on its present basis, according to the hospital authorities, and interest on a fund of \$2,000,000 will be needed to make full use of its laboratories and to provide for research work.

MASSACHUSETTS

Hospital Reopened.—St. John's Hospital, Lowell, with its new additions and alterations which have been in course of construction for the last two years at an expense of about \$600,000 was formally reopened, May 12.

State Society to Meet.—The one hundred and thirty-ninth annual meeting of the Massachusetts Medical Society will be held, June 8 and 9, at the Boston Medical Library, under the presidency of Dr. Alfred Worcester, Waltham. The Shattuck Lecture will be delivered on the first evening by Asst. Surg.-Gen. Allan J. McLaughlin, U. S. P. H. S., Washington, D. C., on "Influenza"; the annual discourse on Wednesday noon, by Dr. Hugh Cabot, professor of surgery at the University of Michigan, Ann Arbor, on "Health Insurance, State Medicine or What?" The annual dinner will be served at the American House, Boston, on Wednesday afternoon.

Personal.—Dr. Stanley H. Osborn, Boston, epidemiologist of the Massachusetts Department of Public Health, has resigned to accept the directorship in the Bureau of Preventable Diseases in the Connecticut State Department of Health, Hartford.—Dr. McIver Woody, Boston, has been appointed dean of the Medical Department of the University of Tennessee, Memphis.—Dr. John H. Wyman, Quincy, has been reappointed associate medical examiner (coroner) for the Seventh Norfolk District.—Dr. James J. Goodwin, Clinton, has been appointed associate examiner (coroner) for the Fourth Worcester District.—Dr. George L. Tobey, Clinton, has been appointed medical examiner (coroner) for the Fourth Worcester District.—Dr. Randolph C. Hurd, Newburyport, has been appointed associate medical examiner (coroner) for the Third Essex District.—Dr. William T. Sedgwick, Boston, has sailed for England as the first exchange professor of public health. He will serve for a time as a member of the faculties of the universities of Cambridge and Leeds. Dr. Sedgwick has been elected a fellow of the Royal Institute of Public Health.

MICHIGAN

Hospital Commission Appointed.—A hospital commission has been appointed to have charge of the expenditure of \$60,000, which has been raised by bond issue for an emergency hospital at Port Huron.

Personal.—Dr. Christopher G. Parnall, medical superintendent and director of the University Hospital, Ann Arbor, has been appointed a member of the Rockefeller Commission for the Study of Nursing Education.

Cooperation of Druggists in Venereal Disease Campaigns.—Much has been accomplished by the Michigan Department of Health in obtaining cooperation of druggists in conducting a venereal disease campaign. The venereal disease law, as passed by the Michigan legislature of 1919, required druggists to report venereal disease prescriptions when marked as such, to the Michigan Department of Health and also to discontinue dispensing medicine to venereal disease patients. During the first six months, 1,100 druggists reported prescriptions; 1,224 physicians wrote prescriptions; of the 1,721 estimated druggists in the state, 63.91 per cent. reported; 14,823 prescriptions were reported, and 10,055 cases of venereal disease were reported by physicians.

MISSOURI

Boylston Prize Awarded.—The Boylston Prize of \$300 has been awarded to Stuart Mudd, Samuel B. Grant and Alfred Goldman, fourth year students at Washington University Medical School, St. Louis, for their essay on "The Effect of Chilling on the Membrane of the Throat and Tonsil."

New Hospital at Westplains.—Dr. Robert E. Hogan, Westplains, has completed and opened for service a hospital at Westplains under the name of Christa Hogan Hospital, in memory of his mother. The building is of brick, has twenty-one rooms and is at the service of all reputable practitioners.

Personal.—Dr. Moses B. Harutun, Joplin, has been elected commissioner of health and has appointed Dr. John A. Chenoweth as city physician.—Dr. Kate C. Spain, St. Louis, was severely injured, April 22, by being struck by an automobile while crossing a street.—Dr. Frank N. Wilson, St. Louis, has been appointed one of the American editors of *Heart*.—Dr. Frederick Hagler, St. Louis, has been appointed chief surgeon of the Stevens-Duryea Corporation, Chicopee Falls, Mass.

Public Health Service Conducts Child Welfare Experiment in Missouri.—At the request of the state health authorities, an extensive field investigation and demonstration in child hygiene activities is being made by the public health service. In addition to a staff of health officers from this service, seven women physicians and six women nurses, in addition to a full complement of women field investigators, have been appointed and are in the field. Efforts are being made to provide better supervision of expectant mothers and to provide facilities whereby mothers can secure medical advice and assistance in the care of their babies. In all these activities, the aim is to establish in the Missouri Board of Health a model bureau of child hygiene for dealing with the health of mothers and children. The work is being so planned and conducted that when the present survey and demonstration are completed a permanent organization will

be left behind, supported entirely by the communities themselves.

NEW YORK

Dinner to Dr. Mandlebaum.—A dinner was tendered on May 8, at the Hotel Biltmore by the president and former members of the laboratory staff of Mount Sinai Hospital in honor of the twenty-fifth anniversary of Dr. Frederick S. Mandlebaum's appointment as pathologist to the institution. Among the guests were the president and the executive officers of the hospital.

Hearing on Chiropractor Bill.—A hearing on the bill providing for state licensing of chiropractors was held before Governor Smith, May 13. Among those who opposed the bill were Dr. Augustus Downing, deputy state commissioner of education, and Dr. Hermann M. Biggs, state health commissioner, representatives of the state health officers' association, the state charities aid association, the New York City Health Department and the New York Academy of Medicine.

Joint Clinics to Be Held.—The Committee on Joint Mental Clinics is planning to hold a large joint clinic during a six-day period for the purpose of furnishing expert diagnosis in the cases of patients brought to it. The clinic will cover an entire county after a survey has been made by public health nurses. The cases examined will include children's diseases, venereal diseases, tuberculosis, cancer, mental diseases and mental defectives, and although the work will be largely diagnostic, a follow-up system will be organized.

Public Tuberculosis Meeting.—The first public meeting of the New York Tuberculosis Association was held May 18, in the New York Academy of Medicine, when the subject of discussion was "How the New York Tuberculosis Association Plan to Restore the Consumptive to Industry." Dr. James Alexander Miller presided, and a brief report was made of the accomplishments of the association during its first three months. The topic was discussed under four heads: the plan; occupation in treatment and convalescence; methods of occupational and vocational training, and after-care and the association's workshop.

Dentists Endorse Health Center Plan.—The New York Dental Society, at its annual meeting, unanimously adopted a resolution approving the provisions of the health center bill endorsed in the last legislature and placing special stress on the great need for proper care of the mouth and teeth of the rural population and for instructions in the disastrous physical results of neglecting to provide such measures. Ninety per cent. of children, 7 years of age, are suffering, it is estimated, from mouth defects requiring correction, and the Life Extension Institute, in 125,000 examinations, found that 14 per cent. of those examined had marked infections of the teeth and gums. The resolution provided for the appointment of a committee of the state dental society to cooperate with all other organizations concerned with or interested in public health, with a view to securing favorable action on the bill at the next session of the legislature.

New York City

Milk and Child Exposition.—The New York City Department of Health announces that it will hold a milk and child exposition in Grand Central Palace beginning on May 17, designed to educate the public as to the value of milk for children.

Campaign Against Cancer.—The American Society for the Control of Cancer held a special meeting at the New York Academy of Medicine, May 13, at which Dr. Harvey Gaylord of Buffalo spoke on the "Less Familiar Problems of Cancer," and Dr. Howard Lilienthal on "Cancer from the Standpoint of the Clinical Surgeon." This meeting was the opening event of the campaign against cancer that is to be carried on in this city during the last week in May, when a number of lay meetings will be held throughout the city. Dr. Frederick T. Van Buren is director of the campaign. Twenty-five physicians have agreed to deliver addresses at meetings during the week.

United Hospital Fund Distributed.—The United Hospital Fund has completed the distribution of \$850,000 among the forty-four nonmunicipal hospitals of the city. Of the amount, \$400,000 was distributed among nineteen general hospitals in February, after the campaign to secure \$1,000,000 had been closed. The remaining \$425,000 has been distributed among ten special hospitals, nine women's and children's hospitals and six homes for chronics and convalescents. The daily per capita cost of patients in the forty-six united hospitals in

1914 was \$2.02; four years later it was \$3.20. In 1911, 39 per cent. of the patients were listed as free patients, while in 1918 only 23 per cent. were free patients.

Personal.—Dr. Louise Pearce of the Rockefeller Institute for Medical Research sailed for England and Belgium en route to the Belgian Congo to study the chemotherapy of African sleeping sickness.—Dr. Royall H. Willis, Sea Gate, retired, formerly assistant director of the bureau of child hygiene of the department of health, was recently presented with a signet ring by the members of the bureau as a token of their appreciation of his courtesy and consideration during his service of over twenty years.—Dr. Otto V. Huffman, Brooklyn, dean of the Long Island College Hospital, has resigned and has been appointed a member of the faculty of internal medicine in the New York Post-Graduate School and Hospital.—Dr. Charles Gordon Heyd has been appointed professor of surgery at the New York Post-Graduate School and Hospital.

OREGON

Cooperates in Mental Hygiene Survey.—The University Extension Department of the University of Oregon, with the approval of the state health officer, invited the United States Public Health Service to cooperate with the university in making a survey of the extent of the delinquency, dependency and feeble-mindedness problems of the state from the standpoint of mental hygiene. These investigations were authorized at the last meeting of the state legislature. This survey is made by the communities themselves, under expert direction, and when necessary with the active participation of the expert. Under the constitution, all new legislation involving appropriations must be submitted to the people for a referendum vote; hence the survey now being made may be counted on to constitute an important measure for educating the people in all lines of social hygiene, including mental, physical and child hygiene.

PENNSYLVANIA

Personal.—Dr. John French Kerr, Connellsville, has volunteered his services as a medical missionary in Africa under the Board of Foreign Missions of the United Presbyterian Church.

Compulsory Health Insurance.—At the meeting of the Pittsburgh Public Health Nursing Association, to be held May 27, John B. Andrews, Ph.D., secretary of the American Association of Labor Legislation, will speak on "Compulsory Health Insurance."

Philadelphia

Medical Club to Give Reception.—The Medical Club of Philadelphia has issued invitations to a reception to be given in honor of Dwight W. Morrow, May 28, at the Bellevue-Stratford.

Californian Speaks Before College.—At the stated meeting of the College of Physicians of Philadelphia, May 5, Dr. George H. Whipple, professor of research medicine in the University of California, read a paper entitled "Studies on Blood Regeneration in Anemia."

The Gross Prize.—The Samuel D. Gross prize of the Philadelphia Academy of Surgery for 1920, amounting to \$1,500, has been awarded to Dr. Evarts A. Graham of Washington University Medical School, St. Louis, for his essay entitled "Some Fundamental Considerations in the Treatment of Empyema Thoracis."

WISCONSIN

Personal.—Dr. Frank M. McGauley has resigned as city physician and health officer of Fond du Lac, and has been succeeded by Dr. Ned J. Malloy, Fond du Lac.

Hospital Burns.—The Egeland Hospital, Sturgeon Bay, was entirely destroyed by fire recently. Dr. Egeland has secured an option on the Joseph Richmond Building, Sturgeon Bay, and will remodel it for use as a hospital.

CANADA

New Salvation Army Hospital.—A new maternity hospital is to be built in Ottawa, Ont., by the Salvation Army at a cost of \$125,000. It will be completed and ready for occupation by the end of November.

Academy Election.—Dr. Jabez H. Elliott has been elected president of the Academy of Medicine, Toronto; Dr. Robert T. Noble, vice president; Dr. J. Herbert McConnell, treasurer

(reelected), and Dr. Frederick C. Harrison, secretary (reelected).

Personal.—Dr. Frank Gray has arrived in Montreal from England.—Dr. Margaret Parks, St. John, has been appointed medical inspector of New Brunswick under the Dominion Government. She will have charge of inspecting immigrants at the port of St. John.

Hospital Burns.—Fire caused by an overheated furnace destroyed the Essex County Tuberculosis Sanatorium, Union-on-the-Lake, forty miles south of Windsor, April 29. The forty-five patients escaped without injury and were sheltered in neighboring homes pending their removal to the Hotel Dieu, Windsor. The loss is estimated at \$100,000.

University News.—Lieut.-Gen. Sir Arthur Currie, inspector-general of the Canadian militia, and commander of the Canadian forces in France, has been given the degree of Doctor of Laws by McGill University, Montreal, and appointed president of that institution in succession to Sir Auckland C. Geddes, Montreal. Before participating in the great war, General Currie was in business in Vancouver. He held no university degree, but had taught school for six years. Not being a university man, the appointment of the general will be watched with interest by educators.

Medical Associations to Meet.—The annual meeting of the Canadian Medical Association will be held in Vancouver, June 22 to 25. The address in medicine will be delivered by Dr. Charles Lyman Greene, St. Paul, and the address in surgery by Dr. Edward Archibald, Montreal, on "Surgical Treatment of Ulcerated Intestinal Tuberculosis as Occurring Chiefly in Pulmonary Tuberculosis."—The annual meeting of the Canadian Public Health Association will be at Vancouver, June 21 to 23, under the presidency of Dr. Henry E. Young, Victoria, B. C.—The fortieth annual meeting of the Ontario Medical Association will be held in Toronto, May 25 to 28.

Health Board Given Additional Power.—The Provincial Board of Health of Ontario by an act of the legislature will be created a "body corporate." This results as an aftermath of the recent smallpox epidemic and the compulsory vaccination complexity. As the courts recently declined to uphold the compulsory vaccination order of the Ontario Board of Health, the officials of the board sought proper legislative authority to enforce the vaccination act should conditions again arise demanding its enforcement. It has been held by these selfsame officials that the Board of Health of Toronto, being a corporate body, had this authority, but failed to exercise it, and left the onus of doing so on the Ontario Board of Health.

Tuberculosis in Canada.—Dr. Charles D. Parfitt, Gravenhurst, before the special committee on pensions in Ottawa, has stated that during the great war 35,684 Canadian soldiers were killed in action in five years, while the number of deaths from tuberculosis in Canada during five years was 42,920. There were 8,508 cases of tuberculosis in the Canadian Expeditionary Forces during five and three-quarters years up to April 30, 1920. In the case of men discharged with the disease apparently arrested, the most critical time was the second year after the discharge when a man becomes less careful. Mortality was heaviest four years after discharge, and approached normal in seven years. He maintained that the maximum pension should be granted temporarily and should be subject to frequent revision as needed.

GENERAL

New Hospital Magazine.—The first copy of *Hospital Progress* has just appeared, this being the official magazine of the Catholic Hospital Association of the United States and Canada.

Public Health Meeting Postponed.—The date of the annual meeting of the American Public Health Association at San Francisco has been changed from August 30 to September 13 to 17. The change was necessitated by the state election which is set for August 30.

Gorgas and Noble Sail for Africa.—Last week Gen. W. C. Gorgas left for England, where he is to receive an honorary degree. He was accompanied by Brig-Gen. Robert E. Noble, who is on a six months' leave of absence. They will proceed to West Africa to study what is alleged to be an outbreak of yellow fever in that district.

Red Cross Scholarships.—Ten scholarships in public health nursing of \$1,000 each are being offered by the League of Red Cross Societies to the Red Cross membership of stricken

countries or to nations with inefficient Red Cross organizations. The course of study will be carried out at the Kings College, Woman's Department, University of London, and will begin in October. The traveling expenses to London and return will be provided for holders of the scholarships.

Medical Women Elect Officers.—At the annual meeting of the Medical Women's National Association held in New Orleans, April 26 and 27, the following officers were elected: president, Dr. Mary Elizabeth Bass, New Orleans; vice presidents, Drs. Grace W. Kimball, Poughkeepsie, N. Y., M. Louise Hurrell, Rochester, N. Y., and Helena T. Ratterman, Cincinnati; recording secretary-treasurer, Dr. L. Rose H. Gantt, Spartanburg, S. C., and corresponding secretary, Dr. Isabelle T. Smart, New York.

Baptists to Build Hospitals.—Authority to build a \$1,500,000 hospital in New Orleans was unanimously approved by the Southern Baptist Convention held at Washington, D. C. In presenting the report of the committee on hospitals to the convention, Dr. F. S. Groner of Texas declared that Baptists of the South are endeavoring to provide for adequate hospital facilities in various southern states. It is planned to erect Baptist hospitals in other cities. This plan includes one at Louisville, Ky., Lynchburg, Va., and one each in Alabama and North Carolina.

Civil Service Examinations.—The United States Civil Service Commission announces an open competitive examination for positions in the Indian Service; acting assistant surgeon, Public Health Service; surgeon in the coast and geodetic survey, and positions requiring similar qualifications, at salaries varying from \$1,000 to \$3,000 a year, for which applications will be received at any time. Examinations will be held, July 7 and September 8, for physician, Panama Canal Service, with an entrance salary of \$225 a month, with promotion to \$340 or more; and June 22, for bacteriologist, St. Elizabeth's Hospital, Washington, D. C., with a salary of \$2,500 a year.

Health Program of National Education Association.—At the annual meeting of the National Education Association to be held in Salt Lake City, July 5 to 9, inclusive, the evening session of July 7 is to be devoted to health education. The subject will be discussed by Prof. Thomas D. Wood of Columbia College, New York City; Sallie Lucas Jean, director of child health organization, New York City; E. G. Gowans, state health inspector, Salt Lake City; A. A. Slode, director of health association, Cheyenne, Wyo.; Margaret S. McNaught, commission of elementary education, Sacramento, Calif., and Catherine D. Blake, principal of Public School No. 6, Manhattan, N. Y.

Report on Coal-Tar Products by Alien Property Custodian.—Prior to the World War practically no medicines were manufactured in America from coal-tar products. This is shown in the report of the Alien Property Custodian which contains a chapter on how Germany dominated the American chemical and dyestuff industry. The report says in part:

"In medicinals very little real American manufacture existed. A few of the coal-tar pharmaceutical products were produced by two American houses in St. Louis, the Mallinckrodt Chemical Works and the Monsanto Chemical Works. The enormous dispensing and distributing business of such firms as Parke, Davis & Co., Lilly & Co., and Powers-Weightman-Rosengarten Co. successful and efficient as it was beyond comparison with similar business in any other country, seems to have involved very little real manufacture, and the materials used were largely imported. There seems to have been but little, if any German interests in this branch of the industry, except among small brokers and dealers."

Public Health Service Experiments on Milk Powders.—Since August last, the United States Public Health Service, cooperating with the Boston Baby Hygiene Association, Department of Pediatrics of the Massachusetts General Hospital and Dr. Milton J. Rosenau of the Department of Preventive Medicine in Harvard University, has been engaged in experiments to demonstrate the usability of dry milk powders. The experiments are to continue until the end of the present fiscal year, July 1, at which time a report on the work is to be published. In a preliminary statement it is said that the investigators have established the usability of such milk and that it is "unquestionably beneficial." It is to be utilized particularly for supplying all babies with milk in tropical and semitropical countries.

Nurses Elect Officers.—At the annual meeting of the American Nurses Association held last month in Atlanta, Ga., the following officers were reelected: president, Clara D. Noyes, Washington, D. C.; vice presidents, Susan D. Frances, Philadelphia, and Sarah D. Sly, Birmingham, Mich.; secretary, Katherine DeWitt, Rochester, N. Y., and

treasurer, Mrs. C. V. Twiss, New York City.—At the meeting of the National Organization for Public Health Nursing the following officers were elected: Edna Foley, Chicago, president; Elizabeth G. Fox, Washington, D. C., and Jessie Marriner, Montgomery, Ala., vice presidents, and Olive Chapman, Denver, secretary.—The National League for Nursing Education has elected the following officers: president, Anna C. Jamme, San Francisco; vice presidents, Louise M. Powell, Minneapolis, and Ida M. Stewart, New York City; secretary, Alice M. Flash, and treasurer, Bena M. Henderson.

Association of Medical Museums.—The thirteenth annual meeting of the American and Canadian Section of the International Association of Medical Museums was held at Cornell University Medical College, New York City, April 1, under the presidency of Dr. Oskar Klotz, Pittsburgh. The following officers were elected: president, W. M. Late Coplin, Philadelphia; vice presidents, Drs. James Ewing, New York City; Howard T. Karsner, Cleveland, and Harold E. Robertson, Minneapolis; councilors, Drs. Aldred S. Warthin, Ann Arbor, Mich.; Oskar Klotz, Pittsburgh; Robert A. Lambert, New York City; C. S. Silvester, Washington, D. C.; William G. MacCallum, Baltimore, and Lawrence J. Rhea, Montreal; secretary-treasurer, Maude E. S. Abbott, Montreal, reelected, and assistant secretaries, Louis Gross, Montreal, and Harry Goldblatt, Cleveland. The annual exhibition of the society of materials illustrating papers on the program of the association and the Association of Pathologists and Bacteriologists was held at Cornell University April 1 and 2.

Bequests and Donations.—The following bequests and donations have recently been announced:

St. Vincent's Home and Maternity Hospital, Philadelphia, \$5,000 by the will of James B. Rodgers.

College of the City of New York, \$7,500 for a medical preparatory fellowship; Woman's Hospital, New York City, Hospital in India of the Dutch Reformed Church of New York, each \$5,000; St. Luke's Hospital, New York, for a free bed for consumptives, \$5,000, and Society of Widows and Orphans of Army Men, \$1,000 by the will of Miss Anna M. Sandham.

Biologic Institute, Lyons, France, a donation of 100,000 francs, the interest to be used to permit one student of the University of Lyons to devote his time to laboratory work on communicable diseases, by Mr. Douglas Flattery.

St. Luke's Hospital, Davenport, Ia., \$10,000 by the will of Judge Nathaniel French.

Lynchburg, Va., Home and Retreat, a gift of \$60,000 by the family of James P. Gilliam as a memorial to Mr. Gilliam.

Industrial Home Association for Destitute Children, Trenton, N. J., \$2,000, and Mercer Hospital, Trenton, \$1,000, after the death of his wife, by the will of Wesley Creveling.

Toronto Free Hospital for Consumptives, Muskoka Free Hospital for Consumptives and Queen Mary's Hospital for Consumptives, Weston, Ont., each \$1,000 by the will of Mrs. Featherstonhaugh, Toronto.

French Hospital, Montreal, \$6,000 the result of Tag Day, May 5.

The United States Pharmacopeial Convention.—The Tenth Decennial Pharmacopeial Convention was held in Washington, D. C., May 11 and 12, under the presidency of Dr. Harvey W. Wiley. Dr. Wiley, in his presidential address emphasized the importance of maintaining a judicial frame of mind in compiling the new edition of the Pharmacopeia, and insisted that a conscientious observation must be given to the principle in law which forbids a judge in a court of equity to permit personal advantage to influence the actions of the court. He called attention to the importance of the Pharmacopeia as a book of standards and its value to the public. Dr. Reed Hunt, Boston, was elected president for the next decennium, and Dr. Lyman F. Kebler, Washington, D. C., secretary. The board of trustees elected were Drs. J. H. Beal, Urbana, Ill.; H. M. Whelpley, St. Louis; George H. Simmons, Chicago; S. Solis Cohen, Philadelphia, and Mr. F. J. Wulling, Minneapolis. By mutual consent the new committee on revision is constituted of seventeen physicians and thirty-three pharmacists and chemists. This committee organized by electing E. F. Cook, Philadelphia, chairman, and Charles H. LaWall, Philadelphia, secretary. Dr. H. C. Wood, Jr., Philadelphia, was appointed chairman of the Subcommittee on Scope. This is the committee in which physicians generally have the greatest interest as it has much to do with the selection of the drugs which are described in the Pharmacopeia. It was tentatively decided by the General Committee on Revision that the expression "mil" adopted in the last revision shall be abandoned in the new revision returning to the old expression "cubic centimeter."

International Congress of Surgery.—The Fifth International Congress of Surgery will be formally opened at the Faculté de Médecine, Paris, July 19, at 2 p. m., to be followed

immediately by a discussion on blood transfusion, introduced by Dr. Jeanbrau, Brussels. Tuesday, there will be papers on cardiovascular surgery, by Drs. Tuffier of Paris, Sencert of Strassburg, Alessandrini of Rome and Charles Goodman of New York, and a discussion on surgical hematology, by Drs. A. Depage and Goovaerts of Brussels and Evarts A. Graham, St. Louis. Fractures of the femur will be the topic of discussion at Wednesday's session, to be opened by Drs. Patel of Lyons, Meurice Sinclair of the British Army Medical Corps, and Kellogg Speed, Chicago. The entire session on Thursday will be given over to papers on the treatment of tumors by radium and roentgen rays, by Drs. Régaud of Paris, Neville S. Finzi of London, Giuseppe Mioni of Rome and Robert B. Greenough, Boston. Papers on the prevention and treatment of tetanus by Drs. Donati of Modena, Cummins of London, Sieur of Paris, and Astley P. C. Ashhurst, Philadelphia, will conclude the scientific program on Friday. Clinics will be held in the Paris hospitals on Monday, Wednesday and Friday at 9 a. m., and business meetings are scheduled for Tuesday and Thursday at 10 a. m. In connection with the congress, there will be an international exposition of fracture apparatus, which will not be limited to members of the congress. Applications for space should be made not later than July 15 to Dr. M. Auvray, 50 rue de Pierre Charron, or at the Faculté de Médecine, rue de l'Ecole de Médecine, Paris, and should contain information as to the name, title and address of the exhibitor, the title of the exhibits, the amount of space required, expressed in square meters, and whether the objects are to be exhibited in glass cases or on tables, shelves or walls. Social entertainments will include a reception to the president of the congress, Dr. William W. Keen, Philadelphia, on Tuesday evening, and a banquet on Wednesday evening, both at the Palais du Quai d'Orsay. The American committee of the congress includes Drs. Charles L. Gibson, New York City, Richard H. Harte, Philadelphia, and Lewis L. McArthur, Chicago. Physicians who desire to attend the congress are advised to make steamer reservations at the earliest possible date, as there is every indication that the demand for accommodations will exceed the capacity of available steamers.

FOREIGN

Personal.—Dr. Ernest H. Starling, professor of physiology in the University of London, has gone to India to advise the British government with regard to the formation of a central medical research institute for India and will include in his travels Bombay, the Punjab, Bangalore, Calcutta, Delhi and Pasauli.

New German University.—It has been planned for some time to found a university at Cologne. The necessary formalities were complied with last year, and the new university has recently come into being very quietly. The various colleges and institutes have thus been collected into a state university which offers a chance to relieve the overcrowding of the university at Bonn. The new university starts with 2,000 students and over forty instructors, according to the *Paris médical*. It is rather a resurrection than a new creation, as Cologne was a seat of higher learning centuries ago, and the Akademie für praktische Medizin has been in existence as a municipal institution since 1904.

Physicians' Children in Austria.—Certain members of the profession in Austria have organized a central aid committee which is now collecting data in regard to the children in the families of physicians who would like to send them out of the country for a time. A question-blank has been sent to all physicians in the country, asking them to specify their wishes in the matter and list the eligible children. They must be over 7 and free from psychic and physical disease and enuresis. The committee hopes to get in touch with medical organizations in other countries and be able to place the children in homes elsewhere for a few weeks or months. The address of the committee is the Zentralhilfskomitee der Aerzte Oesterreichs, Vienna I, Börsegasse 1, Austria.

Tribute to Pure Food Champion in the Netherlands.—Dr. P. F. van Hamel Roos, an Amsterdam expert in chemistry, founded in 1884 a monthly devoted to investigation of adulterations in foods, drugs, etc., the *Maandblad tegen Vervalschingen*, and has published it regularly since. It has made him many enemies but also many friends, and a number of his friends arranged to make the April number of his monthly a souvenir issue in honor of his seventieth birthday. It contains a number of articles by leading chemists and physicians, and an interesting account of how the whole issue was planned and published without his knowledge,

while he was making up and correcting the proofs of the regular April number, which will appear later as the May issue. Of this *jubiläum-nummer* one of the writers says, "This adulteration of the April number of the *Maandblad* is one of the few adulterations which have got past van Hamel Roos undiscovered."

The Profession in the German Empire.—The *Deutsche medizinische Wochenschrift* states that at the last census there were 31,602 physicians in the German empire. The number is now estimated at 40,000 although the extent of the empire has been much reduced, as many physicians have lost their positions in the colonies and other countries and have returned to the fatherland, while the medical officers dismissed from the military service swell the list of medical men and there is almost unprecedented flocking to the medical schools. The employment bureau of the Aerzteverband had 3,163 vacant positions to fill in 1914, but in 1919 there were only 1,614 vacancies. At present there are 4,000 applications on file, some of them waiting for more than a year, without any positions being open to candidates. Our exchange adds "The prospects for the future of the medical profession are consequently the worst that could be imagined."

Australasian Medical Congress.—The eleventh session of the Australasian Medical Congress will be held, after an interval of more than six and one-half years, in Brisbane, Queensland, August 23 to 28, 1920, under the presidency of the Hon. William F. Taylor. The work of the congress has been divided into eleven sections, as follows: medicine, presided over by Dr. Richard R. Stawell, Melbourne; surgery, presided over by Dr. H. S. Newland, Adelaide; obstetrics and gynecology, presided over by Dr. Fourness Barrington, Sydney; pathology and bacteriology, presided over by Dr. William J. Penfold, Melbourne; public health, presided over by Dr. John H. L. Cumpston, Melbourne; ophthalmology, presided over by Dr. A. Leo Kenny, Melbourne; otology, and laryngology, presided over by Dr. Herbert W. J. Marks, Sydney; diseases of children, presided over by Dr. W. F. Litchfield, Sydney; naval and military medicine and surgery, presided over by Col. George W. Barber, Perth; neurology and psychologic medicine, presided over by Dr. Henry C. Maudsley, Melbourne, and dermatology and radiology, presided over by Dr. T. G. Moldsworth, Sydney.

Deaths in Other Countries

Dr. Blanco Ledesma of Ciudad Bolivar, Venezuela, a writer on tropical pathology, committed suicide, Oct. 19, 1919.—Dr. Walter Georgi, assistant at the Serum Institute at Frankfort on the Main, whose name has been prominent of late in connection with the Sachs-Georgi precipitation test for syphilis. He succumbed to severe influenza, aged 31.—Dr. F. Knauff, formerly professor of hygiene and legal medicine at the University of Heidelberg, aged 85.—Dr. Mariano Alcedán, a surgeon of Iquique, Chile, until recently when all persons of Peruvian birth were expelled from the city by the Chilean government.—Dr. H. Hessler, privatdozent for otology at the University of Halle, aged 69.—Dr. Moriz Benedikt, professor of electrotherapy and neuropathology at the University of Vienna, author of numerous works on these specialties, on "second life," brains of criminals, etc., aged 85.—Dr. C. T. Carvallo, called the founder of gynecology in Peru, the first incumbent of the chair for gynecology in the University of Lima, founder of the Academia Nacional de Medicina, and one of the founders of the Sociedad Peruana de Cirugía, now being organized.—Albert J. Chalmers, M.D., F.R.C.S., D.P.H., organizer and some time professor of physiology and pathology of the Ceylon Medical College, later director of the Wellcome Research Institute at Khar-toum, joint author with Dr. Aldo Castellani of a Manual of Tropical Medicine and accredited with much original work in pathology, notably on mycetoma, died, April 6, at Calcutta, aged 50, from infective jaundice.

LATIN AMERICA

Personal.—Drs. Jorge Vargas S. and Rafael Domínguez of Bogotá, Colombia, have been visiting clinics at Rochester, Minn., and Chicago.—Dr. Rodolfo Arce of Panamá is now in New York on his way from France, where he served during the war.—The organized ophthalmologists of Mexico have recently admitted ear and throat men to their society, so the name has been changed to the Sociedad Mexicana de Oftalmología y Oto-rino-laringología. Dr. Rafael Silva has been elected president and Dr. Vélez continues as secretary of the organization.

Government Services

Bill for Tuberculosis Hospital

Provision for the erection of a hospital for tuberculous patients in Colorado is made in a bill introduced by Congressman Timberlake of that state. The land must be donated without charge to the government and provision is made for construction thereon of a complete hospital plant at a cost of \$1,500,000. The hospital will be used for the treatment of tuberculous patients who are beneficiaries of the War Risk Insurance Bureau and the Public Health Service.

Health Conditions of the Army

Health conditions among troops in the United States are excellent. The admission and noneffective rates show a slight decline from the unusually low rates of last week. Epidemic diseases are still reported from the camps receiving large numbers of recruits. Camp Grant heads the list with 13 new cases of measles; Fort Oglethorpe, 10; Camp Humphreys, 8, and Camp Pike, 4. There have been reported throughout the various camps a few cases of pneumonia, malaria and one case of scarlet fever. The death rate is considerably lower than last week. There were 10 deaths, 6 of which were caused by communicable diseases, 5 dying of tuberculosis and 1 of pneumonia.

Government Regulates Use of Hot Springs

The government is making complete regulations with reference to the use of hot waters prescribed by physicians at the Hot Springs, Ark., reservation. This is accomplished by a provision in the Sundry Civil Bill which has just passed the House of Representatives and gives the Secretary of the Interior authority to assess and collect reasonable charges from physicians for the exercise of the privilege of prescribing the mineral water at the reservation. The money received from the exercise of this authority will be used in the protection and improvement of the reservation. The purpose of this regulation is to permit only registered physicians to prescribe the waters; to prevent improper charges, and to maintain high medical standards.

Public Health Service Takes Over Army Hospital

The Public Health Service will take over from the War Department the tuberculosis sanatorium at Fort Bayard, N. M.; it will be used for the treatment of discharged and disabled soldiers suffering from tuberculosis. The sanatorium is well fitted for the treatment of such patients by reason of its location and climate and the fact that outdoor life may be followed during a large portion of the year. The sanatorium will provide 1,000 beds. It is the intention of the Public Health Service to take only ambulatory cases of tuberculosis at Fort Bayard. Patients will be admitted only after careful observation to make sure that their condition is suitable for successful treatment at the high altitude of Fort Bayard. In general it is the policy of the Public Health Service not to move patients from their home localities, for experience has shown that such removal often has an unfavorable effect. Patients for this sanatorium will be drawn principally from the Middle West and South.

Appropriation Asked for Public Health Service

Forty million dollars is the amount which will be required by the Public Health Service in the year 1921 for medical, surgical and hospital service and supplies for war risk patients.

Dr. H. S. Cumming, Surgeon-General, has made formal request in a letter to the speaker of the House of Representatives that this amount be made available. In part Dr. Cumming says:

"The present rate of expenditures of the Public Health Service for hospital care and treatment of its beneficiaries is about \$2,387,000 per month or \$28,644,000 for the year.

"There are at present in government and civilian hospitals about 14,500 patients, and the service is furnishing about 69,500 office treatments and making 45,000 physical examinations per month. It is believed that the number will increase to 20,000 in-patients and that there will also be a corresponding increase in the number of office treatments and physical examinations during the coming year. It is therefore thought that the appropriation for next year should be at least 40 per cent. more than expenditures at the present time."

Psychology of Aviation

Dr. Harry M. Johnson, S. C., U. S. Army, in charge of the Department of Psychology of the Air Service Medical Research Laboratory, reports that during the year research was prosecuted along two distinct lines: an effort to gain a somewhat more intimate acquaintance with the effects of low oxygen on the integrity of response, and an effort to develop more sensitive tests for the detection of general aptitude for aviation work, and of its deterioration in the earlier stages of staleness. Extensive and detailed statistical study of the records of more than 6,000 classification tests for resistance to deprivation of oxygen was made. An attempt was made also to demonstrate the progress of impairment of behavior by the use of an objective record of the speed and accuracy which the subject can maintain in carrying on work of uniform difficulty as the supply of oxygen is being diminished. Researches were also made on the influence of diminished air pressure, simulating an altitude of 20,000 feet, on the time required for selective reaction to a number of combinations of signals visually perceived. A study of associative responses was also begun. It is believed that two forms of test, if sufficiently refined, might prove to be quite valuable in the diagnosis of aviaional ability and in exhibiting its impairment. These tests are (a) of the ability to control the coordinated activity of certain systems of voluntary muscles and (b) of the relative time required for selective reaction to one of three signals presented successively and in irregular sequence under a standard condition of observation and under a condition of observation so difficult as to be trying. The energies of the department were also devoted to the supervision of the psychologic features of the routine tests at laboratories, to the administration of classification tests at the local fields and to cooperation with other departments in the administration of tests in which the department of psychology was not directly interested.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS	NORTH CAROLINA
Chicago—Fischer, C.	Troutmans—Ervin, C. E.
Huber, P. R.	
St. David—Mercey, R. J.	
NEBRASKA	PENNSYLVANIA
Omaha—Davis, D. L.	Beaver—Purdy, J. E.

Foreign Letters

PARIS

(From Our Regular Correspondent)

April 22, 1920.

Living Micro-Organisms in Paper

Dr. Galippe recently presented before the Academy of Sciences a very interesting communication on living micro-organisms in paper and their resistance to heat and the action of time. However little one may know about the processes of manufacture, it is not surprising that paper contains many micro-organisms. But it was generally supposed that these were destroyed in the course of the many operations which are undergone in the stages from pulp to paper. Now, according to the researches of Galippe, this is not the case, and all papers in use harbor living and cultivable micro-organisms. What is more, these organisms offer considerable resistance to heat, since filter paper may be subjected for half an hour to a temperature of 120 C. in an autoclave without the least effect on them. Chemists, therefore, will have to take certain precautions in definite cases. Galippe wondered if these infinitely minute objects which are so resistant to heat were any more sensitive to the action of time. With this in mind, he directed his attention to papers manufactured in the eighteenth and fifteenth centuries, and after repeated examinations, he was able to demonstrate the important fact that even in the fibers of these papers are found micro-organisms susceptible to cultivation and endowed with lively motion. In the paper of one incunabulum, Galippe found a bacillus at least morpholog-

ically identical with the tetanus bacillus. Encouraged by these results, he directed his researches to paper from Chinese manuscripts dating back to a very early epoch, certainly some centuries before the invention of printing. There again he found these microscopic beings in the fibers of the paper; planted in a favorable medium, the micro-organisms multiplied and appeared active and full of life. Going still further, Galippe decided to investigate whether living organisms could be found in Egyptian papyri, more than 2,000 years old. It is known that the Egyptians made their papyrus from the epidermis of the sheaths and stems of *Cyperus papyrus*. The strips were joined together, pressed and superposed, and made imputrescible, and thanks to the perfect methods of manufacture, they have been able to resist the destructive action of time, even to the present day.

Galippe was able to study a fragment of papyrus of the Ptolemaic epoch, that is, dating back to about 200 B. C. The structural elements of the papyrus were unchanged and the vegetable cells and fibers of which it was built up were found intact. The cells had not only preserved their form and reciprocal relations, but in some of them were again found perfectly distinguishable micro-organisms. Quite curiously, after three hours' contact with sterile water, these micro-organisms, immobile for centuries, regained their activity and showed themselves endowed with motion. More than that, when placed in a favorable culture medium they multiplied, and their mode of development and the different phases of their evolution could readily be studied.

Administrative Meddling in Medical Affairs

Dr. J. Noir, editor-in-chief of the *Concours médical*, has just published a long protest against the administration's meddling in medical matters. He cites, among other documents, a circular addressed to the principals of the Paris schools for distribution to parents of children having diphtheria. The circular is entitled: "Instructions to Families on the Precautions to Be Taken Against Diphtheria." The first part of the circular, which mentions the dangers and method of transmission of the disease and the necessity for isolation of actual and suspected cases, can readily be approved. Unfortunately, there follows a chapter on the treatment of diphtheria, in which the statement is made that this consists in the disinfection of the throat and nose, the "haunts" of the bacillus, by gargling, irrigating, inhaling or atomizing of medicaments which are capable of destroying the micro-organisms. It is also stated that when there is great danger of contagion or isolation of the children is impossible, it is necessary to give a preventive injection of antidiphtheritic serum not only to the carriers of the bacillus, but also to all who have been exposed to infection. Finally, it is averred that preventive serotherapy in children, if employed by the family physician according to certain rules, is absolutely without danger.

Dr. Noir demands on what authority the author of the circular forces on family physicians disinfection of the nose and throat which is so often an illusory procedure, and on what authority is based the obtrusion of preventive serum injections, when some of the physicians of children's hospitals, and these not the least competent, are opposed to its systematic use, claiming that, during the incubation period, a preventive injection may diminish or even destroy the effect of a therapeutic injection which the attending physician may later be obliged to make. But what seems particularly regrettable in the circular is the underscored statement that preventive serotherapy at the hands of the family physician presents absolutely no danger if certain rules are followed. What are these rules (which have not, however, been specified) which give assurance of safety from anaphylaxis and other accidents that occasionally can

assume a grave aspect? In the instructions accompanying the tubes placed on sale by the Pasteur Institute of Paris, one reads on the contrary that any injection of heterogenous serum may cause accidents, immediate or delayed, which sometimes require serious treatment. It is comprehensible that the foregoing circular, through the categorical statement which has been quoted, in case of even slight accident, risks discrediting the physician in the estimation of the family and greatly increases his responsibility.

LONDON

(From Our Regular Correspondent)

April 23, 1920

Village Tuberculosis Settlements

An important deputation has waited on the minister of health to urge the establishment of village settlements in connection with the treatment of discharged tuberculous soldiers. It was pointed out that sanatorium treatment for tuberculosis, even when accompanied by training in a suitable occupation, had been found inadequate as a means of combating the disease. The general experience had been that patients who return from a sanatorium to their homes and former occupations are unable permanently to earn a living or maintain health. The patients should pass through a threefold course: first, of sanatorium treatment; second, of training, and third, of permanent settlement in suitable surroundings. The village settlement should be a natural development of the sanatorium and training colony, and the patient should be in a position to look forward to being able, on completion of his course of treatment and training, to take up his permanent residence in a settlement where, still in close touch with the sanatorium, he could work under conditions that would enable him to maintain his health and have his family or dependents with him. In the settlement the patient and his family would have to be housed, the necessary workshops and other buildings would have to be provided, and—in the case of the civilian—the patient's earnings would have to be supplemented; but the community would gain in the result by the prevention of the spread of infection and the fact that the tuberculous patient would remain a productive worker. As illustrating the results of establishing a village settlement on these lines, it was stated that at the Cambridgeshire Tuberculosis Colony, out of thirty patients who had passed from sanatorium treatment and training into the settlement, not one had died in four years.

Dr. Addison, minister of health, assured the deputation of his good will. There were, however, various difficulties to overcome. The success of a village settlement would depend even more on the personality of the man in charge than on the material provision made. As regards finance, the provision of ten settlements for not less than 200 patients each, as proposed by the Interdepartmental Committee, would, he considered, cost much more than the sum of \$5,000,000 suggested by it. Again, as minister of health he could not consider only the case of the ex-soldier; he had to consider also the civilian population, who had no pensions to supplement their earnings. Further, the Cambridgeshire Tuberculosis Colony was managed by a voluntary organization, but in the establishment of further settlements it would be necessary to rely in the main on local authorities. The problem was, therefore, one of much complexity; but a comprehensive scheme, dealing with all the various issues involved, was under discussion.

The Birth Rate

An address on "The Fertility of the Various Social Classes in England and Wales from the Middle of the Nineteenth Century to 1911" was given before the Royal Statistical Society by Dr. T. H. C. Stevenson, superintendent of statistics, General Register Office. He said it seemed likely

that large families promoted high mortality, and that high mortality promoted large families. It was evident that the decline in infant mortality during the present century was closely bound up with the decline in the birth rate. It was therefore all the more discreditable to the last quarter of the nineteenth century that during that period the rate of infant mortality did not decline, although the birth rate was steadily falling. In the deficient fertility of the classes which, having achieved most success in life, were presumably best endowed with the qualifications for its achievement, the nation was confronted with a new and formidable fact. The correspondence in time between the date of the Bradlaugh-Besant movement (1876) and the commencement of the fall in the birth rate in 1877 had always been obvious. The subsequent record of the decline was in fact precisely what might be expected on the supposition that it had been brought about through the neomalthusian views and methods having secured gradually increasing acceptance. After all allowances had been made, the professions, which formed the purest examples of middle-class occupations, were exceedingly infertile. The total fertility of all the professions tabulated, except nonconformist ministers, was underneath the lowest standard, though their very small rate of child mortality caused the clergy of the established church slightly to exceed that standard in regard to effective fertility. The exceptionally low figures for naval and military officers might be due to circumstances in their case rendering the maintenance of a family specially difficult; but the failure of this fine stock to reproduce itself was none the less to be regretted. The most remarkable instance of all was that of persons describing themselves as of "private means." In their case, presumably, the anxieties and difficulties which militated against fertility were at a minimum, but their fertility was also at a minimum. The reason might conceivably be that the more energetic and capable of the class referred to did follow some definite occupation, and that their fertility was higher than that of the inferior remainder of their class. The effect of female occupation in lowering fertility was clearly established. If we attributed to human volition the fall in the nation's fertility, these facts were readily explained; but if we refused to acknowledge this agency, it was necessary to assume the reduction of female fertility by nondomestic work as a law of nature.

VIENNA

(From Our Regular Correspondent)

April 24, 1920.

Present Sociological and Economic Conditions of the General Practitioner

As a result of the war, the general condition of the profession has suffered a severe change, which is felt keenly in all quarters. One of the chief undesirable effects is the enormous increase in the number of graduated physicians. As long as the army in the field required large numbers of physicians for the medical care of the huge numbers of diseased, disabled or otherwise ill soldiers, the study of medicine was much favored and encouraged by the military authorities, and the examinations were so facilitated that the war-doctors, as they were termed, had really only nominal teaching. Naturally, these men try to augment their defective knowledge now in hospitals. Thus it happened that all vacant appointments as junior officers in the hospitals, in the dispensaries and ambulatories are now filled by these doctors. They all also desire to practice. Furthermore, in those parts of the old Austrian empire which now have been allotted to the new or successor states, large numbers of physicians of German nationality had been practicing for years. They all had to leave, because national and racial hatred became too strong against them. All public appoint-

ments were, of course, given to physicians of the respective nationality, without paying too much heed to the qualification. Naturally the men who had been maneuvered out of their living fled to Vienna, only to increase there the numbers of insufficiently occupied practitioners. While in 1913 the population was 2,250,000, with nearly 3,000 physicians, now we have more than 4,000 men to minister to the ailments of only 1,860,000 inhabitants (census of Dec. 31, 1919). According to statistics compiled by the Vienna Medical Council for assessment purposes, only 20 per cent. of the total number earn enough to keep up the standard of life they were accustomed to formerly. A little more than 60 per cent. may just manage to make both ends meet by hard endurance; the remaining 20 per cent. have to undergo incredible privations. Hunger, want of proper clothing and of reading matter tend to drive them to pauperism and proletarianism. This is no exaggeration. The conditions are appalling. Many of the middle-aged men have lost their private practice through their five years' absence from home with the army or as prisoners of war. Lately, the public has shrunk back from calling in a physician because the fees have been raised, although they are only doubled or trebled. Still, if a man charges 25 kronen for a call, he gets only what is worth about 12 cents in American money. Only a few practitioners can command fees of double that sum. Specialists are somewhat better off. The central medical organization tries to help whenever possible. By uniform action of all those concerned the organization succeeded, after a long struggle, in increasing the rate of payment of the panel or *krankenassen* physicians (sickness insurance clubs). These men get now double payment, in some instances even 60 per cent. more than that, and, besides, part of their rent is paid for them. Their fixed salary reaches from 14,000 to 18,000 kronen a year, specialists getting from 24,000 to 26,000, which represents material help to the individual. In the hospitals also an improvement of the prevailing economic position of physicians has been obtained. Uniform cooperation of the juniors and seniors resulted in the acknowledgment of the rule that every work must have its price. A salary of 900 kronen a month, as well as the right to buy their board for a small sum, has been conceded to the juniors, who hitherto have been unpaid. It must be added, however, that the organization had prepared everything for a medical strike and that in spite of the adverse feeling against such an inhumane weapon, it would have been put into action had this become necessary. The profession is well aware here that its most powerful weapon must not be used except for the most overwhelming necessity. As the government is scheming socialization of the profession, the medical strike will come into question when the problem of "to be or not to be" has to be decided.

An important step to improve conditions has been made by obtaining the system of free choice of physician for a large number of "panel" societies. Various unions of earning people tried to simplify matters for themselves by appointing a special physician for their members. The organization, however, endeavors to let all physicians participate in the possibility by encouraging such unions to adopt the system that permits the patient to call in the man whom he trusts without undue expense to himself, at the same time enabling the physician to be sure of his payment. Thus the civil service men, the postmen and the tramway men have agreed to this system, with fairly satisfactory results to both parties. On the other hand, a serious struggle is going on between the organization and the state as to the upper wage limit of the members of compulsory sickness insurance clubs (*krankenassen*). While the physicians want all men earning more than 24,000 kronen a year to be excluded from the panel, the other side wants to fix the limit at 48,000 kronen.

This would mean the end of private practice altogether, for the majority of laborers earn now between 24,000 and 48,000 kronen a year, while the classes hitherto called middle class have dropped out and drift hopelessly into pauperism. A complete shifting of the social strata has taken place, and the members of the profession are victims of this shifting, too. Many physicians had to apply for and accept gifts of charity, which are being tendered them in a most gracious and generous way from all parts of the world, neutral as well as previously enemy. Apart from other help, it must be mentioned how nobly the profession of Holland acted, by inviting several hundred children of Austrian physicians to Holland, where they remained three months and restored their semistarved, anemic bodies and their depressed souls. The average gain of weight was 6 kilograms (13 pounds) per child, and of growth, 5 cm. (2 inches). This shows how urgently the children needed the vitamins owing to the lack of milk, fat and eggs at home. Another noble deed was that of the Norwegian profession, whose members have sent several railway cars full of provisions for the Vienna physicians, containing fish, meat, chocolate, condensed milk, fat and flour. That this gift was gladly accepted proves under what stress large numbers of us are living here; it may be added that the "export" of physicians' children has been organized on a large scale for the summer time. Holland, Norway, Sweden and Switzerland vie with one another in magnanimous help for our profession.

Clinical Courses in the Summer Term

The official catalogue of the medical faculty of the Vienna University announces no less than 448 different classes and courses, given by twenty-one ordinary, 113 extraordinary professors and 152 assistants, and open to all students of the university on payment of the regular fees. It may be explained that ordinary professors are those who have been appointed as regular clinical teachers in a clinic, while the extraordinary professor has no clinic of his own, but is more of a guest at a clinic, but may have a ward under his special care. The fees have been raised now by an order of the board of instruction about six times more than they were before the war, and the postgraduate classes, ten times. This is very much for our students, but a trifle for the American or foreign physician. A private course costing 1,000 kronen costs, at the present rate of exchange, \$5; for this sum a quite first class course may be obtained. There will be delivered eight classes on physiology, thirty-five on pathologic anatomy, eighty-one on general pathology, forty-six on surgery, twenty-two on rhinolaryngology, twenty-nine on otology and forty-one on diseases of the skin, besides numerous others. On radiology only twelve classes will be held, but in the near future this branch of our art will be much better cared for, as it is intended to organize a huge central radiologic institute for all the public hospitals of Vienna, so as to insure the services of absolutely competent men for this important branch of medicine. There also the comparatively enormous quantities of radium and its active compounds, which are available in Vienna, will be turned to suitable use, enabling earnest studies to be conducted with them.

Statistics of the Winter Term

In 1919-1920 the winter term of the university lasted from October to March; 4,282 ordinary students and 221 extraordinary studied medicine in Vienna, among them 578 women. The previous term the figures were 3,823, with 557 women and 126 foreign students. The constant increase of medical students is well marked since 1910, and went up by bounds since 1915. The number of physicians has been increasing since 1915 far more rapidly than the increase of population, which has been practically nil for two years.

Deaths

Henry Holbrook Curtis ☉ New York City; Yale University, New Haven, Conn., 1880; aged 63; a specialist in laryngology and otology; visiting laryngologist to the New York Throat, Nose and Lung Hospital; consulting otologist to the Nassau County Hospital, Long Island, and consulting laryngologist to the Minturn Diphtheria and Scarlet Fever Hospital; a member and once president of the American Laryngological, Rhinological and Otological Society and New York Academy of Medicine, and a member of many foreign otological, laryngological and rhinological societies; died, May 15.

Don DeForest Grout, Waterbury, Vt.; University of Vermont, Burlington, 1872; aged 70; for eleven years superintendent of the Vermont State Hospital for the Insane, Burlington; consulting physician to the Fannie Allen Hospital, Burlington; local surgeon of the Central Vermont Railway; health officer of the town of Waterbury; president of the Vermont State Tuberculosis Commission, and vice president of the Vermont Society for the Prevention of Tuberculosis; a member of the legislature in 1888; died, April 19, from angina pectoris.

Salphronius H. French ☉ Amsterdam, N. Y.; Albany (N. Y.) Medical College, 1859; aged 82; formerly consulting surgeon to the Amsterdam Hospital; surgeon of United States Volunteers during the Civil War; for several years health officer of Amsterdam, and president of the Amsterdam City Library; one of the founders and since 1887 president of the Amsterdam Savings Bank; died, April 30, from angina pectoris.

Charles M. Lutterloh, Jonesboro, Ark.; Vanderbilt University, Nashville, Tenn., 1890; aged 57; a member of the Arkansas Medical Society, and president of the Tri-State Medical Association of Tennessee, Arkansas and Mississippi in 1911; vice president of the American Trust Company, Jonesboro, and president of the Craighead County Board of Health; died, May 3, from heart disease.

Marshall Lebanon Brown, Brooklyn; Dartmouth Medical School, Hanover, N. H., 1867; aged 82; a member of the Massachusetts Medical Society; for three years surgeon of the Sixty-Ninth New Hampshire Volunteer Infantry, during the Civil War; for many years a practitioner of Boston; died at the home of his daughter in Flatbush, L. I., May 5, from heart disease.

William Brown Ewing ☉ Salt Lake City, Utah; Rush Medical College, 1885; aged 60; secretary of the Utah State Medical Association from 1912 to 1917; a specialist in neuropathy; captain, M. C., U. S. Army, and discharged, Jan. 8, 1919; examiner of the insane for the third district court; died in St. Mark's Hospital, Salt Lake City, April 24, from heart disease.

Frederick Sohon ☉ Washington, D. C.; Georgetown University, Washington, D. C., 1888; aged 53; captain, M. R. C., U. S. Army; professor of physical diagnosis in his alma mater; a medical officer of three expeditions under the command of the late Commander Peary, U. S. Navy, to the Arctic regions in 1897, 1903 and 1905; died, May 7.

Thomas James McCrory ☉ Racine, Wis.; Northwestern University Medical School, Chicago, 1905; aged 42; lieutenant, M. C., U. S. Army, and discharged Feb. 21, 1918; who was injured in an automobile accident, May 2, died in St. Mary's Hospital, Racine, from his injuries, May 5.

Alfred Jones, Cornersville, Tenn.; University of Nashville, Tenn., 1858; aged 81; a member of the Tennessee State Medical Association; a Confederate veteran; for two terms a member of the House of Representatives and for three terms a member of the state senate; died, April 16.

George Latham Underwood, Belmont, Mass.; Harvard University Medical School, 1858; a member of the Massachusetts Medical Society; superintendent and resident physician at the State Hospital, Rainsford Island, for several years; died recently.

John Ralph Pattee ☉ Dover, N. H.; Eclectic Medical Institute, Cincinnati, 1888; aged 59; county physician of Merrimack County, N. H., and chairman of the board of health; died in the Wentworth Hospital, Dover, April 27, from cerebral hemorrhage.

Emile Poirier, Salem, Mass.; Laval University, Quebec, 1881; aged 63; a member of the Massachusetts Medical

☉ Indicates "Fellow" of the American Medical Association.

Society; one of the commission that had charge of the rebuilding of Salem after its devastation by fire in 1914; died, April 29.

Thomas Davidson Starbuck, Davenport, Iowa; State University of Iowa, Iowa City, 1902; aged 48; a member of the Iowa State Medical Society; died in Mercy Hospital, Davenport, May 11, from septicemia following the extraction of a tooth.

Benjamin Lucky Branch, Collierville, Tenn.; Memphis (Tenn.) Hospital Medical College, 1883; aged 63; a member of the Tennessee State Medical Association; president of the alumni association of his alma mater in 1909; died, April 25.

Robert N. Downs, Philadelphia; University of Pennsylvania, Philadelphia, 1856; aged 90; for many years a member of the consulting staff of the Germantown Hospital; a member of the College of Physicians of Philadelphia; died, May 1.

John William Bush ☉ Hot Springs, Ark.; University of Tennessee, Nashville, 1906; aged 51; lieutenant, M. R. C., U. S. Army, and discharged Jan. 3, 1919; a specialist in urology; was shot and killed by his brother-in-law, April 27.

George Miller Beard, Horseheads, N. Y.; College of Physicians and Surgeons in the City of New York, 1866; aged 80; a veteran of the Civil War; once a member of the New York General Assembly; died, May 1.

Alfred Kimball Hills, New York City; Hahnemann Medical College, Philadelphia, 1870; aged 79; for many years editor of the *Medical Times* and a member of the New York Academy of Medicine; died, May 2.

William J. Mairs, Newton, Mo.; Louisville (Ky.) Medical College, 1878; aged 65; a member of the Missouri State Medical Association; formerly a member of the state legislature; died, April 6, from carcinoma.

Adolph Zederbaum ☉ Los Angeles; University of Berlin, Germany, 1883; University of Dorpat, Russia, 1887; aged 71; died on the operating table in Methodist Hospital, Los Angeles, May 1.

William Barber Fellers, Roanoke, Va.; University of Maryland, Baltimore, 1910; aged 35; a member of the Medical Society of Virginia; died, April 23, from carcinoma of the kidney.

Zeba Darling French, Lawrenceville, Ill.; University of Iowa, Keokuk, 1865; aged 82; surgeon of the Third U. S. Volunteer Cavalry (colored), during the Civil War; died, April 27.

Mason Beach Hughes, Bloomsburg, Pa.; Jefferson Medical College, 1869; aged 78; formerly a member of the legislature from Luzerne County; died in a hospital in Philadelphia, May 6.

James Garland Boxley, Louisa, Va.; Medical College of Virginia, Richmond, 1863; aged 77; assistant surgeon in the Confederate Navy during the Civil War; died, April 23.

John Francis Canavan, Bridgeport, Conn.; Eclectic Medical College, Cincinnati, 1913; aged 32; died at the Wallum Lake (R. I.) Sanatorium, April 20, from tuberculosis.

B. S. Hunt, Sidney, Ohio; Pulte Medical College, Cincinnati, 1877; aged 69; president of the American Chemical Company; died, April 24, from cerebral hemorrhage.

William L. McGrew, Warren, Ohio; College of Physicians and Surgeons, Baltimore, 1890; aged 73; also a clergyman of the Methodist Episcopal Church; died, April 21.

Joab Stowell, Jr., North Amherst, Mass.; University of Minnesota, Minneapolis, 1890; aged 57; a member of the Massachusetts Medical Society; died, March 26.

Elizabeth S. Horr, Waterford, Me.; Woman's Medical College of the New York Infirmary for Women and Children, New York City, 1872; aged 87; died, April 8.

John S. Holley, Bellevue, Macon, Ga.; Atlanta (Ga.) Medical College, 1882; aged 63; at one time city health officer of Tyler, Texas; died, April 20, from nephritis.

Edward Louis Miller, Mount Dora, Fla.; University of Maryland, Baltimore, 1884; aged 61; for many years a practitioner of Johnstown, Pa.; died, April 23.

John J. Patterson, Boaz, Ala.; Georgia Eclectic Medical College, Atlanta, 1878; aged 74; died in Etawah County, Ala., March 29, from cerebral hemorrhage.

Harry Gove, St. Andrew's, N. B.; College of Physicians and Surgeons in the City of New York, 1867; aged 74; died, January 28, from chronic gastritis.

William H. Snyder, Hastings, Mich. (license, Michigan, fourteen years of practice, 1900); aged 79; died, April 29.

Jonathan Price, Anna, Ill.; University of Tennessee, Nashville, 1882; aged 72; died, April 23, from septicemia following an infected wound of the foot.

Henry Kelby Gardiner ☉ Wakefield, R. I.; Dartmouth Medical School, Hanover, N. H., 1882; aged 63; died, April 30, from carcinoma of the liver.

William Allen Barnes, Martinsburg, W. Va.; Hahnemann Medical College, Philadelphia, 1895; aged 54; died, May 1, from pernicious anemia.

Esom G. Farris, St. Cloud, Fla.; Central College of Physicians and Surgeons, Indianapolis, 1883; aged 77; died, February 6, from influenza.

Wade Emmett Simpson, Indianapolis; University of Indianapolis, 1903; aged 42; died in Martinsville, Ind., May 3, from valvular heart disease.

William Henry Harrison Palmer, Napa, Calif.; Willamette University, Portland, Ore., 1889; aged 79; died, April 15, from senile debility.

Samuel Corbus Helmick, Commercial Point, Ohio; Miami Medical College, Cincinnati, 1871; aged 71; died, April 28, from heart disease.

Joel R. Davis, Marion, Ind.; Curtis Physio-Medical Institute, Marion, Ind., 1899; aged 80; died, April 18, from bronchopneumonia.

Luther Alvin Davis ☉ Wadena, Minn.; University of Minnesota, Minneapolis, 1901; aged 42; died, April 22, from Addison's disease.

Joseph H. Hooper, Dallas, Texas; University of Nashville, Tenn., 1866; aged 79; died in Thorp Springs, Texas, March 28, from senility.

Leidy Shimer Hagerty, Arlington, N. J.; University of the South, Sewanee, Tenn., 1900; aged 44; died, April 21, from heart disease.

Jesse D. Garr, Summitville, Ind.; Eclectic Medical Institute, Cincinnati, 1896; aged 63; died, April 15, from acute gastritis.

Ovila Clement Gelineau, Indian Orchard, Mass.; Baltimore Medical College, 1894; aged 48; died, March 29, from diabetes.

William H. Young, Springdale, Ark.; Kansas City (Mo.) Medical College, 1883; aged 73; a Confederate veteran; died, April 7.

Harwin O. Rockwell, Crown Point, Ind.; Chicago Medical College, 1881; aged 70; died, May 4, from valvular heart disease.

Edwin Llewellyn Chase ☉ Shrewsbury, Mass.; Baltimore University, 1898; aged 47; died in Smyrna, Me., April 29.

William L. Stone ☉ Pittsburgh; University of Pennsylvania, Philadelphia, 1880; aged 61; died, April 21.

John William Heacock, Talladega, Ala.; Tulane University, New Orleans, 1867; aged 83; died, April 27.

R. F. Harnesberger, Beckville, Texas; Medical College of Georgia, Augusta, 1884; aged 62; died, April 19.

John Magee, Troy, N. Y.; College of Physicians and Surgeons, Baltimore, 1880; aged 64; died, April 19.

John B. Cunningham, Norwich, Conn.; University of Vermont, Burlington, 1890; aged 52; died, April 1.

William A. Stephens, Cleveland; Western Reserve University, Cleveland, 1887; aged 59; died, April 15.

W. J. Trask, Great Cacapon, W. Va. (license, West Virginia, 1881); aged 62; died about April 23.

James Richards, Omaha; Missouri Medical College, St. Louis, 1890; aged 75; died, April 15.

Marriages

MARCUS BEEKMAN, Natchez, Miss., to Miss Lena M. Triche of Newellton, La., at Natchez, March 27.

NEIL SEWELL MOORE, St. Louis, to Miss Helen Hereford of Springfield, Ill., April 10.

GEORGE MICHAEL FITZGERALD to Miss Eileen Phelan, both of Chicago, recently.

NELSON MILES HOLDEN to Miss M. Alice Stengle, both of Brooklyn, May 3.

JACOB A. KOHN to Miss Jeanette Herma Schultz, both of Chicago, May 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED NOSTRUMS

How the Bureau of Chemistry Is Protecting the Public Against "Patent Medicines" Sold Under False and Fraudulent Claims

Seelye's Ner-Vena.—A quantity of this product, shipped in January, 1917, by the A. B. Seelye Medical Co. of Abilene, Kan., was analyzed by the Bureau of Chemistry, which reported that the preparation was a syrup containing alcohol and vegetable extracts among which were those of juniper, wild cherry, senna, gentian, sassafras, uva ursi (bearberry) and cinchona. "Seelye's Ner-Vena" was sold as a cure for pimples, loss of memory, "tired feeling," locomotor ataxia, bed wetting, female complaints, premature old age, malaria, periarthritis, impaired vision, hysteria, nasal catarrh and several other conditions. Naturally these claims were declared false and fraudulent. In March, 1919, the company pleaded guilty and was fined \$10 and costs. — [Notice of Judgment No. 6766; issued April 20, 1920.]

Hill's Rheumatic Pills.—These pills were shipped in June, 1917, by Harriet W. Belden, who traded as the H. W. Belden Co., Minneapolis, Minn. The federal chemists reported that analysis showed the pills to consist of vegetable extracts, including aloes, and 5 per cent. of mineral salts. They contained no salicylates, carbonates, iodids, bromids, alkaloids, ammonia or guaiac. "Hill's Rheumatic Pills" were falsely and fraudulently represented as a cure for rheumatism, neuralgia, gout, erysipelas, eczema, syphilis, pyorrhea, etc. In April, 1919, Harriet W. Belden pleaded guilty and was fined \$10.—[Notice of Judgment No. 6770; issued April 20, 1920.]

Jenkins' Rheumatism, Gout and Neuralgia Annihilator.—The Parker-Blake Co., Ltd., New Orleans, La., shipped in October, 1917, a quantity of "Jenkins' Rheumatism, Gout and Neuralgia Annihilator." The federal chemists reported that

analysis of the product showed that it contained over 46 per cent. alcohol, 1.5 per cent. salicylic acid, resinous plant extract and water. It was sold under the claim that it was a cure for acute and chronic articular rheumatism, muscular rheumatism, internal rheumatism, neuralgia, gout, paralysis and sciatica. These claims were declared false and fraudulent. In June, 1919, the company pleaded guilty and was fined \$10. —[Notice of Judgment No. 6771; issued April 20, 1920.]

Short Stop.—Henry M. O'Neil of New York City shipped a quantity of "Short Stop" in August, 1917. This, when analyzed by the Bureau of Chemistry, was reported to be a syrup containing licorice and wild cherry extracts, ammonium carbonate, small amounts of an antimony salt, benzoic acid, camphor, oil of anise and traces of an unidentified alkaloid. It was falsely and fraudulently represented as a cure for

pneumonia, consumption, bronchitis, colds, hoarseness and all throat and lung troubles. In January, 1919, O'Neil pleaded guilty and was fined \$15. — [Notice of Judgment No. 6777; issued April 20, 1920.]

Antiseptine.—The Cal-Sino Co., Baltimore, Md., shipped in March, 1918, a quantity of "Antiseptine." The Bureau of Chemistry reported that analysis of "Antiseptine" showed that the stuff was a powder composed essentially of about 48 per cent. anhydrous zinc sulphate, with about an equal amount of lead acetate, together with a small amount of copper acetate. "Antiseptine" was falsely and fraudulently represented as a cure and specific for fistulas, when in truth and in fact it was not. In October, 1919, the company pleaded guilty to this charge and also to the charge of misbranding a remedy sold for sick horses. It was fined \$100 and costs. — [Notice of Judgment No. 6810; issued April 23, 1920.]

Cassidy's 4X and P. G. S.—The Schuh

Drug Co., Cairo, Ill., shipped in December, 1916, and April, 1917, a quantity of "Cassidy's 4X" and "P. G. S." The federal chemists reported that "Cassidy's 4X" was found to consist essentially of aloes, colocynth, resins and a small amount of some mercury salt, alcohol and water; "P. G. S." was reported to consist of plant extract, including extract from a laxative drug, resin and not more than a trace, if any, of mercury, alcohol and water. Both "Cassidy's 4X" and "P. G. S." were falsely and fraudulently represented as cures for eczema, syphilitic affections, rheumatism, malarial poison and all affections of the skin caused by impure blood and as a relief for kidney and bladder dis-

PROPRIETARY VS. NON-PROPRIETARY

Compare the relative prices of identical substances sold under protected and non-protected names respectively.

Wholesale List Prices - April 1920.

Proprietary		Non-proprietary	
Aspirin - Bayer	\$0.85 oz.	Acetylsalicylic Acid	\$0.16 oz.
Phenacetin	0.65 oz.	Acetphenetidin	0.27 oz.
Atophan	3.50 oz.	Cinchophen	2.00 oz.
Kelene (10 Grams)	0.56 tube	Ethyl Chloride (10 Grams)	0.45 tube
Duotal	1.90 oz.	Guaiacol Carbonate	0.80 oz.
Urotropin	0.60 oz.	Hexamethylenamine	0.21 oz.
Sulfonal	1.70 oz.	Sulphonmethane	0.80 oz.
Trional	1.90 oz.	Sulphon-Ethyl-Methane	1.00 oz.
Diuretin	1.75 oz.	Theobromine-Sodium Salicylate	0.70 oz.
Aristol	1.80 oz.	Thymol Iodide	1.00 oz.

ECONOMY, as well as SCIENTIFIC PRESCRIBING, should demand the use of NONPROPRIETARY NAMES whenever possible.

This is a greatly reduced reproduction of one of numerous posters shown at the New Orleans meeting in the A. M. A. Chemical Laboratory Exhibit. The original measured 22x28 inches. It is reproduced at the request of a large number of physicians who visited the exhibit.

eases. In October, 1918, the Schuh Drug Company pleaded guilty and was fined \$25 and costs.—[*Notice of Judgment No. 6841; issued April 23, 1920.*]

Hall's Canker and Diphtheria Remedy.—This product, which was said to have been shipped in August, 1918, by Selena D. Hall, Salt Lake City, Utah, was labeled as "an infallible remedy for diphtheria," a statement which, of course, was false and fraudulent. No claimant appearing for the property, the court entered a judgment of condemnation and forfeiture in December, 1918, and ordered that the product should be destroyed by the United States marshal.—[*Notice of Judgment No. 6836; issued April 23, 1920.*]

Red Cross Pile Cure.—William Davidson Rea, who did business at Minneapolis, Minn., under the name of Rea Bros. & Co., shipped in June, 1917, a quantity of "Red Cross Pile Cure" which was misbranded. These suppositories when analyzed by the Bureau of Chemistry, were found to consist essentially of cocoa butter, tannin, menthol, a lead compound, iodid, sulphate and possibly acetate. It was declared misbranded because the labels falsely and fraudulently represented it as a cure for blind, bleeding, itching and protruding piles, fistula, fissures, ulcers and all inflammation of the rectum and lower bowel. In April, 1919, Rea pleaded guilty and was fined \$5.—[*Notice of Judgment No. 6842; issued April 23, 1920.*]

"COTTON PROCESS ETHER"

In the Query and Minor Notes department of THE JOURNAL of February 21 some inquiries from physicians relative to "Cotton Process Ether" were answered. In referring to the composition of this product it was stated that the secretary of the Council on Pharmacy and Chemistry had asked the manufacturers, the Du Pont Chemical Works, for information on this point and one paragraph from the firm's reply was quoted. Another paragraph from the same letter was omitted and to this omission the manufacturers took exception, expressing the opinion that by it THE JOURNAL led its readers to infer that the concern had "refused to furnish any information whatever" regarding the composition of the ether. The following paragraph, italicized as in the original letter, is the one in question:

"Cotton Process Ether contains no components which do not occur in other anesthesia ethers. Its peculiar properties result from the thorough methods taken to exclude harmful impurities, such as aldehydes, peroxides, traces of acids, carbon monoxide, sulphur compounds, etc., and to include carefully regulated quantities of only such of the usual components as we have found to give distinctly beneficial properties to the ether. We are willing to state that in this class we consider properly prepared ethylene of greatest importance, but we have not announced which of the beneficial components of anesthesia ether we include in our ether, or the amount of such components."

As the quotation shows, the paragraph is informative in a negative rather than in a positive way in that it states what Cotton Process Ether is not rather than what it is. Since that time, however, the manufacturers have notified THE JOURNAL that they have definitely decided to present Cotton Process Ether to the Council on Pharmacy and Chemistry for consideration and that in preparing the data required by the Council will define Cotton Process Ether as follows:

"An improved anesthesia ether consisting of highly refined diethyl oxid ((C₂H₅)₂O), plus approximately two volumes of ethylene (C₂H₄), ½ volume of carbon dioxide (CO₂), and 1 per cent. by weight of ethyl alcohol."

Spread of Vincent's Angina to Ear.—Dr. M. Ottoni de Rezende publishes in the *Boletim da Sociedade de Medicina de S. Paulo*, Brazil, a case of gangrenous perichondritis of the ear and otitis media from invasion by fusospirillar infection from the throat. Almost the entire ear and vicinity sloughed off down to the rear wall of the tympanic cavity. The other ear also showed beginning otitis media. Under local treatment with neutral solution of chlorinated soda and Peruvian balsam, and intravenous injection of neo-arsphenamin, the process was arrested and healed, but the child succumbed later to the cachexia and autointoxication.

Correspondence

OBSERVATIONS SUGGESTED BY "SYPHILITIC SCARS OF THE SPIRIT"

To the Editor:—Apropos of Dr. Collins' scholarly and altogether sympathetic case report chronicled in his recent communication (Syphilitic Scars of the Spirit, THE JOURNAL, May 1, 1920, p. 1216), one notes an admirable drawing of disease effect on that more elevated, moral entity (soul, spirit) which exists beyond purely mental cerebration. Yet I have wondered in respect to his conclusion of "miscarriage of therapeutic justice and mockery of studied effort" why the soul scar was stressed alone. Deterioration of mental capacity presented a fact the patient, himself, recognized as do many who are more frankly demented. Perhaps comment was so shaped because in the usual summing up of individual mental defect, intellectual capacity is alone emphasized, although moral disintegration, in some degree, is an invariable concomitant.

The case in question offers, too, a thought regarding treatment which I believe holds good today very often and is spoken of here only because, although not the attending but the consulting physician, Dr. Collins' detailed recital of treatment given makes the instance serve well as an example. Thus, it is related that months previous to the first symptom of meningeal irritation the blood serum had shown a +++ Wassermann reaction. Thereupon this patient received forty intramuscular injections of mercury. Two months previous to his attacks of vertigo, nausea and development of conspicuous mental symptoms, a facial paralysis had supervened. This had improved to some extent, but was still quite noticeable when Dr. Collins first saw the patient. Also, at this time the man looked very ill, was emaciated and pale, and during the examination was bathed in perspiration. The patient at this time weighed 98 pounds, his ordinary weight being 130 pounds. Laboratory tests were corroborative of the diagnosis of basilar meningo-encephalitis, the spinal fluid containing 150 cells per cubic millimeter. Treatment was changed to intravenous and intraspinal injections of arsphenamin, two of each, and daily inunctions of mercury. The serum and spinal fluid became negative, and the cells of the latter dropped to 11 per cubic millimeter. The patient's physical condition improved much, and his mental condition bettered up to a certain point, and thereafter remained stationary. He was given further intravenous injections of arsphenamin. Later in a sanatorium, antisyphilitic treatment with both arsphenamin and mercury was continued for another six weeks. Four months after coming under observation, his attending physician again put him under treatment continuing for about a year. Altogether the patient received about thirty intravenous injections, four intraspinal, and scores of injections and inunctions of mercury.

Repetition of this detail is set down because it brings out the patent fact of somewhat mechanical therapeutic procedure, although the use of the laboratory addressed to serologic conditions exhibits apparent scientific management. First, despite evidence of nonassimilation and reaction to mercury in the single manner initially given, no change of method is made in the face of disease progress shown by cranial nerve involvement and general physical deterioration. When arsphenamin injections are begun, an immediate betterment accrues to a degree and then stops. Nevertheless, thereafter it is arsphenamin, mercury and Wassermann test until arrival of that time which makes further attention appear useless.

Has this procedure, even after turning to arsphenamin for aid, lacked something in the interest of the patient? I think

o, and exactly that coefficient which is now so frequently lost sight of. Good clinicians and therapeutists of an earlier day, without the guidance of the identification of *Spirochaeta pallida*, the Wassermann reaction and the striking benefits of arsphenamin, and therefore more dependent on clinical watchfulness and tardier effects of mercury and iodine, would probably have adopted a less routine method. For the patient whose physical condition was below par, bed rest and full feeding was prescribed when it could be had, but particularly, when therapeutic effect from mercury became stationary "alteratives" were given. In the days of Rush, red clover, stillingia, burdock root, etc., were for a time substituted for actual specific treatment. Twenty-five years ago in clinics such as Neumann's or Kaposi's, Zittmann's decoction was given as interim medication between courses of mercury. Why? In modern vernacular, the handy phrase "to increase resistance" comes as a ready answer. To what? In an older day one would need to have said to the disease itself; today to the pale spirochete. This, however, was not the real thought. These clinicians noted that after "alterative treatment" (and an improved general condition), the system reacted anew to mercury and potassium iodide. Today we may theorize as to cause, saying, perhaps, that we thus reactivate essential organs of internal secretion. They knew nothing of these things, but held strongly to the lessons of experience and acted in accordance with them. The present day practitioner has great advantages over his elders who were without laboratory aids, but it would seem that just because of the diversions arising from the latter the modern sometimes becomes mechanical as to therapeutic concepts and hence, at times, falls short in respect to best treatment continuity. BERNARD OETTINGER, M.D., Long Beach, Calif.

"POISON IVY, OAK AND SUMAC"

To the Editor:—The editorial in THE JOURNAL, May 1, 1928, leads me to put together a few notes on my experience and observations. Poison ivy does not affect me unless there has been an unusual or prolonged exposure. When I first came to northern Indiana and found the swamp sumac or poison tree (*Rhus venenata* or *vernix*) I assumed that I was equally immune to this species of rhus and did not hesitate to break off a small branch for my herbarium—a proceeding I never repeated, for the next day I had a severe dermatitis of the hands, face "and elsewhere." Of course, I tried the remedies given in the books; but it was a week and more until the swelling subsided and another week until it was through shedding.

Once a year at least I go to the tamarack swamps (now almost extinct) to botanize; here the swamp sumac is common. In spite of all effort at prevention or avoidance I am usually poisoned more or less severely. For a long time I found no good remedy, no "cure"—only palliatives.

One year I had an unusually severe attack and then experimented freely. Among other things I applied a dilute solution of liquor formaldehydi to one hand, but this "set the skin afire" and required the soothing application of phenol solution; the cure was worse than the disease. Greatly to my surprise there was a marked improvement the next morning—almost a cure. It then occurred to me to combine phenol with the formaldehyd. The other hand was treated, and with equally good result.

Since then I have used this treatment as a matter of routine. I found that by freely applying a solution on coming out of the swamps there was no eruption, no poisoning at all.

I prepared a solution for dispensing. My usual formula: liquor formaldehydi, 5 c.c.; saturated aqueous solution of

phenol, 10 c.c.; distilled water to make 100 c.c. (To this may be added a drop of methylene blue solution, as blue is a color that leads people to pause about using internally. To disguise the phenol odor, to which some object, a drop of some essential oil may be added).

In dispensing I supply a 4-dram vial with a swab in the cork and with the directions: Apply freely the first time; after that use sparingly every few hours, as needed.

Need it be added that a remedy that is "a power for good" may also be a power for evil? Some patients act on the principle that, if a little is good, more is better. The hardening or tanning effect of formaldehyd must be considered and explained to patients. The earlier the solution is applied, the better the effect.

ROBERT HESSLER, M.D., Logansport, Ind.

To the Editor:—Your editorial of May 1 on "Poison Ivy, Oak and Sumac" was of interest to me, as I was one of the unfortunate ones susceptible to poison ivy, etc. When about 10 years old I had a beautiful dose, covered from head to foot, eyes closed, etc.

A solution of zinc sulphate was used on my eyes that immediately dried off all of the poison ivy vesicles around the eyes. Since practicing medicine I have used it hundreds of times with good results. All irritation or even eruption can be prevented if it is used immediately after exposure. If used within twenty-four hours after exposure or ten hours after the appearance of the vesicles, it will abort the attack. If the case is not seen until the deeper layers of the epidermis are involved, the cure is slower but just as sure. To abort an attack, use 10 grains of zinc sulphate to 1 ounce of water. For later treatment, use half strength.

S. W. IRVING, M.D., New Britain, Conn.

To the Editor:—Relative to "Poison Ivy, Oak and Sumac" I have had splendid results from the use of equal parts of gum camphor, crystal phenol and the plain hydrocarbon oil, thoroughly rubbed in. Generally one application a day for two or three days is sufficient. It is to be understood that it is not to be applied over too extensive an area of skin surface at one time; also, in some cases a little more of the oil could be used, and in other cases less oil would give better results; but in most cases, equal parts of each will do the work.

ALBERT E. STOLER, M.D., Fort Wayne, Ind.

"BOTULISM DUE TO OLIVES"

To the Editor:—With reference to the questions concerning botulism raised in your editorial (THE JOURNAL, May 1, p. 1261), it may be desirable to answer the questions as fully as possible. The strain of *Bacillus botulinus* isolated from the Richmond, Calif., poisoning case was identified by Dr. Dickson as Type A, (too late for inclusion in the paper, p. 1220). The relish concerned in that poisoning case was made from ripe olives. The title of the paper was inclusive of the cases mentioned. The stuffed olives described were ripe olives stuffed. A certain portion of the ripe olives produced are marketed as stuffed olives. Pure culture experiments with *Bacillus botulinus* are accompanied by an objectionable odor. These odors are intensified when other organisms are present, as is usually the case. The doubtful character of odor as a safeguard must be recognized, but it must also be recognized that the physical examination of the can, including evidence of swell, turbidity, disintegration and odor, is the sole dependence of the ordinary consumer to protect himself against spoiled food. The reason for emphasis on the evidences of spoilage in our various publications has been confidence based on our observations that rigorous care in making the examinations required would

have prevented most, if not all, of the poisoning cases with which we have come in contact.

CHARLES THOM, PH.D., Washington, D. C.
Mycologist, Bureau of Chemistry, U. S.
Department of Agriculture.

THERMOREGULATION OF REFRIGERATORS

To the Editor:—Having experienced a great deal of difficulty in the regulation of temperature of an ammonia and brine refrigerator, I wish to give my solution of the problem in the hope that other laboratories may benefit thereby. The thermoregulator installed in our refrigerator proved unsatisfactory and defective. On inquiry it appeared that the difficulty was that compressed air was used to open the valve admitting the chilled brine to the pipes. The compressed air entered the thermoregulator by a very fine port which was constantly becoming plugged by moisture and rusting. Learning this, we simply introduced a wash bottle of sulphuric acid into the air system before it reached the port. Since this wash bottle was installed, our refrigerator has not varied 3 degrees in temperature. We have used this device now for six months and find it entirely satisfactory.

LAWRENCE W. STRONG, M.D., New York.
Pathologist, Woman's Hospital.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

POISONING BY MERCURIC CHLORID DOUCHES

To the Editor:—In THE JOURNAL, May 1, 1920, p. 1227, Dr. P. B. Bland of Philadelphia reported three very interesting cases of mercuric chlorid poisoning from vaginal injections. I am making a study of such cases and would appreciate the courtesy if you could furnish me with additional references from your journal or other journals or any medical works; also cases in which a saturated sponge or other mechanical device, together with mercuric chlorid, have been used. I have found a paragraph in Jewett's Obstetrics, but have not been very successful in finding other articles on the subject.

E. E. BRATTON, M.D., Philadelphia, Pa.

ANSWER.—Following is a list of articles on this subject:

- Fitzgibbon, G.: Poisoning from Mercury Tablet Introduced in Vagina, *Lancet*, March 16, 1918; abstr. *Dublin J. M. Sc.*, April, 1918.
Conaway, W. P.: Fatal Case of Mercury Poisoning from Vaginal Absorption, *J. M. Soc. New Jersey*, March, 1917.
Buckman, F.: Case of Mercuric Chlorid Poisoning Due to Vaginal Douches, *THE JOURNAL*, Feb. 14, 1914, p. 535.
Baux, G., and Roques, E.: Fatal Mercurial Poisoning from Intra-Uterine Injection, *Rev. mens. de gynéc., d'obstét. et de pédiat.*, January, 1912; *Obstétrique*, March 9, 1912, p. 740.
Mabbott, J. M.: Mercuric Chlorid Poisoning, Associated with Secondary Hemorrhage from Vaginal Douche, Given Seven Days After Delivery, *THE JOURNAL*, Aug. 15, 1911, p. 448.
Lankford, Burnley: A Peculiar Case of Mercurial Poisoning, *THE JOURNAL*, April 9, 1910, p. 1203.
Shrap, W. H.: The Careless and Criminal Use of the Mercuric Chlorid Tablet, *THE JOURNAL*, April 30, 1910, p. 1459.
Patek, Arthur J.: Poisoning by Mercuric Chlorid Through Vaginal Douches, *THE JOURNAL*, June 4, 1910, p. 1867.
Poisoning by Sublimite Tablets, Editorial, *THE JOURNAL*, June 4, 1910, p. 1877.

DUCTLESS GLAND DISTURBANCES IN U. S. SOLDIERS DURING THE EUROPEAN WAR

To the Editor:—Being interested in material on diseases of the glands of internal secretion in U. S. soldiers in our army camps and at the front during the European war, I should feel much indebted to any physician who served as a medical officer in the army during the war who might be able to supply me with information in regard to this matter, particularly statistical relations, semeiology, the incidence of these diseases in drafted men and in enlisted men who were subsequently on duty, and the measures taken in dealing with such cases. Any help I may receive in this matter will be highly appreciated and acknowledged.

JAMES ROBB CHURCH, M.D.,
Army Medical Museum, Washington, D. C.
Colonel, M. C., U. S. Army; Secretary-Treasurer,
Association of Military Surgeons.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.
COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: Hartford, July 6-7. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.
DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
FLORIDA: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.
FLORIDA: Regular Board, Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
IOWA: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.
LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.
MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.
MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, June 1-4. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.
NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.
NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.
OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.
OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.
RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.
TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.
UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.
VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.
WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.
WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.
WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

Colorado January Examination

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Jan. 6, 1920. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 13 candidates who took the physician's and surgeon's examination, 5, including 1 osteopath, passed and 7, including 6 osteopaths, failed. Twenty candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Reliance Medical College	(1910)	83
Kansas City College of Medicine and Surgery	(1917)	75
Jefferson Medical College	(1915)	92
Kyoto Imperial University	(1910)	75
College	FAILED	Year Grad.	Reciprocity with
University of West Tennessee	(1918)	40
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Cooper Medical College	(1893)	Oregon
Chicago College of Medicine and Surgery	(1909)	Illinois
Rush Medical College (1910) Iowa, (1912) Nebraska	(1915)	Illinois
University of Kansas	(1917)	Wyoming
Baltimore Medical College	(1910)	Penna.
Harvard University	(1901)	Minnesota
Barnes Medical College	(1899)	Missouri
Homeopathic Medical College of Missouri	(1897)	Missouri
Kansas City Medical College	(1898)	Kansas
Missouri Medical College	(1893)	Illinois
St. Louis University	(1914)	Oklahoma
John A. Creighton Medical College	(1912)	Nebraska

Lincoln Medical College	(1899)	Nebraska
Long Island College Hospital	(1911)	New York
University of the South	(1901)	Texas
University of Tennessee	(1903)	Tennessee
Vanderbilt University	(1914)	Michigan
University of Virginia.....	(1902)	Dist. Colum.

Minnesota January Examination

Dr. Thomas S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Jan. 6-8, 1920. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. Fifteen candidates were licensed by reciprocity. Fifteen candidates, including one osteopath, were licensed on Army and Navy credentials, and one candidate was licensed on Red Cross Service. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1919)	90
Harvard University		(1911)	93
University of Minnesota Medical School ..		(1917) 88, (1918)	86
Columbia University		(1917)	91

FAILED

College of Physicians and Surgeons, Chicago.....	(1897)	58
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LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery.....	(1913)	N. Dakota
Northwestern University	(1918), (1919)	2) Illinois
Rush Medical College.....	(1914), (1916), (1919)	Illinois
Kansas Medical College	(1909)	Kansas
Johns Hopkins University	(1915)	Maryland
Detroit College of Medicine and Surgery.....	(1914)	Michigan
University of Nebraska	(1904) Iowa, (1918)	Nebraska
New York University	(1897)	Dist. Colum.
Pulte Medical College	(1910)	Ohio
University of Oregon	(1915)	Colorado
Memphis Hospital Medical College.....	(1911)	Tennessee

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
Chicago College of Medicine and Surgery.....	(1916)	U. S. Army
College of Physicians and Surgeons, Chicago	(1910)	U. S. Army
Rush Medical College.....	(1911) (1912) (1914)	(1916) U. S. Army
University of Illinois	(1911) Red Cross Service	(1913) U. S. Army
.....		(1916) U. S. Navy
University of Maryland	(1914), (1915)	U. S. Army
University of Michigan Medical School	(1915)	U. S. Army
Hamline University	(1906)	U. S. Army
St. Louis University	(1909)	U. S. Army
University of Pennsylvania	(1912)	U. S. Army

Oklahoma January Examination

Dr. James M. Byrum, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, Jan. 13-14, 1920. The examination covered 12 subjects and included 100 questions. An average of 75 per cent. was required to pass. Nine candidates were examined, all of whom passed. Forty candidates, including 3 osteopaths, were licensed by reciprocity. One candidate was licensed on Navy credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
emory University		(1919)	84
College of Physicians and Surgeons, Chicago (1899)	75	(1912)	88
Loyola University		(1917)	85
University of Illinois		(1917)	87
University of Maryland		(1909)	86
Medico-Chirurgical College of Philadelphia.....		(1916)	89
University of Texas		(1919, 2)	85

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Little Rock....	(1910)	Arkansas
Univ. of Ark... (1907) N. Mexico (1912), (1915), (1917)		Arkansas
Atlanta Medical College	(1914), (1916)	Georgia
College of Physicians and Surgeons, Chicago.....	(1906)	Arkansas
Rush Medical College	(1910)	Illinois
University Medical College of Kansas City.....	(1905)	Missouri
Hospital College of Medicine, Louisville.....	(1901)	Kansas
Julane University (1907) Tenn., (1915) Georgia, (1917)		Louisiana
Aginaw Valley Medical College	(1903)	Michigan
Arnes Medical College	(1905)	Missouri
Missouri Medical College	(1883, 2)	Arkansas
St. Louis University	(1911)	Missouri
Washington University	(1909), (1915)	Missouri
University of Nebraska	(1917), (1919)	Nebraska
Eclectic Medical College	(1913)	New Mexico
Western Reserve University	(1917)	Ohio
Jefferson Medical College (1916) Kansas, Mississippi		
University of Pennsylvania	(1915)	Texas
Hattanooga Medical College	(1906)	Tennessee
Memphis Hospital Medical College	(1904)	Arkansas
Vanderbilt University	(1891) Tennessee, (1913)	Georgia
Port Worth School of Medicine.....	(1917)	Texas
Sherry Medical College	(1918, 2)	Tennessee
University of Texas	(1898), (1916)	Texas

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
University of Maryland.....	(1917)	U. S. Navy

Book Notices

BODILY CHANGES IN PAIN, HUNGER, FEAR AND RAGE. An Account of Recent Researches into the Function of Emotional Excitement. By Walter B. Cannon, M.D., C.B., George Higginson Professor of Physiology in Harvard University. Cloth. Price, \$3 net. Pp. 311, with illustrations New York: D. Appleton and Company, 1920.

This little volume, appearing first in 1915, and now reprinted with only slight changes, is a well written, popular account of the investigations that Dr. Cannon and his pupils have made in this field of physiology during the last twenty years. The book is of equal interest to the physiologist, the psychologist and the medical practitioner. Since it was written, our conception of the rôle of epinephrin in normal bodily functions has undergone considerable modifications, owing chiefly to the work of Dr. G. N. Stewart of Cleveland. The final chapter, on "Alternative Satisfactions for the Fighting Emotions," is an attempt to apply physiologic investigations at Harvard to the problems of social control.

AN INTRODUCTION TO GENERAL PHYSIOLOGY, WITH PRACTICAL EXERCISES. By W. M. Bayliss, M.A., D.Sc., F.R.S., Professor of General Physiology in University College, London. Cloth. Price, \$2.50 net. Pp. 237. New York: Longmans Green & Co., 1919.

This little volume follows the general plan of the large book on general physiology written by this eminent physiologist a few years ago. It is essentially a new type of elementary textbook of physiology for beginners in this science, in that it deals exclusively with the chemical and physical processes in the organism, with little or no reference to anatomic structure or histologic detail. While the book is purposely elementary, medical men who graduated twenty-five or thirty years ago could peruse the first part of the volume with profit, as it presents the main advances in the application of the laws of chemistry and physics to vital phenomena that have been made during this period.

Medicolegal

Illegal Obtaining and Dispensing of Morphin Sulphate

(Trader v. United States (U. S.), 260 Fed. R. 923)

The United States Circuit Court of Appeals, Third Circuit, in affirming a judgment of conviction of defendant Trader, a physician, of violating the Harrison Narcotic Law, says that, as the defendant was not registered as a dealer in the drug and had not paid the special tax, as required by Section 1 of the act, and as he had dispensed the drug to persons without the written orders required by Section 2, and also, by means of the statutory order forms, had obtained large quantities of the drug, he was unquestionably guilty of the violations charged, unless it appeared, in the one case, that the drug was dispensed or distributed in good faith, in the course of his legitimate professional practice, and in the other case that it was acquired for use therein. The principal error assigned was the refusal of the trial judge to charge the jury, without qualification, that the act "does not limit the amount of morphin sulphate which a physician may prescribe or administer to his patients." He charged that while the law "does not in specific terms" create such a limitation, "it does provide that such drug must be prescribed in the course of his professional practice only." It is true that the act does not in specific terms state how much morphin sulphate may be prescribed or administered by a physician to his patients. It does, however, exempt physicians, in the dispensing and distributing of the drugs covered by the act, from the requirements of Section 2 only in such cases as are "in the course of his professional practice only." The regulations promulgated by the commissioner of internal revenue, pursuant to the authority conferred by Section 1 of the act, provide for separate and distinct registration by dealers and physicians. Hence, if the defendant dispensed the drug in question not in the legitimate practice of his profession, he became a dealer in the drug and was required

to register as such. Therefore, whether he was a dealer depended on whether or not he was dispensing the drug in the course of his legitimate practice as a physician. Likewise, the legality of his acts in obtaining the drug by means of the statutory order forms was dependent on whether he acquired it for use "in the legitimate practice of his profession." Manifestly, therefore, so far as the issues in this case were concerned, there was in the act just such a limitation as the trial judge stated. Accordingly, the qualification which he made in the requested instruction was not only proper, but, as it seems to this court, was quite necessary in order that the jury might not be misled and confused. It was next urged that the trial judge was not justified in stating, as he did in his charge, that, while the Harrison act is a revenue measure, "its clear purpose . . . is to restrict the distribution and use of opium and its derivatives to medicinal purposes only." It is assuredly within the discretion of a trial judge, in charging a jury, to state the purpose, as he conceives it, that Congress had in passing any given act. If an erroneous statement of such a purpose may be considered reversible error in any case, the court is entirely clear that, although the Harrison act was passed pursuant to the taxing power of Congress and is clothed in the garb of a revenue act, the judge did not misconceive or misstate the broad underlying purpose which Congress had in passing it, and therefore that no harm was done the defendant by the statement in question.

- Illegal Sales of Narcotic Drugs by Physicians

(*Oakshette v. United States (U. S.), 260 Fed. R. 830*)

The United States Circuit Court of Appeals, Fifth Circuit, in affirming a judgment of conviction of defendant Oakshette of violating the Harrison Narcotic Law, says that the indictments charged sales to have been made by him, not in pursuance of written orders, given by the purchasers, on forms prescribed by the commissioner of internal revenue. The proof showed that he was a physician and had registered with the collector of internal revenue. He was authorized to administer the prohibited drugs, without obtaining a written order, if they were administered "in the course of his professional practice," but not otherwise. The government contended that the drugs administered by him were not administered in good faith, in the course of his professional practice, but to gratify the desire or appetite of the patients or purchasers. He contended that they constituted legitimately medical treatment for his patients. The issue so made was submitted to the jury.

The contention of the defendant was that it was not within the issues presented by the indictments, since they merely charged sales illegal because not in pursuance of written orders. The only prohibitions of the statute are (1) sales by unregistered persons and (2) sales by registered persons not in pursuance of written orders. The defendant could be charged only with having made the one kind or the other. As he had registered, he was not guilty of the first. If, having registered, he made sales or dispensed the drug without obtaining a written order, he was guilty of the second kind, unless because he came within one of the excepted classes. If he administered the drug only in the course of his professional practice, he came within one of the excepted classes, and was not guilty. If, however, he administered the drug not in the course of his professional practice, then he did not bring himself within any of the excepted classes, and so came within the operation of the prohibition of Section 2, against selling or dispensing not in pursuance of a written order, and was properly charged with that offense. As a registered person he could have been charged with no other offense, since the act creates no other out of the act of selling or dispensing by registered persons. It does not make it a separate offense for a physician to administer the drug when it is not done in the course of his professional practice. His doing so merely removes him from the classes exempted from the operation of Section 2, and leaves him subject to the punishment prescribed by Section 2.

Dispensing the drug, though by a physician, if not in the course of his professional practice, is in legal effect a sale;

and, being one, can be legally made only in pursuance of an order form; and the offense of doing it without one is necessarily that of selling or dispensing not in pursuance of a written order, in violation of Section 2 of the act.

The defendant complained that the evidence was insufficient to convict him. That there was evidence in the record from which the jury might well have inferred that the defendant administered the drug, not in good faith to cure his patients or alleviate their present suffering, but to satisfy their craving, as addicts, for the drug, was clear from the constant quantities over periods of as much as three months, during which the record showed it was furnished to a number of persons by the defendant. The sufficiency of his explanations as to why he failed to reduce the amounts, especially as to those he testified he was attempting to cure of the drug habit by the method of reduction, was for the jury to determine.

Liability of Physicians—Advising Local Physician

(*Thornburg v. Long (N. C.), 101 S. E. R. 99*)

The Supreme Court of North Carolina, in affirming a judgment of nonsuit in this action against a physician to recover alleged damages, says that the law governing the liability of a physician to his patient is well settled. While there is an implied contract that the physician or surgeon who undertakes to treat a patient will use all known and reasonable means to accomplish the object for which he is called to treat the patient, and that he will attend to the patient carefully and diligently, there is no guaranty that he will cure him, or that he will not commit an error of judgment. The law implies only that he not only possesses, but that he will employ in the treatment of the case, such reasonable skill, care and diligence as are ordinarily exercised in this profession. But a physician or surgeon possessing the requisite qualifications and applying his skill and judgment with ordinary care and diligence to the diagnosis and treatment of a patient is not liable for an honest mistake or error of judgment in making or prescribing the mode of treatment, when there is ground for reasonable doubt as to the practice to be pursued.

The testimony of the plaintiff in this case tended to prove that he began suffering from a swollen arm, and, after being treated for about a week by his local physician and receiving no relief, he was sent by his family physician to the hospital of the defendant for treatment. The plaintiff told the defendant of his great suffering, and asked him to operate on him or give him some relief from his pain. The defendant examined the plaintiff at once, removed his shirt to the waist, found his arm swollen from elbow to neck, examined his back, looked over him, asked him as to his habits, private history relating to women, took blood from him for analysis, put him to bed, called on him next morning to make further examination, gave him some medicine, and told him he could not do anything until he had a report from the analysis of his blood—would not say it was tuberculosis. The defendant took some blood from the plaintiff's arm and sent it away to be tested, and the next day the plaintiff returned to his home to await the further orders of the defendant. In a few days the defendant wrote to the plaintiff's local physician that the plaintiff's blood showed the strongest positive Wassermann test, and that he had a bad case of syphilis, and nothing but heroic treatment would save his life. The plaintiff testified that he was a virtuous man and had never had sexual intercourse with any woman other than his wife, who was a woman above reproach. After he returned from the defendant's hospital, his local physician lanced his arm, and a few days thereafter it was again lanced, by another physician, and he had entirely recovered.

The question was, Did the defendant, under the facts as testified to by the plaintiff, use that skill and diligence which he was required to use, and was there evidence tending to prove the plaintiff's contention of negligence sufficient to be submitted to the jury? There was evidence, sufficient to go to the jury, that the defendant made an erroneous diagnosis when he concluded that the plaintiff suffered from the effects of syphilis, but there was not a scintilla of evidence that he

was incompetent or negligent. On the contrary, the evidence offered on behalf of the defendant indicated that he stood very high in his profession, and that in diagnosing the plaintiff's case he followed recognized and established practice. The fact that the defendant wrote to the plaintiff's local physician that the examination showed evidence of syphilitic poison was no basis for an action. It was the defendant's duty to communicate to him the conclusion he had reached. The communication was wholly privileged. The court thinks the defendant's motion for a nonsuit was properly allowed.

Competency of Evidence as to Insanity

(*Davis v. Alderson (Va.)*, 100 S. E. R. 541)

The Supreme Court of Appeals of Virginia says, in this case wherein plaintiff Alderson sued defendant Davis for the specific performance of a contract by the latter for the purchase of a tract of land, and the defendant's defense was that when the contract was entered into he was temporarily insane, that three physicians were called as witnesses and examined as experts. None of them had seen the defendant at or near the time of the transaction, and they were not called on to testify from personal knowledge; but a question was propounded to them which ended with the inquiry, Would you regard a man in the financial condition of Mr. Davis, making the two trades and purchases above, as a man whose mind was in a proper condition and a man sane at the time or not? Their testimony was not expert testimony at all, but the mere inexperienced opinions of these gentlemen, and should have been excluded.

Testimony of lay witnesses as to the sanity or insanity of a person is admissible in evidence when it appears that the witness has had sufficient opportunity, by observation, to form an opinion worth considering; but the opinion of the witness should be preceded by a statement of his opportunity for observation, and of the facts observed. The value of such testimony is dependent very largely on the character of the witness, his opportunities for observation, the facts observed, the interest, bias or prejudice of the witness, his capacity and intelligence in making and relating his observations, and other circumstances which affect the weight to be given to oral testimony generally. Usually such testimony, when general and continuous insanity is not involved, is not esteemed of much value, except so far as the opinion of the witness is justified by the data observed.

Whether the defendant's purchases were wise or foolish, if he had contractual capacity, was immaterial. If courts were permitted to pass on the wisdom or folly of contracts, or if that were a test of sanity or insanity, the business of the country would soon be involved in inextricable confusion. Allusion was made more than once to the fact that the defendant was of the great age of 62 years as affecting, in conjunction with other things, the validity of the contract; but the court will take judicial notice of the fact that men of greater age than that so far retain the confidence of the government in their mental capacity as to be placed in judicial positions where they have to pass on the validity of contracts made under identical circumstances with the case in judgment. Every one is presumed to be sane until the contrary is made to appear by him who alleges it.

The defendant was bound by his contract.

"Insane Delusion" Difficult of Accurate Definition

(*Trustees of Epworth Memorial Methodist Church et al. v. Overman et al. (Ky.)*, 215 S. W. R. 942)

The Court of Appeals of Kentucky, in reversing a judgment that invalidated a will which was contested by the children of the testator on the sole ground that it was executed under an insane delusion as to their feelings and attitude toward him, says that an "insane delusion" that renders one incapable of making a will is difficult of accurate definition. It is much more than bias or prejudice, or any merely incorrect mental attitude. It is rather a wholly irrational state of mind on a particular subject; that is, such a mental state as is supported by no evidence whatever, and therefore purely a product of the imagination. As has been said, insane delusion

should be distinguished from prejudice or error, as well as from eccentricity. It differs essentially from some rational belief, not well founded, however perversely the testator may have clung to it. An ill-founded belief, not actually insane, does not destroy testamentary capacity. And where one indulges in an aversion, however harsh, which is the conclusion of a reasoning mind, on evidence no matter how slight or inaccurate, his will cannot be on that account overturned.

Society Proceedings

COMING MEETINGS

American Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 31.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Gynecological Society, Chicago, May 24-26.
American Laryngological Association, Boston, May 27-29.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Orthopedic Association, Toronto, Ont., June 7-10.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
Arkansas Medical Society, Eureka Springs, June 8-9.
Association of American Peroral Endoscopists, Boston, June 1.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Massachusetts Medical Society, Boston, June 8-9.
Michigan State Medical Society, Kalamazoo, May 25-27.
Montana State Medical Association, Helena, July 14-15.
Nebraska State Medical Association, Omaha, May 24-26.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Jersey Medical Society, Spring Lake, June 15-17.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Rhode Island Medical Society, Providence, June 3.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.
Western Electro-Therapeutic Association, Kansas City, Mo., May 27-28.

MEDICAL ASSOCIATION OF GEORGIA

Seventy-First Annual Session, held at Macon, May 5-7, 1920

The President, DR. E. G. JONES, Atlanta, in the Chair.

Forty-Three Gallbladder Operations

DR. R. M. HARBIN, Rome: In this series of cases there were seven men and thirty-six women. The youngest patient was 26, the oldest 77. The duration of stay in hospital was about the same for cholecystostomy as for cholecystectomy. In five cases, gallstones were unexpectedly discovered. Seventy-eight per cent. of the patients gave histories of devitalized teeth; 53 per cent. had had abscessed teeth; 31 per cent. had had tonsillitis; 50 per cent. had had rheumatism in some form; 15 per cent. had had jaundice, and 50 per cent. had had some form of septicemia.

Breast Tumors, Special Reference to So-called Cystic Mastitis

DR. C. W. ROBERTS, Atlanta: Chronic cystic mastitis bears a definite relationship to cancer of the breast, and must be considered a precancerous lesion. This disease becomes cancerous in one out of five cases observed to their final outcome. So-called cystic mastitis in patients above the age of 35, with suspicious malignant tendencies, should be treated by a radical operation of the Halstead type. In that special class of cases in younger women, unassociated with frank malignant tendencies, and when for individual reasons the patient's future would be more or less blighted by the complete operation, the conservative plan should be adopted. This disease furnishes about one third of breast lesions, discovered on routine examination.

Treatment of Cancer with Radium

DR. C. C. HARROLD, Macon: Radium is only a handmaid to surgery, and there are many cases in which it would be criminal to use radium instead of operating. Radium should not be used in cancer of the breast, except for treating recurrent nodules. It should not be used on the lip instead of doing the radical neck dissection. However, in cancer of

the lip it will do just as well as the old operation of dissecting out the growth from the lip without getting the neck glands, and with nothing like the accompanying deformity and parrot mouth occasionally seen. Radium should be used for the local growth; a few weeks later, after all local growth has been cleaned up, the radical operation on the neck should be performed. The value of radium is unquestioned in the inoperable cases of cancer of the uterus. In the treatment of early cancer of the cervix, there is no primary mortality. The patients are immediately relieved from all their symptoms, and Janeway asserts that unless the disease has already gone out into the parametrium we have a permanent cure.

Medical Aspects of Surgical Cases

DR. WILLIAM HOWARD LEWIS, Rome: There are three distinct phases in which the medical mind should be of material advantage to the surgeon: (1) in assisting to establish a diagnosis; (2) in differentiating between and evaluating the relative weights of coexistent medical and surgical conditions in a given case, and (3) in cooperating during the convalescence and ultimate restoration to health.

Mobilization Versus Immobilization

DR. THEODORE TOEPEL, Atlanta: Splints, usually of plaster of Paris, are necessary in the treatment of most fractures. As soon as possible splints are discarded. Then a mixed treatment is adopted, massage and mobilization being practiced daily after only a brief delay, the splints being applied between times. When a limb is immobilized, not only are no steps taken to restore the circulation, but a condition of total disuse is enforced, which must itself lead to further loss of vitality. Even a healthy bone tends to undergo atrophy, and that so rapidly that the bones of a child's limb which have been placed in plaster are liable to undergo spontaneous fracture after the second month. That external splints fail to restore circulation is also shown clinically by the fact that a leg still shows signs of edema when a plaster splint is removed a month or six weeks after fracture.

Gunshot Wounds of the Chest and Their Treatment

DR. T. C. DAVISON, Atlanta: In my series of more than forty cases I was impressed with the frequency of pneumothorax as a complication, and I often found one or more openings in the diaphragm, with hernia of the abdominal viscera. In those cases of chest injuries that were given the so-called expectant treatment, too often at the necropsy it was found that serious complications were present which could be ascertained only by open operation. The indications for operation are: fracture of the ribs; bleeding from the parietal wound; a sucking wound into the pleural cavity; retention of large foreign bodies within the chest; a large hemothorax which cannot be evacuated by aspiration; serious internal hemorrhage, and any wound below the sixth rib on account of possible injury to the diaphragm and abdominal viscera. The operation should be performed as soon as possible after the receipt of the wound, unless the patient is in shock. Contraindications for operation are small, clean, punctured, through-and-through wounds of the upper thorax with the absence of serious symptoms; shock, and pneumothorax of the opposite side.

The Obstetrician's Obligation

DR. GARNETT W. QUILLIAN, Atlanta: The accoucheur owes four obligations to the new-born babe: (1) proper care of the eyes; (2) proper care of the navel; (3) applying only to the male child, circumcision, except in rare cases; (4) an effort to see to it that the child is not robbed of its proper food, its mother's milk.

Utility of Influenza-Pneumonia Vaccine in Pregnancy and Postoperative Conditions

DR. MARION T. BENSON, Atlanta: During the present epidemic I had under observation and treatment forty-five pregnant women, and none of these women died when they received a preventive dose of vaccine. Ten of these women had had influenza in their homes, and found it necessary to

render personal care to those who were sick; but all escaped the disease. Five others, who were constantly exposed and had to do nursing, developed mild cases without troublesome complications. Three women miscarried, but did not develop pneumonia or any other complication, and made uneventful recoveries. Three women who did not receive any influenza-pneumonia vaccine before they were infected developed pneumonia and died in an alarmingly short time.

I used Type IV influenza-pneumonia vaccine brought out by General Hospital No. 6.

Early Diagnosis as a Means of Reducing the Death Rate from Cancer

DR. J. L. CAMPBELL, Atlanta: I have selected a group of cases to show the importance of removing breast tumors during the early or precancerous stage. Fifteen were benign and thirteen were malignant tumors. Of the former patients, all are now well and strong, while only five of the latter are living; one has a recurrence and is being treated with the roentgen ray; three who have passed the five-year period are well, while I have not heard from a sixth in some months. In two of the women the tumors had been present between four and five years; in others, only a few weeks to a month or two. In all cases the principal symptom was a lump; in a few, pain was noticed during the menstrual period. In both the intracystic adenoma and the intracanalicular fibroma there had been a bloodstained discharge from the nipple before the enlargement was noticed. In eight of ten cases the diagnosis was easy, as the clinical picture was complete.

Relief of Menorrhagia and Metrorrhagia by Roentgen-Ray Treatment

DR. W. A. COLE, Savannah: Roentgen-ray therapy is now considered by many to be the method of choice in all cases of menorrhagia of the menopause in which the presence of carcinoma is definitely excluded either by the history or by a diagnostic curettement, and in those cases not presenting a large, soft myoma which is likely to undergo malignant degeneration later. It is also used in cases of menorrhagia, or metrorrhagia in young women, when there is a small mucous fibroid, when no gross pathologic condition is demonstrable, and in cases presenting a large myoma in which there is a definite surgical risk.

Spinal Anesthesia

DR. W. L. COOKE, Columbus: Spinal anesthesia may be used with absolute assurance of perfect anesthesia in any operation of any magnitude below the umbilicus. In my hands it has been an absolutely safe procedure. I have used this method of anesthesia in all kinds of operations from a case of simple hemorrhoids to a complete hysterectomy, and from a simple amputation of the leg up to a bone graft for ununited fracture of the femur. I do not know exactly how long the anesthetic effect lasts, but I have performed operations that required anywhere from fifteen minutes up to almost two hours, without the patient's experiencing any pain whatever.

Hypertrophic Stenosis of the Pylorus

DR. W. WHATLEY BATTEY, JR., Augusta: During the last few months I have operated in three cases of hypertrophic stenosis of the pylorus in infants, aged 3, 5 and 6 weeks, respectively.

I did the Rammstedt operation.

Some Diagnostic Problems of the Chest

DR. E. C. THRASH, Atlanta: Every physical examination of the chest, when the patient is really sick, should be checked up with the roentgen ray. Our latest two epidemics of influenza have frequently caused two disturbances that have been exceedingly difficult to differentiate from tuberculosis. These are the hemic infections and the endocardiac disturbances without valvular lesions. Both disturbances present practically the same symptoms as tuberculosis, and the fact that the physical signs of tuberculosis are not present does not enable one to rule out the latter disease. A

blood culture will often clear up this problem; but if it is negative, one is still confronted with a problem. A careful study of the roentgenogram and a survey of the past history of the patient will often throw light on these cases.

Local Anesthesia in Abdominal Surgery

DR. L. W. GROVE, Atlanta: I have had no hesitancy in recommending the method in well defined acute conditions or in simple drainage. I would hesitate to advise local anesthesia in obscure inflammatory masses, in which event some form of anoci-association anesthesia, preferably local anesthesia with gas-oxygen, is unquestionably the safest and surest, and is the anesthetic of choice.

Importance of Ureteral Stricture in Abdominal Diagnosis

DR. GEORGE Y. MASSENBURG, Macon: A patient sent to me for operation with a diagnosis of appendicitis had had recurrent attacks of pain in the appendical region for ten months, the attacks lasting from a few hours to several days, with a constant soreness near McBurney's point. She had some nausea with the attacks, but no vomiting. In the more severe attacks, she occasionally had some pain in the right lumbar region, and some bladder irritability. She never passed any blood in the urine. A catheterized specimen of the urine was negative. Roentgen-ray examination revealed a small shadow in the region of the lower end of the ureter. On cystoscopic examination, the bladder appeared normal. An opaque catheter in the right ureter showed the shadow to be a small stone in the ureter. With a wax bulb on the catheter, a stricture was found in the ureter at about the region of the stone. The stricture was dilated with a 4 mm. bulb. The patient had considerable pain for about twenty-four hours, but left the hospital in a few days. One month later the patient was still free from symptoms, but had not passed the calculus. She was dilated a second time, April 10, 1919. She is still free from all symptoms, but has not passed the stone.

SOUTH CAROLINA MEDICAL ASSOCIATION

*Seventy-Second Annual Meeting, held in Greenville, S. C.,
April 20-21, 1920*

The President, Dr. E. W. PRESLEY, Clover, in the Chair

Inducing Rapid Growth of Epithelium Over Areas Denuded of Skin by Use of Zinc Oxid Adhesive Plaster Applied Directly to Raw Area

DR. LINDSAY PETERS, Columbia: If the denuded area shows acute inflammation with abundant suppuration, it is dressed daily with dichloramin-T suspended in oil, making a 1 per cent. mixture. When the wound is clean, adhesive plaster is placed immediately on the wound, without the interposition of gauze or other material, the wound being completely covered either with a single piece or with overlapping straps. Dressings should be done daily. No antiseptics are used. The action of the adhesive plaster may be explained by its possible ionic effect, by the production of edema, carrying out the idea of Bier's hyperemia, by the exclusion of air, destroying aerobic bacteria, and by excess of serum bringing a new army of antibodies into play.

New Treatment of Enuresis in Children

DR. WILLIAM R. BARRON, Columbia: In so-called idiopathic enuresis, the treatment consists in emptying the bladder with a catheter under aseptic precautions, and then instilling through the catheter into the bladder 1 ounce of a 3 per cent. argyrol solution, letting some remain in the bladder for from one-half to one hour, when it is voided. This is done every day or every other day, as indicated. The strength of the argyrol is gradually increased until 10 per cent. is borne without irritation. It is not well to use strengths of argyrol that irritate, because they will not be retained and will make the child object to treatments. In boys, instead of inserting a catheter, the argyrol is injected through the urethra with a bulb syringe, washing out the urethra with plain sterile water after the argyrol is forced into the bladder.

Folliculosis Versus Trachoma in Our Schools

DR. J. W. JERVEY, Greenville: In the early stages many cases of trachoma present clinical appearances indistinguishable from follicular conjunctivitis by any diagnostic method, macroscopic or microscopic. In a few weeks or at most a few months, the essential changes characteristic of trachoma will appear if this is the disease; if they do not appear, then we are dealing with something else. No case of trachoma can be cured in the sense that all traces of it can be eliminated. What the mistaken ophthalmologist cures is folliculosis, and the profession and the public should realize this fact. And here the cure is infinitely worse than the disease. Trachoma is no respecter of age, while folliculosis occurs among schoolchildren and is an adenoid hypertrophy. When it exists, one will invariably find in the same child hypertrophied tonsils and nasopharyngeal adenoids, and refractive errors seem practically always to be present in these cases. This condition has been mistaken for trachoma by officials of the United States Public Health Service, and children have been operated on needlessly. It is important to have a well trained ophthalmologist on the state board of health.

Malignant Tumors of Male Breast: Report of Case

DR. GEORGE BENET, Columbia: Benign tumors of the male breast do not seem to differ essentially from those found in the female. My case was one of fibro-adenoma with a malignant degenerative process in a man, aged 18. He complained of a small lump in the left breast of four months' duration, which caused him no inconvenience until after a slight blow on the breast two weeks before coming under observation. The boy was somewhat feminine in appearance, and his muscular development was not that of a boy of 18. There was no glandular involvement.

The Proctoscope in General Diagnosis

DR. F. M. DURHAM, Columbia: All patients suffering from symptoms referable to the rectum that do not yield to ordinary treatment should be given a proctoscopic examination. No surgeon should operate on a patient for hemorrhoids, especially of the bleeding variety, without first giving his patient such an examination. All patients suffering from back, uterine and bladder symptoms, and all cases of intestinal indigestion and auto-intoxication, which are refractive to treatment and have no definite pathologic lesion, should also undergo proctoscopic examination.

The Incision of Tumors for Diagnosis

DR. KENNETH M. LYNCH, Charleston: The ordinary manipulation of a tumor in the course of examination may be the source of much more stimulation than would be an incision. If we weigh the evidence for and against and the advantages and disadvantages of submitting a specimen for microscopic examination, both to the patient and to the surgeon, I believe microscopic examinations would become of more general practice. The story of no tumor is complete without a microscopic examination, whether preoperative, at operation or postoperative, as the circumstances surrounding each case demand.

Metabolism as an Aid in Diagnosis, Prognosis and Treatment of Hyperthyroidism

DR. STUART MCGUIRE, Richmond, Va.: There has not yet been sufficient experimentation or practical experience with basal metabolism to determine its exact clinical value. Like the thermometer, it promises to be a most valuable agent; but, like the thermometer, its record must be considered together with the patient's clinical symptoms. A patient with hyperthyroidism may have a high metabolic rate and not be as seriously sick as another with a lower rate who has structural changes in the heart, liver or kidneys. The metabolic rate of the patient is a definite index of the degree of hyperthyroidism present, and therefore very valuable in making a diagnosis. The onset of hyperthyroidism is so slow that it is difficult to recognize it in its incipience; and here the metabolic rate will clearly differentiate it from hysteria, neurasthenia, tuberculosis, and other conditions with which it may be confused. Again, in the later stages,

there develop symptoms due to degeneration of the heart, liver or kidneys, and it is difficult to say how much the patient suffers from hyperthyroidism and how much from damage to the vital organs. Here also a determination of the basal metabolism will be of value, not only for diagnosis but for prognosis as well. Usually, a patient's clinical symptoms coincide with his metabolic rate; but sometimes they do not. Patients with high metabolism and moderate tachycardia are more seriously ill than those with moderate metabolic increase and a very rapid heart action. In treating a patient for hyperthyroidism, the estimation of the metabolic rate is of value first to determine the safety of the measure to be employed, and second to ascertain its efficiency.

Autointoxication

DR. EDWARD H. GOODMAN, Philadelphia: I protest against the use of this term and the making of a diagnosis without evidence which at the present moment has not been universally accepted as unquestionable. Not every one who uses the term autointoxication understands by it what he wishes others to understand, and which in the hands of many means so many varied things. The term is a loose one loosely used.

Renal Calculus

DR. G. T. TYLER, Greenville: This report includes five cases of kidney stone; four patients have been operated on and one patient is still under observation. All were cases of single stone in women: four were in the left kidney and one in the right. Except in one case, all the diagnoses were made and confirmed by differential urinary and roentgen-ray findings. In this case the diagnosis was appendicitis, but was disproved by obtaining a specimen of urine from the right kidney. At the time of the attack, the patient had boils over the buttocks and back; the kidney infection was probably secondary to them. Though I used the wax-tipped catheter, in only one instance was there a scratch noted on it. This was because the stone lay outside of the course of the catheter. Except in one case the stones were all removed by pyelotomy. In one case in which both kidneys were involved, the induction of adequate drainage, together with the injection of silver nitrate and mercurochrome-220 into the kidney pelvis resulted in increasing the phenolsulphonephthalein elimination from both kidneys to 25 per cent. in twenty minutes. In these cases and in three others not cited in detail, I feel that good results have been obtained only by the conservation of the kidney function and by the effort to make the patient a safe risk before undertaking operation.

Medical Certificates of Insanity

DR. J. W. BABCOCK, Columbia: I wish to appeal to physicians for greater care in the making out of certificates of insanity. There is an indifference on the part of physicians which is by no means confined to South Carolina, but is common all over the country. The physician who signs a certificate of commitment without making a careful examination and going carefully into the case does a serious injustice to the patient and to himself. It is well to remember that relatives may sometimes allege that a person of whom they wish to get rid is insane when such is not the case.

Hospital Standardization in South Carolina

DR. J. R. YOUNG, Anderson: Last October, only 198 of our 671 hospitals of 100 or more beds could measure up fully to the minimum standard set by the American Medical Association. One year before that, only eighty-nine could qualify. We provide one hospital bed for every 1,100 of our population, while the average ratio is one bed for 486. The medical profession is responsible for any defects in the quality of hospital service. The rank and file of the profession can help in attaining state-wide improvement of hospitals by measuring the efficiency of the hospital to which they refer their patients by the yardstick of the minimum standard. If physicians will (1) become familiar with the aims of hospital standardization; (2) study closely the progress which the hospital of their choice is making, and (3) lend their full support and cooperation to it, they will aid tremendously this organized effort of hospital improvement.

Significance of Nervousness in Children

DR. J. F. MUNNERLYN, Columbia: It is becoming more and more evident that in children who have certain slight or grave defects in their nervous make-up, something in their development has not gone right. This does not mean that they are intellectually deficient, but that something has gone wrong in the realm of mental functions from which spring desires and motives. There should be some organized plan for the study and control of these early apparently trivial abnormalities. The work of psychiatric clinics in Massachusetts and New York has been most gratifying, and where this phase of health work has been instituted it is considered just as important as that which has to deal with the control of tuberculosis, venereal diseases, etc. Many unfortunate individuals, who are at present steering directly to an inevitable mental breakdown, can be helped to live happy and efficient lives.

Diagnosis of Atypical Malaria

DR. FRANCIS B. JOHNSON, Charleston: Pulmonary tuberculosis is probably more often mistaken for malaria, and malaria for tuberculosis in the Southern states, than any other disease, because of the widespread prevalence of both. Not infrequently both exist. The atypical malarial conditions are more usually associated with the chronic infections of the pernicious type, particularly those not characterized by a definite paroxysm. Among conditions that may be ascribed to malaria are found diarrhea, dysentery, various types of neurasthenia, paralysis, ulcerative stomatitis, multiple gangrene, orchitis, and many diseases of the eye—these cases have been proved by the finding of the plasmodium of malaria, and the patients have recovered under quinin treatment.

Use of Mercurochrome in Treatment of Some Urologic Conditions

DR. T. M. DAVIS, Greenville: Sixty gonococcal urethritis cases in males have been treated by this drug in 2.5 per cent. strength. The treatments were controlled by frequent examinations of the smears. In almost all cases the discharge had ceased within twenty-four hours, and in all cases by the end of the third day. The average length of time to effect a cure was twenty-six days. In none of the female patients (ninety-five) treated has there been an extension of the disease to the endometrium.

The Capillary Heart

DR. W. F. R. PHILLIPS, Charleston: In the circulation of the blood, as generally described, the all sufficient kinetic force is the heart. Some recognition, however, is given to auxiliary kinetic factors represented in the contractions of the skeletal and splanchnic muscles and to the suction-pump action of the respiratory mechanism. A great fall in pressure takes place in transition from arteriole to capillary; a lower to a somewhat higher pressure prevails in the veins. It is obvious that other factors than the left ventricle must enter into and complete the systemic circulation. To these factors is applied the name capillary heart. Many experiments in the injection of fluids into arterioles and capillaries have convinced me that there is a maximum point of resistance in the transition from arteriole to capillary, though it cannot definitely be stated whether it is solely resident in the capillary or partly resident there and partly in the surrounding muscular tissue. Certain experiences indicate that the capillaries of different parts and organs are differently endowed with powers of resistance. That living capillaries have the power to contract, even to the extent of completely obliterating their lumen, is a well known fact; but the significance of this property in its relation to the phenomena of circulation does not seem to have attracted the attention that its possibilities seem to attach to it.

Significance and Treatment of Fever During Infancy and Childhood

DR. J. LABRUCE WARD, Columbia: It is only in rare instances that it is advisable to use antipyretics other than hydrotherapy. The physician must be guided by the general condition of the patient, rather than by the disease or the degree of fever.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

American Journal of Roentgenology, New York

March, 1920, 7, No. 3

- Bony Changes in Feet Following Fracture of Vertebrae. L. Bryan, San Francisco.—p. 125.
Personal Experience in Military Roentgenology Overseas. L. S. Goin, Battle Creek, Mich.—p. 128.
Manufacture of Films and Plates for Use in Roentgenology. M. B. Hodgson, Rochester, N. Y.—p. 131.
Fluoroscopic Examination in Injuries to Head. M. W. Clift, Flint, Mich.—p. 137.
Diaphragmatic Hernia. A. S. Macmillan, New York.—p. 143.
Roentgen Ray in Cancer of Uterus. H. K. Pancoast, Philadelphia.—p. 146.
Influenzal Pneumonia from a Clinical and Roentgen-Ray Study. J. Markavy and J. H. Selby, Takoma Park, D. C.—p. 148.

Bone Changes in Feet Following Fracture of Vertebra.—Two cases are reported by Bryan. He says little attention has been given to the fact that fracture of the vertebrae is followed by sensory disturbance in the legs and feet accompanied by bony changes.

Diaphragmatic Hernia.—Among approximately 15,000 cases examined with the roentgen ray at General Hospital No. 1, three cases of diaphragmatic hernia were found. The diagnosis in each case was first made by roentgenographic examination.

Boston Medical and Surgical Journal

April 29, 1920, 182, No. 18

- Relation of Teeth to General Health. C. H. Lawrence, Boston.—p. 443.
Milk Situation. H. Swift, Concord.—p. 447.
New Clinic: Advance Movement in Child Welfare and Race Regeneration. J. V. Haberman, New York.—p. 450.
Intestinal Obstruction: Report of Cases. E. A. Codman, Boston.—p. 451.

Milk and Tuberculosis.—It appears that the control of human tuberculosis depends to an appreciable extent on a much closer control of bovine tuberculosis. To control this menace, Swift suggests, first, to allow the farmer something nearer the true value for a condemned animal. He would then be a little more willing to help in the fight. Second to start a demand for tuberculosis-free milk. This can be done and ought to be done by education of the physician first, who in his turn will educate his patients. Some farmers have said that they would make tuberculosis-free milk if there was a market for the product and if they could receive a price that would allow them a better margin in which to stand the losses.

May 6, 1920, 182, No. 19

- Product of Urological Clinic. W. C. Quinby, Boston.—p. 469.
Social Service and Clinic. A. C. Reed, San Francisco.—p. 476.
Technic of Lumbar Puncture. L. G. Lowrey, Boston.—p. 479.
Milk-Borne Epidemic of Typhoid and Value of Widal Reaction in Detecting Typhoid Carriers. E. B. Bigelow and G. L. Berg, Worcester, Mass.—p. 481.
Use of Blood and Blood Serum in Treatment of Disease. C. K. Johnson, Burlington, Vt.—p. 482.

Milk-Borne Epidemic of Typhoid.—The interesting circumstances in the epidemic studied by Bigelow and Berg were: the small number of persons who developed typhoid among those who may have ingested the organism; that dairymen who are carriers, though excreting typhoid organisms for weeks and months, rarely contaminate the milk; the value of the positive Widal as an aid in the detection of carriers.

Blood and Blood Serum in Therapy.—Special attention is drawn by Johnson to the use of blood in infants with anemia and malnutrition. Infants with jaundice, delayed clotting time and a tendency to hemorrhage may be benefited greatly by the injection of blood. It may also be useful in the treatment of purpura. Hemolytic tests should be made in every case.

Journal of Immunology, Baltimore

January, 1920, 5, No. 1

- So-Called Neisser-Wechsberg Inhibiting Phenomenon in Bactericidal Immune Sera. Th. Thjøtta, Bergen, Norway.—p. 1.

Relation of Rate of Absorption of Antigen to Production of Immunity.

M. W. Cook, Providence, R. I.—p. 39.

*Meningococcal Activity of Blood. T. Matsunami, Tokyo.—p. 51.

Neisser-Wechsberg Inhibiting Phenomenon.—The work reported on by Thjøtta may be summarized as follows: The inhibiting phenomenon of Neisser and Wechsberg is of a specific nature. It is to be found in active as well as in inactive serum. It develops during the immunization and can be found in a very high degree in dysentery immune serum. In active serum from immunized animals examined without the addition of foreign complement, the phenomenon presents itself as a complete abolition of a normal bactericidal action. The inhibition is due to antibodies that arise during the immunization or during the natural disease. These antibodies are not identical with the agglutinins, the bacteriolysins or the precipitins. They must be considered as specific antibodies, which combine with dissolved antigen to form molecular complexes, that have a marked tendency to absorb complement and to withdraw it from the bactericidal antibodies. The titer of inhibition is directly proportional to the employed dose of complement. With a small dose of the latter, smaller doses of inhibiting antibodies can be demonstrated than with a larger dose of complement. The inhibiting antibodies do not affect the bacteria themselves, nor can they be removed from the serum absorption with an emulsion of the homologous bacilli. They can be demonstrated in serums that lack any bactericidal action.

Meningococcal Activity of Blood.—It was found by Matsunami that normal rabbit blood and serum may kill virulent normal meningococci in vitro within three hours. The meningococcal activity in vitro of normal rabbit blood was found to be increased up to a certain limit by the intravenous injection of the living and autolyzed meningococci. After that, further immunization did not appear to increase bactericidal activity, was generally rather irregular and not infrequently even decreased meningococcal activity of the blood. The more highly immunized rabbit's blood was found sometimes less bactericidal than that of slightly immunized rabbit's blood. The meningococcal activity of normal rabbit's serum has been found not to be increased by artificial immunization and also to be comparable with that of defibrinated blood of an immune rabbit. The meningococcal activity in vitro of immune rabbit's blood was found by the pipet method to be distinctly stronger than that of the serum, of defibrinated blood or of blood consisting of blood cells and serum or of citrated blood. It was suspected that at least one factor in explaining the higher meningococcal activity in vitro of immune rabbit's blood compared with defibrinated blood, citrated blood and serum, lies in the influence of coagulation of the blood, which is permitted in the regular test as described, favoring the phagocytosis of meningococci. Matsunami maintains that a meningococcal blood test cannot be accepted on the basis of his investigations for the purpose of measuring or determining the artificially induced immunity against meningococci.

Journal of Urology, Baltimore

February, 1920, 4, No. 1

- *Urinary Tract Purpura: A Probable Entity. A. R. Stevens and J. P. Peters, Jr.—p. 1.
*Riedel's Lobe of Liver Complicating Urologic Diagnosis. V. J. O'Connor, Boston.—p. 97.
Device for Holding Ureteral Catheters. C. S. Levy, Baltimore.—p. 107.
Renal Migration of Ureteral Calculus: Case Report. J. H. Neff, University, Va.—p. 111.

Urinary Tract Purpura.—Stevens and Peters report a group of cases that presented as a distinguishing feature a purpuric condition confined, in at least the majority of cases, entirely to the urinary tract. This condition was marked by an acute onset, temperature of an irregular type, general febrile symptoms, frequency of urination, dysuria, gross hematuria, cylindruria and a reduction of the phenolsulphonephthalein excretion. The disease, as far as it could be observed, tended to run a prolonged subacute or chronic course. Occasionally, acute relapses occurred. Pathologic examination of the lesions obtained from the bladder wall by means of a cystoscopic punch revealed submucous hemorrhages unaccom-

panied by any signs of inflammation. Suggestive vascular changes were observed in some specimens. Bacteriologic examination of blood and urine proved negative. Attempts to determine the etiology of this condition or to identify it with any known disease were unsuccessful. The authors believe the condition is sufficiently distinctive to merit consideration as a new disease.

Urologic Diagnosis Complicated by Riedel's Lobe of Liver.—O'Connor has found that Riedel's lobe offers a positive complication to the urologist in making a diagnosis even in carefully studied cases. The occurrence of this condition is sufficiently frequent to be borne in mind when determining the nature of a palpable mass in the right flank or abdomen. In the presence of acute infection in the urinary tract, the occurrence of a linguiform lobulation makes a differentiation very difficult and the apparent indications are for an immediate surgical procedure. The mass in each of O'Connor's two cases could be outlined definitely on palpation and moved slightly on respiration. The notch in the elongation gave the physical signs usually found on palpating the upper pole of a low lying or enlarged kidney. In the cases described, circumstances prevented getting ureteropyelograms on the right side. These would have served to assist in ruling out the supposition that the palpable mass was kidney. In both patients the gallbladder and surrounding structures were normal, contrary to Riedel's original conception of the etiology of the prolongation. In both individuals the structures of the elongation felt and appeared to be normal liver tissue.

Medical Record, New York

April 17, 1920, 97, No. 16

- Gynecologic Patient of General Practitioner. L. Broun, New York.—p. 635.
Balance Between Endocrines and in Each Individual Endocrine. S. W. Bandler, New York.—p. 638.
Simplified and Safer Hysterectomy. H. Crutcher, Joliet, Ill.—p. 647.
Symbolism. H. Laveson, New York.—p. 649.
*Present Status of General Anesthesia from Hospital Viewpoint. S. D. Ehrlich, New York.—p. 651.
*Sarcoma of Round Ligament. G. L. Moench, New York.—p. 652.
Clinical Indications for Enucleation of Faucial Tonsil. M. Quackenbush, New York.—p. 653.

Nurse as an Anesthetist.—Ehrlich maintains that a nurse is not fully competent to administer anesthetics. She may be trained in the mechanical processes of the administration, and may even have had a few months' instruction in physical diagnosis. But this at best can give her only a superficial experience, and does not prepare her to meet the conditions with the matured judgment which comes only with a thorough knowledge of medicine. She is no more qualified to do the work of an anesthetist than a nurse with operating room training and a superficial knowledge of anatomy and the mechanical skill which has enabled her to master the steps necessary to open an abdomen and remove an appendix, for example, would be qualified to do the work of a surgeon. The matured judgment which comes only with a general knowledge of medicine is wanting in each case. The fact that nurses administer anesthetics in a few large clinics is by no means proof that it is a good thing either for the patient or for the institution. Ehrlich believes that a hospital which entrusts work of this nature and importance to a nurse assumes a grave responsibility. Justice to the patient demands that he be served with the utmost skill, not only in the mechanical administration of the anesthetic, but in the ability to cope with any emergency which may arise during the anesthesia. If a nurse finds that she is interested in this work, she should study medicine, and so become thoroughly qualified from every point of view.

Sarcoma of Round Ligament.—In Moench's case the diagnosis was made before operation. The tumor was situated in front of the external inguinal ring. According to Frankl's nomenclature it was, therefore, a preinguinolabial growth. The tumor in toto was about the size of a grapefruit. Microscopic examination showed that the main part of the tumor consisted of a myofibroma whose connective tissue had undergone hyaline degeneration in many places. The clinical course of the case showed the extreme malignancy of the new growth. The woman died eight weeks after the opera-

tion, despite the fact that at the time of operation there had been no evidence of sarcoma present, either in the ligamentum rotundum or in the inguinal glands.

April 24, 1920, 97, No. 17

- *Problems of Boarding-Out with an Attempted Solution. H. D. Chapin, New York.—p. 677.
Weakened Foot: Its Measurement and Correction. C. P. Hutchins, Syracuse, N. Y.—p. 681.
Malignant Endocarditis. Edwin Schisler, St. Louis.—p. 690.
Advantages of Home over Institutional Care. M. C. Hill, New York.—p. 692.
*Yeasts from Human Colon. J. M. Lynch and J. W. Draper, New York.—p. 693.
*Manic Depressive Insanity and Raynaud's Disease. E. H. P. Ward, White Plains, N. Y.—p. 694.

Speedwell System for Care of Infants.—In 1902 Chapin developed what is known as the Speedwell system that represents a sustained effort so to regulate and systematize boarding out as to place its good effects at a maximum and its possible bad effects at a minimum. This has been accomplished by developing what may be called a unit system of intensive boarding out. A unit is a neighborhood that has been selected after a survey has been made to learn the general conditions of healthfulness and the number of good homes that may be available in the locality. There is then inaugurated a constant oversight, especially as to diet and hygiene, on the part of a salaried physician and nurse who are thoroughly familiar with this class of cases and competent to deal with them. The children are kept indefinitely, until digestion and assimilation have improved sufficiently to result in a permanent increase in weight and strength. Accordingly, work is continued during the whole year. In each neighborhood foster mothers are trained and they become fairly expert in this work. In comparing the results of institutional care with systematized boarding out, it will be found that both mortality and morbidity are less under the latter plan. Chapin describes a plan in operation which consists of collecting units in the city that are in constant communication with units in the surrounding villages. Thus far the Speedwell has developed three of these units.

Yeasts in Human Colon.—Feces obtained from the rectum of a patient complaining of severe headache and sciatica, and who had had tuberculosis ten years previously, when inoculated into glucose agar, yielded a profuse growth of yeast cells, associated with a diplococcus and extremely few colon bacilli. The patient had never received the yeast treatment. Later, the same organism was isolated, and also what appeared morphologically to be a different type of the same yeast. A saline suspension of a pure agar culture was injected into rats. Those injected intraperitoneally showed, scattered all over the peritoneum, many small and large rounded nodules, translucent, with centrally located whitish spots, very suggestive of a tuberculous lesion. The three rats injected subcutaneously had developed a localized, tumor-like granuloma having a general similarity to the peritoneal lesions, but no metastases were found. Intravenous injection of mice resulted in death from embolism within twenty-four hours. This study is not yet sufficiently advanced to justify any conclusions as to the relation of these yeasts to the pathologic condition. Further laboratory studies are being made.

Manic Depressive Insanity and Raynaud's Disease.—Ward suggests that manic-depressive insanity is a form of Raynaud's disease affecting the frontal region of the brain.

May 1, 1920, 97, No. 18

- *Intestinal Pathology in Functional Psychoses. H. A. Cotton, Trenton, N. J., J. W. Draper, and J. M. Lynch, New York.—p. 719.
Maxillofacial Service at A. R. C. M. Hospital No. 1, A. E. F., France. W. T. Coughlin, St. Louis.—p. 725.
Home Versus Hospital Care of Cases of Influenza. L. E. Holt, New York.—p. 731.
Polycystic Kidney of Atypical Character. L. Broun, New York.—p. 735.
Does Community Responsibility End When Sanatorium Treatment has Been Given? R. C. Kirkwood, Prescott, Ariz.—p. 738.

Intestinal Pathology in Functional Psychoses.—Cotton and his associates have been able to restore 270 patients out of a total of 410. By reexamining the remaining ones they were able to find local foci which had been overlooked and by January, 1920, this number had been reduced to 100. In

other words, 75 per cent. of this group, or 310, when the local foci of infection found in the teeth, tonsils, stomach, and cervix were eliminated, were able to be discharged and returned to their respective homes. The remaining 25 per cent. apparently did not react to the treatment and remained unimproved. The object of the investigation, of which this is a preliminary report, was to search further for possible sources of infection, mainly in the lower intestinal tract. This group suggested terminal ileac and colonic trouble because of frequent "bilious attacks" during youth; habitual constipation, sometimes alternating with diarrhea; intermittent attacks of abdominal pain, and, not infrequently, a history given by the mother of intestinal disturbances beginning in early infancy. From an experience with these cases, the authors were convinced that all patients who showed any tendency toward chronicity, or who did not improve under the routine treatment directed toward the removal of infection in the teeth, tonsils, stomach and cervix, were cases in which a thorough investigation of the lower intestinal tract was indicated with a view to surgical intervention. A detailed report is made showing how many patients recovered, how many were improved and how many were benefited.

Modern Hospital, Chicago

April, 1920, 14, No. 4

- Henry Ford Hospital in Time of War: U. S. Army General Hospital No. 36. A. T. Cooper, U. S. Army.—p. 259.
Henry Ford Hospital in Time of Peace. D. D. Martin, Detroit.—p. 266.
Purpose and Methods of Air Control in Hospitals. E. Huntington, New Haven, Conn.—p. 271.
Training of Hospital Superintendents. S. S. Goldwater, New York.—p. 275.
Gardening as Occupation for Tuberculous. J. I. Pinkney, Wallum Lake, R. I.—p. 277.
Prevention of Infections in Hospitals. D. M. Lewis, New Haven, Conn.—p. 282.
The Doll Eternal. M. H. Barker, Worcester, Mass.—p. 284.
Rural Hospital Organization. J. W. Pettit, Ottawa, Ill.—p. 287.
Hospital Standardization in Woman's Hospital in New York State. G. G. Ward, New York.—p. 289.

New York Medical Journal

April 10, 1920, 111, No. 15

- *Psychopathies and Neuropathies of Cardiovascular Diseases. T. E. Satterthwaite, New York.—p. 617.
What Fears and States of Anxiety Mean to the Gynecologist. S. W. Bandler, New York.—p. 619.
Heart Disease in Adults. L. I. Dublin, New York.—p. 622.
Cardiospasm From Medical Viewpoint. E. A. Aronson, New York.—p. 624.
Hyperchlorhydria. R. H. Rose, New York.—p. 626.
Upper Abdominal Disease. M. Behrend, Philadelphia.—p. 629.
Interest of State in Health of Its Citizens. W. A. Groat, Syracuse, N. Y.—p. 631.
Is Endemic Goiter a Water Borne Disease? J. C. O'Day, Honolulu.—p. 634.

Arrhythmias and Psychopathic States in Cardiovascular Disease.—One hundred histories of cardiovascular patients were analyzed by Satterthwaite to discover the interrelation as to frequency between the arrhythmias and the psychopathic states in cardiovascular diseases. The results were as follows: With arrhythmias, taking them as predominating features in these cardiovascular cases, of the first fifty the following abnormalities were noted in seven: morbid apprehension, one; depression, four; defective mentality, two; total, seven, or 14 per cent. Of the second fifty, depression was noted in three. Total in the 100 cases: Psychopathies in ten. The range was from 6 to 14 per cent. Without arrhythmia: Of the first fifty cases the following abnormalities were noted in ten: morbid apprehension, four; depression, two; neurasthenia, three; hyperexcitability, one. Of the second fifty cases the following abnormalities were noted in ten as follows: depression, six; melancholia, two; hysteria, one; defective mentality, one. Total of arrhythmias without psychopathies, 20 per cent., as against 10 per cent. of arrhythmias with psychopathies. In the same series with respect to tachycardias, 6 per cent. were associated with psychopathies, while in 11 per cent. of the cases there were no psychopathies. Evidently, then, there is no reason to believe that either arrhythmias or tachycardias are etiologic factors of any great moment in the psychopathies. On the other hand, the reports of the Manhattan Hospital for the Insane

show that in the psychopathic cases cardiovascular disease was present in about one third of the psychopathic patients.

In Satterthwaite's 100 cases the neuropathies were represented in 33 per cent. Some of them resulted from direct action of the heart or blood vessels, some from reflex causes of varying character. Satterthwaite concludes, however, that arrhythmias are not active factors in causing psychopathies; tachycardias even less so. The incidence of cardiovascular disease in causing psychopathies in general, and in being contributing causes of death in them is from 32 to 35 per cent. On the other hand, senile psychoses may be associated in a similar manner with cardiovascular disease in 77 per cent.; psychoses with cerebral arteriosclerosis in 80 per cent. of the cases. With respect to the incidence of such neuropathies as migraine, anginoid attacks, neuralgias, pareses, or paralyses and tremors, Satterthwaite's figures put it at 33 per cent. Most of such neuropathies, however, are either incidental or accidental associates of the cardiac or vascular diseases.

April 17, 1920, 111, No. 16

- *Dental Infection in Causation of Nervous and Mental Disease. C. K. Mills, Philadelphia.—p. 661.
Present Status of Oral Sepsis in Relation to Medical Diseases. J. M. Anders, Philadelphia.—p. 665.
Dental Therapeutics Based on Clinical and Roentgen Ray Investigations. W. M. Fine, Philadelphia.—p. 668.
*Relation of Focal Infection to Mental Diseases. H. A. Cotton, Trenton, N. J.—p. 672.
Major Surgery of Maxillary Bone Through Oral Orifice. S. L. McCurdy, Pittsburgh.—p. 677.
Survey of Dental Infections. M. Diamond, New York.—p. 687.
Mouth Sepsis. L. R. Cahn, New York.—p. 691.

Dental Infection as Cause of Mental and Nervous Diseases.—Mills states that a score or two of cases have passed through his hands or have come to his knowledge in which important nervous and mental diseases have been attributed to dental infection. In these, with the united support of physicians, roentgenologists and dental surgeons, the teeth in small or large numbers have been removed with results not only unsatisfactory but often so harmful as to impress Mills with the futility, if not the criminality of the procedure. Some of the diseases which came under his observation in connection with the question of dental infection are dementia praecox, manic depressive insanity, epilepsy, neurasthenia, hysteria and psychasthenia. The teeth in these cases were freely sacrificed, without a single result of convincing value.

Focal Infection and Mental Diseases.—Cotton believes that it can be shown by clinical evidence that certain types of mental diseases are caused by toxemia resulting from focal infection and that clearing up these foci of infection results in the recovery of the patient. He claims to have confirmation of this belief from the pathologic and bacteriologic studies made after death, and says he has yet to find a single case with a functional psychosis without accompanying infection. He discusses particularly dental infections, and the influence of unerupted third molars, and cites briefly a number of illustrative cases.

April 24, 1920, 111, No. 17

- *Incidence of Malignancy in Diseases of Gallbladder. J. F. Erdmann, New York.—p. 705.
Drainage and Mercury Ion in Cystic Goiter. G. B. Massey, Philadelphia.—p. 707.
Diffuse Vascular Goiters. J. C. O'Day, Honolulu.—p. 708.
Surgery in Chronic Diarrhea and Local Anesthesia in Anorectal Operations. S. G. Gant, New York.—p. 709.
Scope and Limitations of Local Anesthesia in Inguinal Hernia Operations. A. S. Morrow, New York.—p. 710.
Industrial Inguinal Hernia. A. E. Selteneys, New York.—p. 713.
Relation of Rectal Disturbances to Other Pelvic Disease. C. J. Drueck, Chicago.—p. 717.
Case of Simple Hypertrophy of Prostate. John F. X. Jones.—p. 720.
Relation of Focal Infection to Mental Diseases. H. A. Cotton, Trenton, N. Y.—p. 721.

May 1, 1920, 111, No. 18

- Obligations of Medicine in Relation to General Education. W. C. Braisted, Washington, D. C.—p. 749.
Lethargic Encephalitis. J. H. W. Rhein, Philadelphia.—p. 758.
Demonstration of Reconstruction Section of Defects of Hearing and Speech. C. W. Richardson, Washington, D. C.—p. 763.
Physiologic Therapy in Influenza. A. C. Geyser, New York.—p. 767.
Aftertreatment of Fractures. W. T. Johnson, Philadelphia.—p. 769.
Relation of Focal Infection to Mental Diseases. H. A. Cotton, Trenton, N. J.—p. 770. Concluded.
Eye in General Practice. G. D. Wolf, New York.—p. 775.

Incidence of Malignant Disease of Gallbladder.—During the first six months of 1918, Erdmann observed nine carcinomatous gallbladders out of sixty-eight operations on the gallbladder. During the second half of 1918, three cases among sixty-three operative cases were noted. The last half of 1917 gave but one malignancy in forty-seven operations on the gallbladder. In thirteen operative cases of general abdominal carcinomatosis, in which the primary focus could not be demonstrated positively the point of greatest involvement was in the neighborhood of the gallbladder. In a total of 1,903 patients operated on, malignant disease of all kinds, excluding the lip epithelioma, was found 285 times. Fifteen of these were of the gallbladder; forty-three of the stomach; sixty-seven of the breast; cecum, twelve; colon and sigmoid, twenty-eight; rectum and rectosigmoid, twenty-nine; not specifically classified, seventy-nine. This group includes the uterus, kidney, larynx, tongue, liver, thyroid and other organs. The ages of the gallbladder patients varied from 42 to 67. The patients were all females.

Philippine Journal of Science, Manila

November, 1919, 15, No. 5

- Fruit Flies of Genus *Dacus* Sensu Latiore (Diptera) from Philippine Islands. M. Bezzi.—p. 411.
 Melasidae Nouveaux (Coléoptères) Récoltés par C. F. Baker. E. Fleutiaux.—p. 445.
 *Abnormalities of Vertebral Artery. M. Canizares.—p. 451.
 *Rancidity of Philippine Coconut Oil. G. A. Perkins.—p. 463.
 Genus *Gordonia* in Philippine Islands. I. H. Burkill.—p. 475.
 Higher Basidiomycetes from Philippines and Their Hosts. O. A. Reinking.—p. 479.

Abnormalities of Vertebral Artery.—Two of the forty cases examined by Canizares showed abnormalities in origin of the vertebral artery; and fifteen, in point of entrance to the foramen transversarium. The findings confirm those of Bean and Thane with regard to the greater frequency of abnormalities of origin of the vertebral artery on the left side. Cases of unilateral variations in the point of entrance were almost twice as numerous as the bilateral ones.

Causes of Rancidity of Coconut Oil.—Two-year storage tests were made by Perkins on thirty samples of edible coconut oil. The results were in general agreement with the accepted views of rancidity and its causes. The action of light was found to be a powerful, but not necessary, factor in the production of rancidity. Enzymes from the fresh coconut meat had some effect on the keeping qualities of the oil, but sterilization was of doubtful benefit. An oil of low initial acidity remained sweet during two years' exposure to air and light. The measurement of rancidity is discussed briefly.

December, 1919, 15, No. 6

- Cambellosphaera*, New Genus of Volvocaceae. W. R. Shaw.—p. 493.
 Some Malayan Delphacidae (Homoptera). F. Muir.—p. 521.
 Nesting Place of *Micropus Subfurcatus* in Mindoro. D. C. Worcester.—p. 533.
 Method for Labeling Slides Used in Routine Stool Examinations (Use of Paper Clip). F. G. Haughwout.—p. 535.
 Additions to Flora of Guam. E. D. Merrill.—p. 539.
 Coleoptera Fauna of Philippines. W. Schultz.—p. 545.
 *Case of Acute Mania Associated with *Plasmodium Vivax* Infection. F. G. Haughwout, P. T. Lantin and R. Fernandez.—p. 563.

Plasmodium Vivax Infection in Acute Mania.—In the case cited by Haughwout and his associates, infection with *Plasmodium vivax* was associated with cerebral symptoms and death. Parasites were present in the peripheral circulation in small numbers only, and the temperature of the patient at no time rose higher than 39 C., that point being reached a few hours before death. Prior to that time the temperature did not rise above 38 C., this elevation coming several days after the onset of an acute mania. The patient was one of a series of cases that was being experimentally treated with roentgen rays for splenomegaly of malarial origin. He received only one irradiation, and that eight days before the development of the mental disturbance which ran its course and terminated in death eight days following its onset. At no time did the patient show any indication of injury that it seemed possible to trace to the roentgen rays, and the necropsy failed to reveal any such evidence. Microscopic examinations of the feces revealed an infection with

Ancylostoma duodenale. The urine was normal. *Plasmodium vivax* was found in the blood later. On the day of the development of the first mental symptoms an unmistakable trophozoite of *Plasmodium vivax* was found in the blood. The number of parasites in the peripheral blood increased somewhat until from four to six could be counted in 100 oil immersion fields. All were characteristic trophozoites of *Plasmodium vivax*. The patient, who had been receiving iron, quinin, and strychnin up to the time his mania developed, was put on intramuscular injections of quinin and urea, but he failed to show the slightest beneficial effects from them, except for the disappearance of the parasites from the peripheral blood. Twenty-four hours before death epinephrin was administered in the hope of forcing the parasites out of the spleen and into the circulation, but without success. The day before death, the differential leukocyte count showed 78 per cent. polymorphonuclear neutrophils, 7 per cent. lymphocytes, 14 per cent. large mononuclear leukocytes, and 1 per cent. eosinophils. The patient gave no history of previous attacks of mania, and the necropsy failed to disclose any evidence of syphilis. No Wassermann test was made.

FOREIGN

Titles marked with an asterisk (*) are abstracted below.

Archives of Radiology and Electrotherapy, London

March, 1920, 24, No. 10

- Malignancy. M. Roberts.—p. 308.
 Value of Combined Treatment, with Special Reference to Surgery, Electricity and Roentgen-Rays. F. Hernaman-Johnson.—p. 325.

British Medical Journal, London

March 27, 1920, 1, No. 3091

- Abdominal Emergencies. R. Morison.—p. 425.
 *Association of Aortic Endocarditis and Aortitis. J. E. MacIlwaine.—p. 428.
 *Treatment of Cerebrospinal Fever by Monotypical Serum. W. T. Munro.—p. 430.
 *Association of Lethargy with Influenza Bacillus. W. M. Crofton.—p. 431.
 *Appendicitis Without Protective Stiffening of Abdominal Wall. J. D. Malcolm.—p. 432.
 Artificial Pneumothorax. D. C. Coley.—p. 432.
 Dermatitis Artefacta in the Army. H. Davis.—p. 433.
 *Treatment of Gonorrhea in Women. R. S. Foss.—p. 434.
 *Cultivation of Actinomyces. M. H. Gordon.—p. 435.
 Case of Malignant Endocarditis. J. A. Nixon.—p. 435.
 *Acute Edema of Lungs. H. H. Brown.—p. 435.
 Novarsenobillon and Mercury Intravenously. R. Johnson.—p. 436.
 Ectopic Ovarian Cyst. J. W. Thomson.—p. 437.

Aortic Endocarditis and Aortitis.—MacIlwaine describes two specimens from two men who both exhibited the classical clinical appearance of aortic regurgitation. The first man died through the rupture of an acute aortic ulcer into the trachea, while the second died after a period of cardiac incompetence which lasted for a considerable time. These two cases occurred in a series of twelve pensioners in hospital who suffered from aortic endocarditis with aortic reflux.

Serotherapy of Cerebrospinal Fever.—Munro used a pooled serum containing 50 per cent. of antibodies to Type 2, and monotypical serum was used after the type was determined. Typing of the cases as they came showed something like 40 per cent. to be Type 1, 42 per cent. to be Type 2, 16 per cent. to be Type 3, and 2 per cent. to be Type 4. To add antibodies of Type 3 and Type 4 to such a pooled serum would reduce its value by from 50 to 82 per cent. of the total cases. Twelve consecutive cases of cerebrospinal fever have come to Munro's notice and no patient has died where it was possible to treat by monotypical serum.

Association of Lethargy and Influenza Bacillus.—Crofton records the histories of four patients treated with pure influenza antigen with good success. For example, in one case, on the chance that the infection might be caused by the influenza bacillus (the case occurred during the epidemic), the patient was given subcutaneously 2½ million pure influenza antigen. The improvement was marked at the end of twelve hours. Thirty-six hours later he was given 5 million, and forty-eight hours later 7½ million. After this he had

complete control of his functions and he was no longer lethargic, although his memory was still defective. He still had difficulty in reading, and his temperature was not quite normal—99 F. He then received 10 million in the morning, forty-eight hours after the last dose; that evening his lethargic symptoms returned in full intensity, although there was no further rise in temperature. His mind did not become normal again in two days. He made a rapid convalescence, but could not read for any length of time or study for some months.

Appendicitis Without Rigidity of Abdominal Muscles.—In two cases seen by Malcolm this sign was absent, and, therefore, he did not regard the cases as being appendicitis. In one case, when the abdomen was opened, the appendix, except about one-half inch at its base, was firmly adherent in a peritoneal pouch behind the cecum. It was removed and recovery was uncomplicated. This patient had her first attack of appendicitis in childhood. The absence of protective contraction of the muscles was due to the position of the appendix and to the fact that a spreading peritonitis was prevented by the adhesions, which had long existed.

Treatment of Gonorrhea in Women.—In these cases Foss makes use of methylene blue as a bactericidal agent, partly for its great affinity for the gonococcus and partly because the anilins are absorbed by mucous membranes and even by squamous epithelium: methylene blue, 1 gm.; glycerin, 25 c.c.; water, ad 100 c.c.. In acute and chronic cases the cervix is swabbed with a saturated solution of sodium bicarbonate in order to remove mucus and discharge. A gauze plug, 12 inches square, is dipped for half its length in the solution; this end is packed tightly against the cervix, the rest lightly in the vagina. The plug is removed after twenty-four hours. This is carried out for five days and then for two days dry plugs are used. This rotation is continued as long as the discharge occurs. There are two contraindications for the use of this method: pregnancy and the puerperal state. General treatment is carried out on the usual lines. Urinary antiseptics and gonococcal vaccine are given as indicated.

Cultivation of Actinomyces.—According to Gordon, the actinomyces fungus can readily be cultivated in ordinary nutrient broth to which a few drops of fresh human blood have been added. It is advisable to sow the material in two broths, one of which is covered by a layer of oil 1 cm. deep. After incubation for a few days at 37 C., the actinomyces fungus can be seen growing at the foot of the tube in small white masses like little puffballs. As a rule, growth occurs first in the broth covered with oil, but when other bacteria are present the actinomyces may come up first in the aerobic tube. The practical advantage of getting a growth is that a vaccine can then be prepared. In two cases in which a vaccine of the homologous organism was employed improvement resulted. In the majority of the cases, however, vaccine treatment was not attempted, as secondary infections were present and the disease was too far advanced. Vaccination with a stock actinomyces vaccine is, in Gordon's experience, useless; it seems essential to employ the actual strain infecting the patient.

Acute Edema of Lung.—Brown claims that this condition is allied to angioneurotic edema and is caused by a sudden and temporary dilation of the left ventricle, including the auriculoventricular orifice and consequent acute regurgitation and engorgement of the pulmonary capillaries. It is generally associated with high arterial tension and valvular disease.

April 3, 1920, 1, No. 3092

Diagnosis of Disease of Pancreas. A. E. Garrod.—p. 459.
Influenza Among the Lapps. A. H. Macklin.—p. 465.
Analysis of Early Cases of Beriberi. H. H. Hepburn.—p. 466.
Lesson of the War; Suppurative Middle-Ear Disease. H. Smurthwaite.—p. 467.
Strangulated Umbilical Hernia. C. M. Kennedy.—p. 468.
Herpes Zoster and Chickenpox. A. I. Cooke.—p. 468.
Acute Edema of Lungs. C. Musgrave.—p. 468.

Chronology of Beriberi Symptoms.—Hepburn undertook to analyze the early manifestations of beriberi, with a view to establishing the correct chronological order of the early signs and symptoms. Data were compiled from over 300

examinations of 100 cases. All patients were adult Siamese males, and each one was thoroughly examined at least twice. The first symptom or sign to be noted by the patient was invariably one of the three following: (a) edema of feet and legs (50 per cent.); (b) numbness or anesthesia of feet (43 per cent.); and (c) epigastric fullness and distress (7 per cent.). In every case the edema appeared first in the feet, then in the legs, and then in the hands. Appreciable swelling of the hands was seldom seen in these early cases. Practically all patients complained of more or less general weakness. Several patients stated that swelling of the feet had come and gone before the onset of anesthesia. Cardiac enlargement was found at the first examination in only 15 per cent. of cases. Subsequent enlargement occurred in four additional cases in spite of treatment. The treatment adopted was physical rest, with a diet rich in antiberiberi vitamins, polished rice being rigidly excluded. Further treatment was largely symptomatic. A soft mitral systolic murmur was heard at the first examination in twenty cases. Cardiac arrhythmia was noted in five of these early cases.

Strangulated Umbilical Hernia.—A successful resection of a gangrenous ileum is reported by Kennedy. The patient had an umbilical hernia.

April 10, 1920, 1, No. 3093

Soldier's Heart and War Neurosis: A Study in Symptomatology. J. Mackenzie.—p. 491.
Prognosis and Treatment of Chronic Nephritis. J. O. Symes.—p. 494.
*Operative Treatment of Ulcerative Colitis. P. Lockhart-Mummery.—p. 497.
*A Familial Form of Acoustic Nerve Tumor. E. Ward.—p. 496.
*Fibroids Complicating Pregnancy; Hysterectomy: Recovery. R. de Stawell.—p. 498.
Case of Cervical Caries Simulating Cerebellar Tumor. R. R. Armstrong.—p. 499.

Treatment of Ulcerative Colitis.—The best treatment of this condition, Lockhart-Mummery says is by frequent washing through with saline solution after an appendicostomy opening has been established. The operation should be performed as soon as a diagnosis has been made and not left as a last resort, although it may sometimes succeed even then. The diagnosis should always be confirmed by sigmoidoscopy.

Acoustic Nerve Tumor.—In the cases cited by Ward, the disease was present in members of three generations. Full details are given.

Fibroids Complicating Pregnancy.—Stawell's patient was 4½ months pregnant. Troublesome vomiting for two days, constipation and sharp abdominal pain led to operation. Subtotal hysterectomy was performed. On section the ordinary appearance of myoma was seen, no "red degeneration" being observed. The patient made an uninterrupted recovery.

Lancet, London

April 10, 1920, 1, No. 5041

*Abdominal Emergencies in Which Operative Interference is Either Contra-Indicated or Restricted. C. F. M. Saint.—p. 795.
Nose, Throat and Ear Disease Among Aviation Candidates. D. Ranken.—p. 800.
*Delayed Arsenical Poisoning. G. S. Strathy, C. H. V. Smith and B. Hannah.—p. 802.
*After-History of Five Hundred Consecutive Tuberculosis Dispensary Cases. F. G. Collins.—p. 807.
*Unusual Cases of Intestinal Obstruction. J. A. C. Forsyth.—p. 808.
*Combined Aortic and Mitral Regurgitation. W. Gordon.—p. 811.
Plating of Simple Fractures. F. D. Saner.—p. 812.
Extraction of a Sewing Needle from the Heart. Z. Cope.—p. 812.
A Dicephalous Monster. M. Z. Shafel.—p. 814.
A Case of Hypospadias Perinealis. S. Chelliah.—p. 814.
Experimental Medicine and Venereal Diseases. W. F. Snow.—p. 830.

Abdominal Emergencies.—Saint emphasizes that all surgical emergencies should be treated in a properly equipped hospital, and every patient with a more than ordinary abdominal illness should be sent to such a hospital at once for observation and, if necessary, operation.

Delayed Arsenical Poisoning Following Use of Arsphenamin.—Fifty-eight cases of delayed arsenical poisoning following the use of arsphenamin preparations are reported by Strathy and his associates. Eight of these were fatal, being the first of the series to come under observation. The remaining fifty patients made a slow but otherwise

satisfactory convalescence. The greatest number of doses of arsphenamin given in the fatal cases was eleven, the least four. The greatest amount administered, where it was possible to obtain records, was 6.95 gm., the least amount 2.2 gm. The average time of onset of symptoms after the last dose was forty-one days, the longest interval forty-eight days, the shortest eighteen days. The symptoms in every case were similar. The jaundice on onset was rapidly followed by nausea, epigastric pain, stupor, hematemesis, delirium and death. Four of the patients were wildly delirious. In all cases tested the urine contained bile, and in nearly all cases albumin as well. The blood picture was not characteristic. The hemoglobin and red cells were not much reduced. The leukocytes varied in number from 14,000 to 34,000 per cubic millimeter, and the polymorphonuclear leukocytes from 50 to 80 per cent. The greatest number of doses of arsphenamin given in the nonfatal cases was fourteen, the least two. The average time of onset of symptoms was forty-five days, the longest interval 180 days, the shortest three days. Thirty-nine of the patients were admitted for jaundice, eight for dermatitis, two for nephritis, and one for general debility. Jaundice followed dermatitis in one patient, and two other cases of dermatitis were followed by peripheral neuritis. Coated tongue, poor appetite, epigastric distress, abdominal distension, headache, general malaise, and loss of weight were noted throughout the group. Albuminuria was present in twenty-eight cases, bile salts in thirty-five cases, increased urobilin and urobilinogen in sixteen cases, leucin and tyrosin were never found. Jaundice was present in all of the fatal group and thirty-nine of the nonfatal group.

After-History of Tuberculosis Patients.—The points on which Collins lays emphasis are: That pulmonary tuberculosis may be cured if treated in its early stages. It is only the early case that derives any permanent benefit from sanatorium treatment (with rare exceptions); hence the futility of clogging the sanatoriums with the more advanced type of case. Much more strenuous preventive measures should be adopted—e. g., additional suitable open air schools and institutions for very advanced cases. There is a sad lack of suitable institutions for the tuberculous child.

Intestinal Obstruction.—The cases reported by Forsyth are: acute angulation at the hepatic flexure from pericolicitis; rupture of the teniae coli of the cecum; polyp of the ileum accompanied by chronic intussusception; acute intestinal obstruction from traction diverticulum of the ileum; strangulation of a loop of ileum by an adherent appendix epiploica of the sigmoid.

Combined Aortic and Mitral Regurgitation.—The most outstanding feature in Gordon's case was its duration—thirty years. Points to which attention is drawn are: the case was uncomplicatedly rheumatic, dating from a single attack of acute rheumatism at 22; the patient was otherwise healthy, with no lung or kidney complications, for the most part her work was free from physical strain; she successfully avoided further rheumatism; the degree of aortic regurgitation was probably slight for a good many years, since "water-hammer" pulse and pulsation in the neck were absent for that time (remembering, however, the influence of coincident mitral regurgitation in modifying the pulse); precordial pain, palpitation and dyspnea on exertion, with occasional faintness, were present almost throughout; so long as eleven years before her death the apex beat, in the erect position, was already in the sixth space, and 1 inch outside the left mammary line.

Medical Journal of Australia, Sydney

Feb. 28, 1920, 1, No. 3

*Iritis. F. A. Pockley.—p. 185.

Case of Neuromuscular Atrophy of Charcot-Marie-Tooth Type. A. Watkins.—p. 189.

Case of Supercute Pulmonary Edema. H. L. Kesteven.—p. 190.

Case of Purpura Hemorrhagica. E. A. Elliott.—p. 191.

Labor Complicated by Hydrocephalus. E. B. Moore.—p. 191.

Dental Infection as Cause of Iritis.—Pockley claims that in over thirty years' practice as chief of the ophthalmic department of the largest general hospital in Australia and a considerable private practice and, though of late years he has

been on the lookout for dental troubles and other focal infections as a cause, and has got advice and treatment in all doubtful cases from dentists and physicians, he has rarely, if ever; met with a case in which he could satisfy himself that the teeth were the cause of iritis. Excluding syphilitic, gonorrheal, tubercular, sympathetic and a few other cases of iritis, for which a probable cause or association can be found, his experience is that most, in fact nearly all the patients showed benefit or cure by the proper use of salicylates combined with appropriate local ocular treatment. Operation may, of course, be required in old standing or recurring cases.

March 6, 1920, 1, No. 10

Pathology of Influenza in France. S. W. Patterson.—p. 207.

Medical Education. E. A. Falkner.—p. 210.

Mastoid Disease with Cholesteatoma Complicated by a Cerebral Abscess. R. G. Brown.—p. 212.

Irreducible Intussusception in Children: Successful Resection, with Lateral Anastomosis. N. J. Dunlop.—p. 213.

March 13, 1920, 1, No. 11

Method of Suture. A. C. F. Halford.—p. 229.

Chronic Disease and its Association with Focal Sepsis. S. Pern.—p. 229.

Tuberculosis in Animals. J. B. Cleland.—p. 233.

*Case of Malignant (Carcinomatous) Pericarditis. J. B. Cleland and A. Palmer.—p. 233.

Case of Jugular Phlebitis, Sinus Thrombosis, Ulcerative Endocarditis. W. S. Laurie.—p. 234.

Cesarean, Section for Contraction Ring. G. A. Hagenauer.—p. 234.

Carcinomatous Pericarditis.—A man, aged 49 years, was found dead in bed. He had had a swelling behind the right angle of his jaw, which had caused him a good deal of pain, but for which he had not consulted any doctor. At the post-mortem examination, a hard swelling was noticed in the region of the right parotid gland. It was not further examined. The pericardial sac was distended, with a large quantity of bloodstained fluid, a chronic pericarditis being present. The left lung was adherent throughout. The gastric veins were prominent, the liver had the appearance of nutmeg and the kidneys showed advanced chronic interstitial nephritis. Death was attributed to chronic interstitial nephritis and chronic pericarditis. On macroscopic examination the surface of the heart showed a slight fibrous pericarditis, while in the neighborhood of the auricles were discrete, minute, nodular projections. On section, the pericardial surface of the heart showed here and there narrow, whitish, pencil-like thickenings. When microscopic sections were cut, Cleland and Palmer found among granulation tissue in places an extensive infiltration by deposits of carcinoma cells in a reticulum.

March 20, 1920, 1, No. 12

*Toxemia in Epilepsy. P. Lalor and G. Haddow.—p. 251.

Treatment of Chorea. G. H. Burnell.—p. 260.

Hospital Standardization.—p. 263.

March 27, 1920, 1, No. 13

Educational Number.

Relation Between Brain and Liver in Epilepsy.—The records of postmortem examinations of twenty-five cases of epilepsy, as far as the liver, etc., is concerned are given by Lalor and Haddow. The summary of their observations is that the brain-liver ratio is 35:33. The normal ratio was brain to liver, 12:15, so that the conditions are entirely reversed in the epileptic condition. The percentage in which the weights of the brain exceed those of the liver was 80 in the twenty-five cases examined. In 24 per cent. of cases status epilepticus was found and associated with this condition was toughness and congestion, indicating previous chronic irritation and present acute inflammation in 30 per cent. of these cases. There were signs of disease of the gallbladder and possibly of chronic intoxication from this source. In 8 per cent. of cases the mesenteric glands were enlarged, indicating some chronic intestinal toxemia of fairly long duration. In 20 per cent. of cases there was definite trouble in the gallbladder tract. In 40 per cent. of cases there was evidence of chronic hepatic irritation, indicative of a continuous and slow toxin, displayed by fibrosis or toxic or fatty changes. In 8 per cent. of cases there is distinct evidence of a chronic intestinal intoxication, which might in all probability be obviated by treatment.

Bulletin de l'Académie de Médecine, Paris

Feb. 24, 1920, 83, No. 8

- *Experimental Hematology. Normet.—p. 163.
- *Quadruple Birth. Pinard.—p. 169.
- *Hammer Percussion Locates Painful Points. G. Hayem.—p. 173.
- *Sulphur in Cancerous Liver. A. Robin.—p. 178.
- The Reflexes in Epidemic Encephalitis. G. Guillaumin.—p. 197.
- First Case of Contagion of Oriental Sore in France. P. Ravaut.—p. 198.

Experimental Hematology.—Normet reports experiments on rabbits and guinea-pigs after injection of sodium citrate; this allows the study of the blood to be continued in vitro. His illustrations demonstrate, he asserts, the course of the evolution of the blood corpuscle, the mononuclear leukocyte being capable of producing directly or indirectly, as he explains, the eosinophils and the erythrocytes. He regards it as the generator of all the blood cells. The budding or gemmation which he describes as the origin of the hemato-blasts, shows a process of cell reproduction which was not suspected in metazoa, and which he is now studying in other tissues besides the blood.

Quadruple Birth.—The woman had borne six normal children when in 1915 she gave birth to two boys and two girls at one time, and all are in good health to date. There was no history of twins in either family before.

Percussion Locates Painful Points in the Abdomen.—Hayem strikes with the middle finger, like a hammer, and has found that this locates the tender points with greater precision than mere pressure alone. Lately he has been using special hammers, with a spring, for the purpose. This hammer technic may reveal points of tenderness which escape detection by ordinary palpation and pressure. The pain elicited is usually visceral, and with dyspepsia, it is generally in the liver. With chronic stomach disease, aside from ulcer and cancer, this *martelage* often elicits pain in the liver and intestine.

Sulphur in the Cancerous Liver.—Robin concludes from his long study of sulphur metabolism in malignant disease that there must be some special proteolytic ferment in the organ or part of the organ in which cancer develops which prepares the soil for the malignant disease. Research in this line may throw light on chemotherapy of cancer. The sulphur content was much below normal in the cancer regions in five cancerous livers examined.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 6, 1920, 44, No. 5

- *Acute Encephalitis in Children. J. Comby.—p. 161.
- *Neurofibromatosis with Suprarenal Insufficiency. A. Chauffard and P. Brodin.—p. 166.
- *Malaria Masquerading as Paroxysmal Tetany. P. Hébert and M. Bloch.—p. 169.
- *Azotemia with Pulsus Alternans. C. Esmein and J. Heitz.—p. 173.
- *Epidemic Encephalitis. Harvier and others.—p. 179.
- Gangrenous Process in Lung; Recovery under Antigangrene Sero-therapy. H. Dufour and others.—p. 190.

Acute Encephalitis in Children.—Comby warns that acute encephalitis is frequent in children but is usually mistaken for tuberculous meningitis until lumbar puncture shows the absence of lymphocytosis. In his twenty-five cases published in 1907 the lethargic type was manifest in about a third of the cases. The encephalitis developed secondary to influenza, whooping cough, vaccination, enteritis or gas poisoning in the majority, but in some the disease seemed to be primary. Some of the children died and some recovered completely, but others were left with grave sequelae.

Neurofibromatosis.—Chauffard and Brodin report a case which apparently confirms the connection between Recklinghausen's disease and the suprarenals. Suprarenal treatment was followed by immediate and notable improvement, as in Pic's and Jullien's two cases.

Malarial Attacks Masquerading as Tetany.—Hébert and Bloch report a case in which attacks of tetany every second day were finally explained by finding *Plasmodium vivax* in the blood. With tetany from any cause, they suggest that it might be well to examine for parasites. The attacks in this case resembled the hemoclastic crises from chilling to which Vidal and others have called attention in paroxysmal hemoglobinuria.

Azotemia with Pulsus Alternans.—Esmein and Heitz tabulate the details of twenty-five cases of pulsus alternans showing the high urea content of the blood; it ranged from 0.43 to 1.66 gm. per liter. After the intake of meat was restricted, marked improvement followed. These experiences testify to the importance of putting patients with pulsus alternans on a nitrogen-poor diet in addition to heart tonics and diuretics. The subject is timely, they add, as pulsus alternans seems to be increasing in frequency; forty cases have been encountered by them in the last few years. The possibility of syphilis as a causal factor must not be forgotten. In the discussion that followed, Josué suggested that the azotemia in these cases may have been merely relative, depending on oliguria. The alternating pulse is a sign of weakness of the heart, and this in turn may entail oliguria and secondary azotemia even when the kidneys are sound. Heart tonics may transform the whole clinical picture.

Epidemic Encephalitis.—Netter estimates at 500 the recent cases of lethargic encephalitis at Paris. Other speakers commented on the variety of forms the disease is now assuming, even walking cases. Labbé and Hutinel report a case with lymphocytosis and excessive amounts of glucose in the lumbar puncture fluid. Others report series of cases with delirium and hallucinations. Morax and others discuss the ocular symptoms, and Weil describes a case with symptoms indicating involvement of the spinal cord.

Lyon Médical

April 10, 1920, 129, No. 7

- *Tuberculous Rheumatism. L. Duvernay.—p. 298.

Tuberculous Rheumatism.—Duvernay states that while the existence of tuberculous rheumatism is quite generally recognized, there are many erroneous ideas afloat in regard to the nature of the disease and with respect to its treatment. Many seem to think of tuberculous rheumatism as an articular localization of the Koch bacillus, which Duvernay says is not only still unproved but seems to be in contradiction with almost all the facts. It should therefore be emphasized that tuberculous rheumatism (or inflammatory tuberculosis) presents just ordinary lesions, and that there are no evidences of classic tuberculosis. He regards tuberculous rheumatism as not so much a toxic rheumatism as an antitoxic or reactional rheumatism. It seldom appears when the toxic substances are abundant. The tuberculous rheumatic is one who has recovered from tuberculosis, whose organism is defending itself, and in whom the antibodies are very active and very abundant. Since tuberculous rheumatism is not a local tuberculosis but a rheumatism, it should be treated like other forms of rheumatism: warmth, immobilization during the acute stages but mobilization and massage as early as possible to avoid atrophy and ankylosis.

Presse Médicale, Paris

Feb. 25, 1920, 28, No. 16

- *Angina Pectoris. A. Martinet.—p. 153.
- *Bismuth Poisoning. C. D. Constantinescu and A. Jonescu.—p. 155.
- Ocular Ataxia in Tabes. A. Cantonnet.—p. 156.

Angina Pectoris.—Martinet seeks for and applies treatment for the anatomic elements responsible in aorta, coronaries and myocardium; for the pathologic physiology in the nerves around the aorta, ischemia in the myocardium, and cardiac insufficiency; for the etiologic elements, syphilis, gout, rheumatism, arteriosclerosis, obesity or neuropathies, and, finally, for the provocative elements, such as overexertion, emotional stress, excesses, meteorism or aerophagia. During a severe attack he injects atropin and morphin in one thigh and camphorated oil in the other, and wraps the chest in a compress wrung out of mustard water, 2 handfuls of mustard in 2 liters of very hot water; covers with oiled silk and keeps it on until the skin is bright red (usually from fifteen to thirty minutes); or the arms can be held in very hot water; when there is danger of acute edema of the lung, blood-letting at the elbow. Besides these and other measures described, he lays great stress on tranquilizing the patient. The anguish and fear maintain or start further spasms of the vessels,

and one of the main points in treatment is to reassure the patient, telling him that the gravity of angina pectoris has been much exaggerated, and that many persons subject to it long survive, with ordinary care. When aerophagia is a prominent element, it is easy to convince the patient that the disturbances are not induced or aggravated by muscular exertion, as a rule. A stimulant might be prescribed, to be carried habitually, a few swallows to be taken when symptoms suggest an impending attack. He usually orders for this "gri-gri," as he calls it, a little ammonium acetate in brandy and syrup.

Severe Bismuth Poisoning.—The bismuth had been given in the case reported for roentgen examination with supposed gastric ulcer. The blood showed nitrites but no trace of bismuth, and the symptoms and spectrum indicated that the oxyhemoglobin had been transformed into reduced hemoglobin and what he calls oxy-azotic hemoglobin.

Annali d'Igiene, Rome

December, 1919, **29**, No. 12

*Pathogenesis of Cholera. G. Sanarelli.—p. 797.

*Sterilization of Drinking Water. D. De Blasi.—p. 842.

Agglutinins for Proteus X in the Serum of Typhus Patients. Levi Della Vida.—p. 847.

Pathogenesis of Cholera.—In this first of a series of articles on this subject Sanarelli describes research on animals to study the natural defences of the peritoneum against the cholera vibrios.

Sterilization of Drinking Water.—Among the chemicals investigated by De Blasi he found silver fluorid most effectual, but it required a comparatively strong solution and contact of an hour to completely sterilize the water. The water is rendered limpid afterward by addition of sodium thiosulphate. Cattle and horses drink water containing up to 1:10,000 of the silver fluorid (*tachiolo*) without reluctance or apparent harm, he adds. His research with sodium hypochlorite and certain other chemicals merely confirms what others have published.

Policlinico, Rome

March 1, 1920, **27**, No. 3

Normal Serum in Treatment of Puerperal Infections. O. Cignozzi.—p. 259.

Verbal Blindness from Skull Wound. E. Fossataro.—p. 261.

Epidemic Encephalitis. G. Pansera.—p. 263.

Specific Color Reaction in Urine in Acute Peritonitis. O. Sgambati.—p. 267.

March 15, 1920, **27**, No. 11

*Medical Treatment of Dysenteric Liver Abscess. L. Manini.—p. 323.

Organic and Functional Anesthesia. G. Dragotti.—p. 327.

Donato Rossetti, 1667, a Pioneer in the Study of the Senses. G. Bilancioni.—p. 338.

Medical Treatment of Dysenteric Liver Abscess.—The symptoms indicated amebic dysentery of several months' standing but no amebas could be cultivated from the stools nor from the thick, chocolate colored fluid obtained by simple puncture of the enlarged right lobe of the liver through the sixth interspace on the axillary line. The liver was not tender and the spleen was not enlarged. Under a vigorous course of subcutaneous injections of emetin, the fever and other symptoms promptly subsided to complete clinical recovery, confirming the presumptive diagnosis, and establishing anew the efficacy of medical treatment alone with amebic liver abscess.

March 22, 1920, **27**, No. 12

*Spasm of Walls of Arteries. E. Morelli.—p. 355.

Vaginal Enucleation of Submucosa Uterine Fibroma. C. R. Belgrano.—p. 358.

Arterial Spasm with Hypertension.—Morelli emphasizes that in estimating the arterial blood pressure it is necessary to take into account the sphygmogram as well as measure the systolic and diastolic pressure. Forlanini regarded essential arteriospasm as a morbid entity, the abnormal irritability of the muscular walls of the arteries an expression of pathologic conditions apart from arteriosclerosis. The sphygmogram may vary widely in persons whose blood pressure measurements show the same figures. De Giovanni noted that after palpation of the radial artery the area

palpated remained contracted for a time, testifying to the excitability of the artery walls. Zoja has also called attention to the changes in the sphygmogram when the nerves in the arm above are irritated by stroking them across. Their tests were made on persons with normal blood pressure, but Morelli found the response even more pronounced with high pressure. The spasmodic contraction may be in the medium sized arteries or in the terminal arterioles, or in both. The effect is much like that of arteriosclerosis; the contracted artery may feel as hard and rigid as with sclerosis, but differentiation is extremely important as the treatment for one may be injurious in the other. When the medium arteries alone are contracted, the arterioles below and the circulation suffer, and the arterial pressure from extremely high during systole drops to extremely low during diastole. With this tendency to spasm of the arteries, the tonus of the arteries may respond more rapidly and intensely to stimuli of different kinds than has as yet been demonstrated with normal arteries. The spasm may be total or segmentary, and the type may differ as it occurs during systole or diastole, the increase in the diastolic tonus of the artery preventing the stretching of the artery during the diastole. The combination of spasm of the arteriole with spasm of the larger artery throws much extra work on the heart and essentially disturbs the circulation.

Riforma Medica, Naples

Dec. 20, 1919, **35**, No. 51

*Motor Plastic Operations: Cinematization. A. Pellegrini.—p. 1113.

*Pleuritis with Liver Disease. A. Furno.—p. 1122.

Motor Plastic Operations.—Pellegrini here presents the report for 1918 and 1919 of what has been accomplished in Italy in the line of cinematization, cineplastics and cineprosthetic appliances. Among the twenty-one illustrations some show the technic and results of a tunnel made in the place where the shoulder had been enucleated. This tunnel allows a grasp of an instrument and motor control to a certain extent, backed by the strength of the shoulder muscles. The Zerlini artificial hand can be used both with simple motor loops of muscles and alternating loops. Some of the illustrations show a man after amputation of the arm writing with this Zerlini hand, or pouring from a bottle, or holding up a cane-seated chair. The principles and construction of this artificial hand are described and its simplicity emphasized.

Metahepatic Pleurisy.—Furno explains that four fifths of the lymphatics which originate in the liver pass into the pleural cavity above, and line the parietal and visceral sheets of the pleura. These lymphatics are the only ones that enter the pleura from the abdominal cavity, and this readily explains why pleuritis with or without effusion is often an important aid in the diagnosis of liver disease. In none of the other viscera are pathologic conditions accompanied by pleuritis in this way. He relates some cases in which the febrile pleuritis was treated on a mistaken basis for about two years before the causal liver disease was suspected. This mistake is particularly disastrous when the liver disease is of syphilitic origin. Irreparable lesions may become installed as the years pass without proper treatment while attention is focused exclusively on the pleura. Furno knows of six cases at least in which the patients had been sent to a sanatorium for treatment of the supposed tuberculosis. In other cases, operations for gallstones had been done, but on suspicion of a syphilitic origin all recovered promptly under mercury. Pleuritis with chills, fever and night sweats should suggest the liver first of all. The liver is often silent in its pathology, he says, or symptoms from it simulate those from other viscera; right pleuritis may be the first thing to give the clue.

Feb. 21, 1920, **36**, No. 8

Epidemic Encephalitis. A. Chaffard.—p. 197. A. Abbruzzetti.—p. 203. G. Onano.—p. 204.

*Constitutional Anomalies and Syringomyelia. A. Finzi.—p. 199.

*Chilling of the Skin in Relation to Disease of the Respiratory Apparatus. G. Galeotti.—p. 205.

Constitutional Anomalies in Relation to Syringomyelia.—Finzi recalls some cases on record in which four of the five

children in a family or the mother and three children all presented syringomyelia, and states that the twenty-one patients with syringomyelia he has recently examined all presented an unusual number of malformations or other constitutional anomalies. They are so frequent and so universal that a casual coincidence can be excluded. An inherited neuropathic taint is particularly common, and any organ is liable to display the congenital anomalies.

Chilling of the Skin in Relation to Disease of the Respiratory Apparatus.—Galeotti reviews the conflicting theoretical testimony in this line in contrast to the empiric certainty of the pathogenic action on the air passages of chilling of the body. He then describes research by himself, Azzi, Viale and others which demonstrated that the temperature of the expired air does not correspond to the blood temperature, but to the temperature of the skin at the moment. It was found that when the vessels in the skin had become constricted under the influence of cold, the expired air was proportionately cooler, and it grew warmer as the vessels in the skin dilated under the influence of warmth. Their findings can mean only that there is a close nervous connection between the vessels in the skin and the vessels in the air passages. As one system contracts, those in the other contract instantaneously with them, and they dilate in the same way. The temperature of the air in the lungs is determined by the blood in the vessels, and if these vessels contract, the expired air is cooler than when the vessels are dilated. Sudden vasoconstriction in the lungs may favor infection from saprophytes by checking phagocytosis or by the altered metabolism or by the paralytic dilatation which follows the vasoconstriction. The hyperemia in the vessels of the air passages which accompanies hyperemia, from revulsion to the skin, in the vessels of the skin, explains, he says, the benefit from revulsion and fomentations applied to the chest, while the reverse mechanism explains the benefit from ice applied to the skin in arresting hemoptysis. He explains in conclusion that this behavior of the vessels in the air passages seems to be an atavistic functional relic of the primitive thermo-regulating mechanism, analogous to what is observed in dogs.

Deutsches Archiv für klinische Medizin, Leipzig

Sept. 26, 1919, 130, No. 3-4

- Pituitary Tumors. V. Reichmann.—p. 133.
Scurvy. R. Bierich.—p. 151.
Resisting Power of Erythrocytes. J. Bauer and B. Aschner.—p. 172.
Osteo-Arthropathy (Marie). V. Hoffmann.—p. 201.
Heart Action During Sleep. F. Klewitz.—p. 212.
Test Pressure on the Vagus. Margarete Kleemann.—p. 221.
Influence of Great Cardiac Nerve on Shape of the Electrocardiogram in Case of Paroxysmal Tachycardia. Boden.—p. 249.
Pigment Cells in Kidneys and in Urine. J. Weicksel.—p. 260.
Twenty-Four Years of Diphtheria at Bonn. J. L. Noest.—p. 270.

Pituitary Tumors with Unusual Clinical Picture.—Reichmann reports two cases in which the symptoms had suggested exophthalmic goiter, tendency to acromegaly, suprarenal disease, and disease of the genital glands, but necropsy revealed in the woman of 36 an eosinophil adenoma in the pituitary, and in the man of 51 the roentgen findings seem to indicate a similar tumor. The face was red and puffy in both; the exophthalmos was pronounced but the thyroid was not enlarged, and the pulse was slow, with extreme weakness of muscles, emaciation, edema of the legs, slight glycosuria, no albuminuria, and no signs of contracted kidney, but the blood pressure was very high, and there was pronounced osteoporosis of the spine. The symptoms thus indicated excessive functioning of the pituitary and suprarenals, with thyroid deficiency. The curvature of the spine from the osteoporosis was evidently responsible for the severe neuralgiform pains in the back in the woman's case. Tests for epinephrin in her blood were negative, but the blood pressure of 200 mm. mercury pointed to the suprarenals, and as the pains in the back were unbearable, Reichmann yielded to the patient's demand for operative relief, and removed the left suprarenal. The woman died nine days later from peritonitis, nearly three years from the first onset of symptoms, which had been edema of the legs, exophthalmos and arrest of menstruation. The latter had never been constantly regular.

Scurvy.—Bierich as chief of the Russian Red Cross central scurvy station was able to compile data in regard to 1,343 cases with necropsy findings in six cases. He says that before the outbreak of the revolution in Russia, fully 98 per cent. of the scurvy patients were promptly cured by the usual antiscorbutic diet, but after the onset of the revolution only from 20 to 30 per cent. could be cured although the men's food was much better. There were whole divisions of troops in which 75 per cent. developed scurvy. These and other facts observed testify, he says, that the endogenous factors in the disease are racial and mental; the exogenous are the deficient diet. The injury seems to affect primarily the endothelium of the capillaries, the normal structure of which is reversibly injured by the lack of some nitrogen-containing building-stone indispensable for its specific function. The insufficiency of the blood-producing organs seems to be secondary to this structural damage to the capillaries. Treatment in many of his cases had to include psychotherapy, transfusion of citrated blood and splints, in addition to the usual dietetic measures.

The Range of Resisting Power of the Erythrocytes.—Bauer and Aschner recall that sometimes the concentration of the substance causing the first sign of laking may be very close to the concentration causing total hemolysis. In other cases there may be a wide range between them. This "resistance range" is the expression of the biologic difference between erythrocytes which from other standpoints seem to be identical in every respect. They found the widest range in severe anemia, especially the anemia with chronic Bright's disease; the smallest range was in tuberculosis with a mild course, and injections of tuberculin seemed to increase the resisting power of the erythrocytes. They tested with solutions of sodium chlorid ranging from 0.6 per cent. to 0.3 per cent., drawing the blood first into a solution of 0.28 parts potassium oxalate and 0.8 parts sodium chlorid in 100 parts distilled water and centrifuging, then making the suspension of the erythrocytes in 0.9 per cent. sodium chlorid solution. The set of test tubes was compared with a colorimeter scale (hemoglobin solution). The younger erythrocytes were the more resistant. The resistance range varied in the same person at different times in their tests of 100 persons. The findings are tabulated and a theoretical explanation tentatively advanced.

Hypertrophic Pulmonary Osteo-Arthropathy.—In Hoffmann's first case the woman of 40 developed drumstick fingers and thickening of the periosteum of different bones about six months after the clinical cure of uterine cancer under mesothorium treatment. A year after the development of the typical *ostéarthropathie hypertrophique pneumique*, pains and ataxia in the legs testified to neuritis. Shadows in the lungs seem to be metastases of the cancer, but they have not progressed during the year the woman has been under observation. In a second case, in a man of 30, the osteo-arthropathy was secondary to bronchiectasia with foci of gangrene. No instance of primary osteo-arthropathy of this Marie type has yet come to necropsy, to Hoffmann's knowledge. He remarks that the relations between the primary form and the secondary toxigenous form are not at all certain.

The Heart Action During Sleep.—Klewitz has been taking electrocardiograms of twenty-five persons during sleep, including a number of healthy subjects, eight with well compensated valvular disease, three with failing compensation and two with tachycardia or bradycardia after influenza. The electrocardiogram in sleep often differed materially from the electrocardiogram of the same subject awake. In the healthy, the heart cycle was lengthened, sometimes up to one tenth. The ventricle systole was prolonged more in proportion than the auricle systole. The differences in heart action during sleep are advantageous for the circulation as a whole. With the different forms of heart disease no regularity in the sleep changes could be detected. In the one case of bradycardia the heart cycle was shortened.

Test Pressure on the Vagus.—Kleemann applied to 127 patients Czermak's test pressure on the vagus, and the response was studied with electrocardiography. In 80 of

150 tests of the right vagus no effect was apparent, as also in 90 of 149 tests of the left vagus. As a rule, pronounced modification from the pressure was evident only in cases of heart disease, but the intensity of the response was not proportional to the severity of the latter, and a positive response did not always occur with heart disease. The findings were interesting with partial heart block, namely, its aggravation, and the development of a regular auricle-ventricle rhythm while the rate of sinus conduction was reduced.

Deutsche medizinische Wochenschrift, Berlin

Dec. 25, 1919, 45, No. 52

- Observations on Heart Function and the Effect of Digitalis. S. Loewe.—p. 1433.
Orthopedic Therapy in Foot Deformities with Neural, Progressive Muscular Atrophy. H. Debrunner.—p. 1437.
The Friedmann Tuberculosis Remedy in Tuberculous Bone and Joint Lesions. J. Elsner.—p. 1438. Conc'n.
My Experiences with Silver Salvarsan. Levy-Lenz.—p. 1440.
Protective Sleeve for Obstetrical Use. K. Meyer.—p. 1441.
Reasons Why the Eight Hour Law Is Not Applicable to Hospitals. E. Unger.—p. 1441.
The Place of Philosophy in the Study of Medicine. B. Jung.—p. 1442.

March 18, 1920, 46, No. 12

- *Surgical Treatment of Nephritis. H. Kümmell.—p. 313. Conc'n.
*Antityphoid Vaccination of Civilian Population. J. Basten.—p. 316.
Effect of Food Restrictions on Mortality. M. Hindhede.—p. 318; Reply. Rubner.—p. 320.
Gastric Antiperistalsis. O. Strauss.—p. 321.
*Medicolegal Significance of Vagus Pressure Experiment. Von Teubern.—p. 322.
*Splenic Anemia in Young Children. Aschenheim.—p. 323.
*Treatment of Prolapse of Rectum in Children. P. G. Plenz.—p. 324.
Diphtheria of the Umbilicus in the Newborn. F. Göppert.—p. 324.
Dermatologic Hints for Practitioners. M. Joseph.—p. 325. Conc'n.
Questionnaire on Treatment in Influenza. J. Schwalbe.—p. 326.

Results of Surgical Treatment of Nephritis Under War and Peace Conditions.—Kümmell holds that acute nephritis with abscesses should be treated by means of nephrotomy or decapsulation as soon as the diagnosis has been definitely made, as he has found the results very favorable. The form of chronic nephritis whose predominant symptom is pain in the kidney (mostly unilateral), nephritis dolorosa, is favorably influenced by decapsulation, and the patients remain free from symptoms, able to work and to all appearances perfectly well. In the case of unilateral partial nephritis, if internal treatment fails to give relief, operative intervention should not be postponed too long, lest the diseased area should increase or the other kidney should become involved. Chronic hemorrhagic nephritis, whose predominant symptom is hemorrhage, more or less profuse, usually unilateral, and which often simulates the presence of tumors, reacts most favorably to decapsulation. The hemorrhages almost always cease and seldom reappear. The patients remain free from symptoms for long periods and are able to work.

Compulsory Antityphoid Vaccination of Civilian Population.—Basten has investigated the results of the extensive vaccination of civilians against typhoid undertaken by the British army in December, 1918, during the occupation of German territory. Civilians between the ages of 6 and 45 were compelled in certain districts during a typhoid epidemic to accept vaccination unless there were certain contraindications, such as advanced pregnancy, recent childbirth, advanced tuberculosis, etc. Basten draws these conclusions from his investigations: 1. The vaccination was accomplished without any injury to the health of any age group. 2. No unfavorable influence on pregnancy or on lactation in nursing mothers could be noted. 3. The English vaccine, which contained also paratyphoid A and B strains, did not cause more severe reactions than the German vaccine which contained only typhoid strains. 4. The vaccination checked successfully many cases of typhoid that were in the incubation stage and thus rid the population of the infection. 5. No influence from the vaccination on the typhoid morbidity percentage among the vaccinated as compared with the unvaccinated, during the following six months, could be noted, but the vaccination attenuated the disease in the typhoid patients who were vaccinated. Conclusion 5 would

seem to indicate that two injections as given are not sufficient to immunize against the disease, and that three injections are necessary. The experience of the German army has been that three injections are required to establish immunity.

The Medicolegal Significance of the Vagus Pressure Experiment.—Von Teubern states that the Czermak vagus pressure experiment has a certain medicolegal value as it lends support to the view that in persons with a strongly positive vagus response a more or less intensive compression of the throat for even a short space of time, as in choking, attempts to strangle, etc., might be alone sufficient to produce immediate arrest of the heart action.

Splenic Anemia in Young Children.—Aschenheim opposes the tendency to regard splenic anemia as belonging to a subordinate group of the ordinary anemias in infants and young children, and defends the view that it is a clearly defined disease, characterized by a very large spleen, a yellow color of the skin, swelling of the liver, and frequent edemas and hemorrhages.

Treatment of Prolapse of the Rectum in Children.—Plenz opposes the use of the subcutaneous wire ring as recommended by Thiersch in the treatment of prolapse of the rectum in children. It produces severe pain during later defecation and, acting as a foreign body, it leads almost invariably to suppuration and the formation of abscesses. He expresses surprise that since Kirschner called attention to the excellent results obtainable with fascia, so little use has been made of the suggestion. Plenz has used the fascia method in place of the wire ring in six cases, and has been well pleased with the results.

Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1919, 151, No. 5-6

- *Autovaccines Against Pyogenic Infection. Lāwen and Hesse.—p. 289.
*Wax and Paraffin to Plug Cavities in Bones. O. Wassertrüding.—p. 319.
*Arteriovenous Aneurysms. M. zur Verth.—p. 333.
Movements of Knee with Injury of Anterior Crucial Ligament. M. Budde.—p. 343.
*Intravenous Infusion by the Drop Method. M. Friedemann.—p. 352.
*High Sacral Anesthesia. D. Schuster.—p. 393.
Congenital Lumbosacral Scoliosis. M. Budde.—p. 417.

Preventive Vaccination Against Infection.—The experience was with war wounds, but the number of cases (twenty) is too small for definite conclusions. In three of the men the wound became infected. There was no temperature or pulse reaction to the injection of the autovaccine.

Plugging Cavities in Bones.—Roentgenograms are given of seven cases—all war wounds—in which the injected wax or hard paraffin seemed to stimulate the tissues to repair. The foreign substance was expelled as the cavity healed up behind it. In only one of the cases was healing by primary intention realized; the others were suppurating, but they began to expel the foreign substance by the third or fourth week, and the large defect gradually healed up completely, with very little impairment of function. To hasten the healing, in some of the cases the displaced wax was removed.

Arteriovenous Aneurysm.—Zur Verth presents evidence to show the serious damage to the general circulation, liable to result from an arteriovenous aneurysm of large vessels. The heart enlarges and may show signs of weakness, while both heart and vessels are more susceptible to reflex influences.

Intravenous Infusion by the Drop Method.—Friedemann has been applying this method of infusion for seven years, and his experience in several hundreds of cases has proved extremely satisfactory, he says. As the action of epinephrin is fleeting, this continuous drop method is particularly advantageous on this account. He generally uses a 0.9 per cent. solution of sodium chlorid or Ringer's solution, adding epinephrin, glucose or digitalis as may be indicated. A sign that the patient is beginning to get too much fluid is an increased lacrimal secretion or slight edema of the eyelids. On account of the danger of hypostatic pneumonia, he is careful not to infuse too much fluid when there seems to be a predisposition to this. He has never had any case of

embolism with this drop infusion. With menacing hemorrhage, the drop method replaces the losses of blood without abruptly raising the blood pressure. A further special advantage is with exhaustion of all kinds, dehydration of tissues, and as a preliminary to operations on the enfeebled. Since he has been relying on drop infusion he has much widened the limits of operability, patients coming to the table with a fine pulse when other surgeons had declined to operate on account of the weakness and almost imperceptible pulse before. In severe general infections, the combination of drop infusion with venesection has rendered valuable service, as also drop infusion with camphor or epinephrin, with or without venesection, in collapse in pneumonia. He cites typical instances of all these conditions to illustrate the benefit from the drop infusion, as also in the severe headache after intraspinal anesthesia, and in two patients moribund from kidney disease. His extensive bibliography on infusion is all from German writers.

High Sacral Anesthesia.—Schuster analyzes the experiences in 483 cases in which epidural injection of an anesthetic had been applied for major operations of various kinds. The anesthesia was complete in 85.5 per cent. and only 6 per cent. proved refractory. Adding the 155 cases previously published, this gives successful anesthesia in 85.7 per cent. of the total 638 cases. He says that there do not seem to be any absolute contraindications, but particular caution is necessary with severe atherosclerosis, on account of the necessity for raising the pelvis. The special indications for the high sacral or epidural technic are major operations in which inhalation anesthesia is contraindicated and local anesthesia is not practicable. It is applicable for all operations, he says, from the toes to the xiphoid appendix up to the age of 18, and occasionally up to 12 or 13 with 30 c.c. of procain solution. His tabulation includes twenty-three cases of resection of the stomach for cancer; sixteen of cholecystectomy; four of nephrectomy; eight of amputation of the rectum for cancer; one of amputation of the femur, and eleven of resection of the cancerous intestine. The few refractory cases were mostly in the operations on the stomach, intestines or kidneys. There was serious collapse in three extremely feeble patients; one was subject to apoplectiform attacks, which should have warned not to lower the head. The epidural technic in itself was not responsible for the fatality but the lowering of the head entailed fatal cerebral hemorrhage. The two other patients required artificial respiration during the collapse from the epidural injection, done in one case for prostatectomy. The man recovered but succumbed in less than two weeks to his uremia. The other patient had suppurative peritonitis from appendicitis; conditions were so grave that anesthesia of any kind was dangerous. He was brought out of the severe collapse by intravenous infusion of saline plus epinephrin and pituitary, while the measures for artificial respiration were continued. The man died ten hours after conclusion of the operation.

Medizinische Klinik, Berlin

Feb. 15, 1920, 16, No. 7

- Renal Hemorrhages. L. Casper.—p. 169.
Surgical Treatment of Duodenal Ulcer. E. Heymann.—p. 172.
Boeck's Sarcoid. G. Stümpke.—p. 178.
Petechial Exanthem with Pneumococcus Meningitis. F. Hirsch.—p. 181.
Fatal Case of Gas Phlegmon After Caffein Injection. F. Schranz.—p. 182.
Serologic and Neurologic Early Diagnosis of Syphilis. F. Kobrak.—p. 183.
Leukemia and Pernicious Anemia in East Prussia. S. Silbermann.—p. 183.
Micturition in the Newborn and Young Children. A. Adler.—p. 185.

Surgical Treatment of Duodenal Ulcer.—Heymann states that the surgeon will sometimes make a wrong diagnosis of duodenal ulcer, and on opening the abdominal cavity will not only not find the definitely expected ulcer but not even any pathologic changes characteristic of an ulcer. If no adhesions or thickening of the duodenal wall, nor scars on the serosa are found, he opens the anterior wall of not only the horizontal portion of the duodenum, where the ulcer is usually found, but also of the descending portion where it might possibly be located. The ascending portion is left

untouched as no ulcers have been reported as yet in this part. The mucosa is carefully inspected and palpated, and occasionally he introduces a short rectoscope in the peripheral end of the duodenum. If no ulceration is discovered he does not think that a palliative operation such as gastro-enterostomy or Eiselsberg's exclusion of the pylorus, much less resection of the antrum, is indicated, but rather regards the laparotomy as an explorative measure, and merely sutures the duodenum and abdomen. Remarkable benefit may follow the mere exploratory laparotomy. There may, however, be occasions when the removal of the gallbladder or appendix is indicated.

Multiple Benign Sarcoid.—Because of its rarity Stümpke reports a second case of this disease, having reported his first case in 1913. Boeck's sarcoid belongs to the exanthematous forms of tuberculosis of the skin, and was first described by Boeck in 1899. This disease occupies a peculiar position not only on account of its clinical form but also because the methods used to prove its tuberculous nature are so frequently unavailing. That the microscopic picture of Boeck's sarcoid is not absolutely characteristic for the affection, as was asserted by Boeck, has been shown by Lewandowski and others: similar changes occur in other tuberculids, as erythema induratum; also in lupus. The sharply circumscribed foci of epithelioid cells are not found exclusively in Boeck's sarcoid. As regards treatment, we are well nigh powerless. In Stümpke's first case, reported in 1913, he had used tuberculin treatment, whereupon an exacerbation of the lung condition ensued, which resulted in the patient's death. He therefore advises caution in dealing with Boeck's sarcoid, as with all tuberculids. His second case is in a woman of 35, who has been suffering for thirteen years from a stubborn type. The lesions are found mainly on the right and (more recently) on the left cheek, and on the left upper arm. The lymph glands are not involved. All the therapeutic methods tried so far have proved unsuccessful.

Petechial Eruption in Pneumococcus Meningitis.—Hirsch has been unable to find in the literature the description of a single case of petechial exanthem in pneumococcus meningitis, but reports a case in a man of 78. The diagnostic value of hemorrhagic exanthems in connection with the diagnosis of obscure cases of meningitis was learned during the war. Meningitis often appeared in such an atypical form, without the classical symptoms, so that in many cases a definite diagnosis was possible only at necropsy. Many physicians did not know how to interpret the exanthems that were present, and thus, owing to the absence of typical symptoms of epidemic meningitis, they were led to the false diagnosis of typhus fever. In nonepidemic meningitis, exanthems are rare. In Hirsch's case the exanthem was entirely different from those occurring in meningococcus meningitis. It was evidently a toxic eruption, and he is dubious whether it was due to the meningitis, which was in the foreground of the clinical picture, or whether it should be laid to the account of the pneumonia.

Fatal Cases of Gas Phlegmon After Caffein Injection.—Schranz adds one more to the growing list of cases in which, following injections of caffein or camphor, a fulminating gas phlegmon developed at the site of the injection and resulted fatally. His case was in a professional nurse of 21. Oct. 21, 1918, she was taken with influenzal pneumonia. The temperature ranged between 38.5 and 39.9 C. (101.3 and 103.8 F.). Owing to the weak heart action she was receiving camphor injections hourly and caffein every four hours. October 25, at 3 p. m., she received (with the same syringe and the same solution as usual) an injection of caffein on the extensor aspect of the left thigh. Half an hour later severe pain set in at the site of the injection. There was a small hemorrhagic spot surrounded by a reddish ring the size of a quarter, painful to the touch. Compresses and immobilization of the limb did not quiet the patient. The pain abated somewhat but did not stop. At 9 p. m. the patient voided about 50 c.c. of urine of a peculiar color, dark brown, with a greenish tinge. It contained albumin and traces of blood. By 10 p. m. the whole thigh, the knee and part of the lower leg were swollen. On palpation the thigh seemed to be full of air bubbles. The color changes of the skin, which became

more and more pronounced, were startling. The thigh was a dirty, yellowish brown, verging at the sides into a bluish red. The thorax, the cheeks and the forehead bore bluish-red spots. The thigh continued to swell during the night, and the abdomen became tympanitic. The general condition of the patient grew worse, death ensuing toward morning. Schranz has been struck by the frequent association of gas phlegmon and influenzal pneumonia, for which he seeks an adequate explanation.

Münchener medizinische Wochenschrift, Munich

March 12, 1920, 67, No. 11

- *The Reticulo-Endothelial Cellular System of the Spleen in Relation to Blood Coagulation. R. Stephan.—p. 309.
- Radiating Pains in Shoulder. E. Plate.—p. 313.
- Spina Bifida Occulta and Congenital Club-Foot. O. Beck.—p. 316.
- A Method for Determination of the Sugar Content of Blood. F. Mezger.—p. 320.
- An Adjustable Nasopharyngeal Speculum. Stephan.—p. 321.
- Operative Treatment of Varices. H. Flörcken.—p. 322.
- Urology for the General Practitioner. Kielleuthner.—p. 322.

Arrest of Hemorrhagic Purpura by Raying the Spleen.—Stephan reports a case of purpura fulminans in a man of 45 in which a refractory hemorrhagic diathesis was successfully combated early in 1919 by means of deep roentgenotherapy applied to the spleen. Investigations that he undertook in connection with this result lead him to state that roentgen radiation applied to the spleen rapidly decreases the coagulation time of the blood in vitro, and increases likewise to a considerable extent the amount of coagulating ferment in the blood serum. Radiation seems to have the same effect on the organism as extensive loss of blood. The essential factor that arrested and cured the hemorrhagic tendency was the increase in the quantity of the coagulating ferment, and this was realized by the action of the roentgen rays on the spleen. He thinks they exert a specific functional stimulus on the elements of the spleen other than the lymph follicles. The blood platelet count does not seem to be modified. The coagulation time was shortened sometimes to one fourth even in normal subjects by raying the spleen; the maximum effect was apparent between the second and fourth hours, and then gradually subsided. His clinical and experimental research has demonstrated, he announces in conclusion, "that stimulating the functioning of the spleen by roentgen radiant energy must be regarded as theoretically a true physiologic method of arresting venous and parenchymatous hemorrhages. In numerous cases it has proved extraordinarily effectual in practice, far surpassing the effect of any medicinal hemostatics."

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

March 6, 1920, 1, No. 10

- *The "Quackery Commission." G. van Rijnberk.—p. 771. Begun in No. 7, p. 529.
- *Inguinal Hernia. J. M. van Dam.—p. 776.
- *Substances Resembling Epinephrin in the Blood Serum. J. R. F. Rassers.—p. 785.
- Influence of Influenza on Birth Rate. J. van Gelderen.—p. 791.
- Diphtheria Antitoxin in Malignant Influenza. A. van Balen.—p. 795.

The State Commission Appointed to Study the Methods of Unqualified Practitioners.—This is the fourth and last of van Rijnberk's articles commenting on the medical and the legal commissions appointed by the state to study the ways and results of treatment of the sick by the unqualified, to determine whether and how the barriers to practice should be lowered. The reports of the Kwakzalvers-Commissie were recently mentioned in THE JOURNAL, page 1109.

Inguinal Hernia.—Van Dam concludes his analysis of the different methods in vogue for correction of inguinal hernia by commending, for boys, the torsion-ligature method for the indirect or lateral hernia; for girls and women, the Alexander-Adams. For men, he prefers the Brenner or Ferrari method if the muscles are strong and the canal narrow. If the canal is widely gaping and the muscles are strong, the Bassini or Brenner is preferable, possibly supplemented by a small laparotomy. On the other hand, if the muscles are flabby, or their insertion on Poupart's ligament is unusually high, it is advisable to reinforce the transverse fascia with a flap from the anterior sheath of the rectus, doubling the

aponeurosis if it is relaxed. With a direct or medial hernia, both men and women should be treated alike on these principles. The operation should thus conform to the varying conditions presented by individual cases.

Substances Resembling Epinephrin in the Blood Serum.—Rassers made extracts of serum from cattle, sheep, rabbits and guinea-pigs and tested their vasoconstricting action on the surviving intestines of white mice, arteries taken directly from just slaughtered cattle, the uterus of cats, etc. Both crystalloid and colloid elements of the serum seemed to be involved in its vasoconstricting action, and in increasing the tonus of the mouse intestine and rabbit uterus, while they reduced the tonus of the uterus cornu of the nongravid cat.

Acta Medica Scandinavica, Stockholm

March 6, 1920, 53, No. 1

- *Experimental Chronic Pancreatic Diabetes after Partial Pancreatectomy. E. Langfeldt.—p. 1.

Experimental Diabetes After Partial Pancreatectomy.—This entire number of the Acta is devoted to the account of two years of research on the development of glycosuria in dogs of different ages after partial resection of the pancreas. The metabolism was rendered more like that of human beings by feeding the dogs with carbohydrates and no meat. The methods of resection of the pancreas were also varied in different animals, to ascertain whether the removal of different parts of the pancreas has any special significance. Twelve photomicrographs are given of the necropsy findings, and a bibliography of 167 titles is appended. The findings all confirm the preponderant rôle of the pancreas in the origin of all diabetic phenomena. It seems to have a catalytic action. When the sugar content in the blood was more than 0.19 per cent., glycosuria followed, and the duration of the high sugar content was of greater import than higher concentrations for shorter periods. Glycosuria, albuminuria and cataract developed in the dogs analogously to what is observed in human diabetics. The ketonuria was also like that in man, but none of the dogs died in coma. The 192 page article is in English.

March 17, 1920, 53, No. 2

- *Meningococcus Infection Simulating Uremia. A. Wallgren.—p. 193.
- *Corynebacteria and Allied Bacteria. H. Bergstrand.—p. 209.

Meningitis with Acute Nephritis.—Wallgren reports a case in which the first symptoms from meningococcus infection were sudden hemorrhagic nephritis in the previously healthy young man. Not until several days later did the typical meningitis symptoms appear. The kidney symptoms, fever and headache were ascribed to uremia until, the fifth day, stiffness of the neck led to lumbar puncture and discovery of the meningococcus. In a second case the young man had had acute nephritis five years before and the weakness, headache, vomiting and somnolency and high blood pressure were ascribed to uremia. The Kernig sign the third week led to lumbar puncture and the meningococcus was found. After a phase of progressive improvement, death occurred from a focus of softening found in the brain. There was undoubtedly associated uremia, testified by the renal insufficiency, subsultus tendinum noticed, on one occasion, and the necropsy findings. In a third case a boy of 5 presented the same train of symptoms, first the nephritis and a few days or weeks later the meningitis. In Rist's case, purpura was the first manifestation of the meningococcus infection, and the fatal meningitis did not develop until ten weeks later. In the entire group, the clinical picture at first was that of uremia from the unmistakable nephritis, and there was nothing to suggest the imperative necessity for antiserum treatment. The article is in French.

Corynebacterium Found in Case of Leukemia.—Bergstrand found a micro-organism of the corynebacterium group in pure cultures in the lymph glands excised from the elbow and groin of a man of 49 with lymphoid leukemia. In connection with these findings he discusses bacteria in general, emphasizing that bacteria have more changeable forms than has been hitherto realized, and relating his reasons for assuming that bacteria are nearer to the fungi than is usually accepted. The article is in German, and is illustrated.

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THE CHANGE OF TYPE OF DISEASE*

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Alteration of type of acute disease—a problem which exercised our professional ancestors, notably Sydenham—has recently come under discussion especially in connection with epidemics prevalent during the war, and may therefore serve as the subject for a few remarks. Although the debate rages mainly between the epidemiologists and the bacteriologists, the outcome is of great interest to the clinician.

Sydenham, whose position as an epidemiologist has been defined by Major Greenwood,¹ pointed out that acute diseases showed (1) a long period evolution with a rise, decline and fall, extending over centuries, and (2) seasonal variations with waves measured in months so that their character and their reaction to treatment varied at short intervals, a method successful in one epidemic becoming dangerous in a subsequent outbreak. Though, as Crookshank² points out, Ballonius (1574) anticipated him, Sydenham also (3) postulated the theory of epidemic constitutions to the effect that a special influence—telluric or climatic—becomes dominant and impresses some peculiar features on the clinical manifestations of diseases prevalent at the time to the exclusion of other types or symptoms, the amplitude of this wave being measured in years. Greenwood translates the much discussed term epidemic constitution as meaning that the non-specific secondary infections, such as those so plentifully exemplified in measles and influenza, are as important from the point of view of morbidity and mortality as the specific causes of the disease. Sydenham, of course, had no knowledge of the *verae causae* of disease or bacteriology, but with this knowledge Hamer, following the lines of the English Hippocrates, eloquently argues that members of the "catarrhal group of diseases," namely, cerebrospinal fever, acute poliomyelitis, encephalitis lethargica and influenza, are variants of the same morbid process, i. e., diverse manifestations of the same virus, under special conditions; this represents the most extreme divergence of the epidemiologic from the bacteriologic points of view.

That the type of disease changes has been disputed and it has been asserted that the supposed change is in

the mental outlook of the observers. Markham,³ in 1864, vigorously attacked the theory that there was a change in type of disease, and controverted the view that about 1832, after the epidemic of cholera, the type of fever previously sthenic became asthenic so that bleeding was no longer well borne. He in fact suggested that the notion of a change of type of disease was largely invented, years after 1832, to explain the abandonment of bleeding in inflammations and fevers.

At the present time no one doubts that certain diseases have shown changes of type; scarlet fever is universally recognized to have become much milder; Brownlee⁴ finds that though there is not any evidence that the amount of scarlet fever (or the infectivity of the causal agent) is less now than in the latter half of the last century, the mortality (or the virulence of the organism) has greatly fallen. Pneumonia is another example of a disease in which the virulence, as shown by the mortality, has increased, and the type of the disease has since the reappearance of influenza in 1889-1890 undergone some change, the disseminated form being common and the frank lobar pneumonia less frequent. The seasonal variation of type was shown in a well-marked degree by the two waves of influenza in the spring and autumn of 1918, the high rate of thoracic complications and of mortality in the second wave being associated with *Streptococcus hemolyticus* and the pneumococcus.

In the Royal Navy the spring wave of influenza was accompanied by 0.4 per cent. of complications and 0.03 per cent. mortality, whereas in the autumn wave the incidence of complications was 6.8 per cent. and of deaths 2.8 per cent.⁵

It would, indeed, be remarkable if diseases always respected the types conveniently accorded them in textbooks, for, as Sir Clifford Allbutt long ago insisted, a disease is not a fixed entity but a reaction of the body to some infection or irritant.

Alterations in the clinical features of diseases usually regarded as typical may be due to several causes. It is obvious that variations may occur, on the one hand, in the causes as regards their virulence and, on the other hand, in the resistance of the patient. A change in the clinical manifestations may therefore be explained on bacteriologic grounds, by the supposition of changes in the soil, or of changes in both these factors. The permutations and combinations thus possible would explain many changes in the character of disease; thus, a highly virulent state of the infective agent acting on a susceptible individual with greatly lowered resistance would tend to produce a fulminating attack, whereas an attenuated virus acting

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Greenwood, M.: Proc. Roy. Soc. Med. (Sect. Epidem.) **12**: 55 (July) 1919; Brit. M. J. **2**: 405 (Sept. 27) 1919.

2. Crookshank, F. G.: Proc. Roy. Soc. Med., London (Sect. Epidem.) **13**: 159, 1920.

3. Markham, W. O.: Bleeding and Change in Type of Diseases, the Gulstonean Lectures for 1864, Brit. M. J., 1864; London, Churchill, 1866.

4. Brownlee, J.: Pub. Health, London **28**: 131, 1914-1915.

5. Hill, R.: J. Roy. Sanit. Inst. **40**, 1919.

on an individual with good resistance might fail to produce any effect or cause an abortive illness, thus conferring immunity.

The difficult question arises whether or not bacteriology and changes in the resistance of the race, either comparatively permanent as the result of environment or transient from disease or other factors, will together satisfactorily explain alterations in the clinical type of disease; or whether there is some further and mysterious factor, such as is implied by some epidemiologists, which has yet to be thoroughly elucidated. Though I shrink from expressing a dogmatic opinion, the first explanation seems the more attractive.

BACTERIOLOGIC REASONS FOR CHANGE IN TYPE OF DISEASE

Bacteria may vary in their pathogenicity either as the result of external influences or spontaneously when no such factor is obvious. External conditions, such as temperature and other climatic factors, concentration of their carriers and hosts, and conditions of passage, may influence the vitality and virulence of micro-organisms. It has also been suggested that micro-organisms have cycles of infective activity following periods of rest, and that this cycle explains by its periods of high infectivity the occurrence of epidemics; the influenza virus appears to have a cycle of thirty-three weeks, and the various strains of the infective agent of measles cycles of eighty-seven, ninety-eight and 110 weeks.⁶ It would naturally follow, though proof is required, that further variations in the virulence of the germ might alter the character of the clinical manifestations. Then again, the same specific organism may give rise to clinical features of varying character; thus, the influenza bacillus may be associated with symptoms of coryza, meningitis, rheumatic fever, or of typhoid fever; and this variation may be seen in the same epidemic, as in the epidemic in Hertfordshire of protean symptoms due to *M. catarrhalis* reported by Merwyn Gordon and Dunn. These variations may, it is true, be eventually explained in some other manner, namely, by the existence of some additional factor, such as an ultramicroscopic organism or by ultramicroscopic bodies of the nature of enzymes (enzyme theory of disease) associated with the bacteria.⁷

Another bacteriologic explanation for change in the clinical type of disease is naturally attractive. In a disease such as enteric fever, variations in different outbreaks may be due to different strains of the infecting organism; this has been shown by the division of enteric into (a) typhoid due to *B. typhosus* and (b) paratyphoid A and (c) paratyphoid B, both with a lower mortality; and so what might have been regarded as a change of type is really explained by the occurrence of different though allied infections. In cerebrospinal fever the different types of meningococci may be correlated with different clinical types; thus Dopter⁸ showed that the predominant infective meningococcus before the European war was Type A (Gordon's Types I and III), and that later it became Type B (Gordon's Types II and IV); and Netter⁹ correlated the greater frequency of septicemic cases and lesions such as rashes, arthritis and iridocyclitis

with this change to Type B. The differentiation of the types of pneumococci is another example of the influence of different strains or types of an organism in determining different clinical types of a disease previously regarded as due to one organism. The different clinical types of bacillary dysentery due to *B. dysenteriae* Shiga and *B. dysenteriae* Flexner have been well established during the war. This explanation of different clinical types as depending on different strains or types of the infecting organism is so logical that it is tempting to adopt it widely, and perhaps especially for diseases in which the nature of the infecting organism has not yet been established.

The occurrence of secondary infections, such as the pneumococcus and *Streptococcus hemolyticus* in measles and influenza, is a powerful factor in the change of type of disease, and has already been mentioned as an explanation of Sydenham's epidemic constitutions. It may be surmised that the liability to secondary infections may depend either on a previous want of resistance in the patient or on such a virulent primary infection that the patient's resistance is at once broken down.

The influence of prophylactic inoculation in preventing the incidence and modifying the course of smallpox, typhoid and pneumonia (F. S. Lister) are too well known to require elaboration. But attention may be directed to the suggestive work of Vaughan¹⁰ and his collaborators on the question of a nonspecific immunity conveyed by common infections, especially those of the respiratory system, against others by which the severity of the subsequent disease among those, especially town inhabitants, is diminished by a previous infection.

CHANGE IN THE RESISTANCE OF THE PATIENTS

Long ago a change of type of disease—an alteration from the "sthenic" to the "asthenic" form of fevers—was thought to have occurred as the result of the cholera and influenza epidemics of 1832 and 1833 (Watson). And the altered conditions of life entailed by the concentration in cities of persons previously living in country districts has been brought forward to the same effect, though this is rather contrary to Vaughan's contention mentioned above. In our own time influenza has exerted an influence in the form of pneumonia, at any rate to the extent of making the disseminated or bronchopneumonic type commoner.

The varying resistance of the population to disease is concerned with both the periodicity of disease and the character of the epidemics. The epidemics of measles in Great Britain occurring at intervals of from eighty-seven to 110 weeks (Brownlee) are commonly assumed to depend on the accumulation of susceptible children in sufficient numbers, though, as is pointed out above, another factor may be considered. In isolated districts where measles rarely occurs, the introduction of the infection causes a widespread and severe epidemic, as in the classical instances of the Faroe Islands (1781 and 1846), Fiji (1875 and 1907), in the neighboring island of Rotuma in 1911,¹¹ and in the Shetlands. These examples suggest that the absence of immunity is responsible. On the other hand, the gradual diminution in the severity of at least the outward manifestations of syphilis might be thought to depend to some degree on a general

6. Brownlee, J.: Proc. Roy. Soc. Med. (Sect. Epidem.) **12**:77 (Aug.) 1919; Lancet **2**:856 (Nov. 8) 1919.

7. Dixon, J. Gurney: The Transmutation of Bacteria, Cambridge, 1919, p. 153.

8. Dopter: Ann. d'hyg. publ. et. de méd. lég. Series 4 **29**:144, 1918.

9. Netter, A.: Bull. et mém. Soc. méd. d. hôp. de Paris, Series 3, **41**:883, 1917.

10. Vaughan, V. C., and Palmer, G. T.: Mil. Surgeon **46**:1 (Jan.) 1920.

11. Corney: Proc. Roy. Soc. Med., London (Sect. Epidem.) **6**:132, 1913.

approach to relative immunity; but here the question of treatment comes in, as it does in regard to diphtheria, which has also been thought to have independently become less virulent.¹²

The resistance of individuals and races is obviously influenced by environment, such as overcrowding, overwork, bad food and alcoholism, and thus both the incidence and the severity of the disease—conditions which must be distinguished from each other—become increased. Among the Italian armies during the war a tendency to get manifestations of scurvy in various infections was noted. In his recent Lumleian lectures at the Royal College of Physicians of London, Sir John Rose Bradford expressed his opinion that war nephritis, which has been regarded as a special form, was only acute nephritis occurring on a large scale in young and previously healthy men. It may, however, be difficult to differentiate between the effect of improved hygienic conditions, on the one hand, and of diminution in the virulence of the infecting organism, on the other; thus, the disappearance of typhus from Glasgow and other towns was naturally ascribed to improvement in the living conditions; but Brownlee points out that this disease simultaneously subsided in the West Highlands and Ireland, where no such sanitary alterations occurred, and argues that the virulence of the infecting organism became attenuated.

EXPERIMENTAL STUDY OF THE NASOPHARYNGEAL SECRETIONS FROM INFLUENZA PATIENTS

PRELIMINARY REPORT *

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AND

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This experimental study of the nasopharyngeal secretions from influenza patients was made during the course of one and a half years in three successive periods. The first period coincided with the epidemic wave of 1918-1919. During this period were studied actual cases of acute uncomplicated influenza and persons who had never been affected. The second period embraced the late autumn of 1919, during which influenza did not prevail in New York in epidemic form. During this interepidemic stage, healthy controls were studied. The third period, during the winter of 1920, saw a return of the epidemic. At this time additional cases of the disease were available for investigation.

By proceeding in this manner we hoped to check our results for each period against one another. As the sequel will show, we believe we succeeded in this undertaking, with the consequence that we are enabled to present our findings with perhaps a degree of confidence not otherwise appropriate.

In planning our experiments we had in mind the possible presence, in the nasopharynx of persons suffering from acute epidemic influenza, of some agent the effects of which might be noted in animals.

In considering the criteria of activity of this agent, we thought in the first place of the well known phenomenon in man of leukocytic depression, involving

especially the mononuclear cells, during the acute influenzal infection. In the next place, we had in mind changes of a more or less pronounced but possibly transient character, arising in the lungs, which might conceivably predispose to the severe pneumonias that often accompany as a secondary or concurrent infection the influenzal attack.

The materials with which we worked were the saline washings from the nose and throat. We secured these materials from eight cases of influenza within the first thirty-six hours of the disease, and from twelve cases at later stages, namely, either during convalescence or the period of the postinfluenzal pneumonia. In addition, fourteen persons, during the epidemic or interepidemic periods, believed never to have had influenza were washed in the same manner and their washings studied.

Full grown rabbits were used for inoculation, and no rabbit suffering from snuffles or any detectable disease was employed. All animals were subjected to preliminary blood counting, temperature taking and weighing, and any showing variations beyond the average were discarded. These observations were made on three to seven successive days previous to inoculation.

The inoculations were made directly into the lungs by means of the intratracheal catheter; 3 c.c. of material was the usual dose for a 2.5 to 3 kilogram rabbit, and consisted of (a) the unfiltered nasopharyngeal washings, (b) the filtered washings, (c) lung tissue suspensions, filtered and unfiltered, from previously inoculated rabbits, and (d) similar lung tissue preserved in sterile 50 per cent. glycerin.

It is desirable, in this place, to state that unfiltered washings were employed in the expectation that they could be purified, or rather deprived of their ordinary bacteria, by successive animal passages. It was believed that if this could be accomplished there might be a better chance of preserving and, possibly, bringing to multiplication some other variety of microorganism, more resistant and virulent perhaps, which would give to the washings from cases of uncomplicated influenza a quality lacking in others. It was, of course, realized that not in every instance could this favorable outcome be looked for. Now and again it was to be expected that a virulent pneumococcus or streptococcus would set up a pneumonia to which the animal would succumb. But if the ordinary bacteria could be suppressed by animal passages in a few instances and something survive which produced definite changes in the structures of the rabbits—in the blood and lungs, for example—the washings from cases of influenza might thus be characterized in a way distinguishing them in effects from the washings of another origin. In this manner the operation of a usual pathogenic agent is to be deduced, although it might not be possible to determine certainly that this agent is the inciting microbic agent of influenza. However, if a certain correspondence in tissue and other effects can be shown to exist between the person suffering from influenza and the rabbit inoculated with materials originally derived from influenza cases and free from all ordinary bacteria, a probability as to the nature of the pathogenic agent is introduced into the calculation which encourages further investigation along the indicated lines.

There were inoculated into the lungs of rabbits the unfiltered nasopharyngeal secretions from five cases

12. Duncan, E.: Change of Type in Disease, Glasgow M. J. 90: 1, 1916.

* From the Laboratories of the Rockefeller Institute for Medical Research.

during the first epidemic and three during the second, in the first thirty-six hours of the disease; and from eleven cases during the first epidemic and one during the second in the later stages of the affection.

RESULTS OF EXPERIMENTS

The following effects were induced by the materials from seven of the eight fresh cases, but not by any of those from the twelve cases examined after thirty-six hours.

Clinical Effects.—From twenty-four to forty-eight hours after inoculation, fever developed, associated with the ordinary signs of indisposition in a rabbit, such as listlessness and ruffled hair. This was accompanied by conjunctivitis, varying from injection to pronounced catarrhal inflammation. The striking feature, however, was the definite and often marked leukopenia resulting from the depression of the mononuclear cells, as shown in the accompanying chart. If the condition was allowed to run its natural course, these symptoms endured for three days, the animal then returning to normal. If the rabbit was killed—for if the condition remained uncomplicated by ordinary bacterial infection none died—an unusual pathologic picture was revealed.

Pathologic Effects.—The respiratory organs were affected to the exclusion of all other structures. No pleuritis or exudate in the pleural cavity was evident. The lungs were voluminous and edematous, and had a mottled, hemorrhagic appearance. The hemorrhages on the surface, beneath the pleura, were diffuse or discrete, occupying areas of a few millimeters in extent, or covering a large part of a lobe. In addition, minute petechiae occurred. On section of lungs the cut surface revealed a hemorrhagic edema; it dripped a blood-stained, frothy fluid. The hemorrhages again were either diffuse and large or discrete and small; in the latter instance they were numerous.

Microscopic sections of the lungs were made through various parts, the base, periphery or hilum, and as a rule were carried through the hemorrhagic foci. The hemorrhages were either diffuse, invading large areas of pulmonary structure, or were localized to small areas, or seen as extravasations into the interalveolar and intra-alveolar structures. The edema was pronounced: the alveoli were filled with serum, and there was a serous exudation in the interalveolar strands. The lung structure showed a cellular exudate, comprising polymorphonuclear cells showing usually large eosinophilic granules; large cells of an alveolar type,

probably desquamated bronchial epithelium, and in the interalveolar strands, mononuclear cells. Some fibrin was present as well. The bronchi were partly filled with erythrocytes, fragments of degenerated and exfoliated epithelia, and leukocytes. Their walls here and there had lost their epithelial lining, and were hyperemic and thickened. The capillaries were distended with blood.

No ordinary bacteria were seen in impression films of the lung tissue or in sections stained by Gram's or MacCallum's method, or in cultures of the tissue.

If the clinical effects observed continued for forty-eight hours, the animal as a rule was killed, and the affected lung tissue was ground, suspended in saline solution, and injected into the lungs of a new series of rabbits. In this way the clinical and pathologic effects were passed through as many as fifteen successive rabbits.

These effects were obtained only with the nasopharyngeal secretion in seven of eight patients, collected within thirty-

six hours after the onset of the first symptoms. Twelve cases of influenza, in which the washings were collected forty-eight hours after onset and in the stage of convalescence or of secondary pneumonia, failed to give the same results.

Control experiments were made by injecting into the lungs of rabbits saline solution, suspensions of normal rabbit lungs, normal rabbit serum, foreign protein, such as human ascitic fluid, bacteria of the ordinary species, including Pfeiffer's bacillus and its poison as prepared by Parker's method, and finally the nasopharyngeal

secretions from fourteen persons free from influenza and tested in the epidemic and interepidemic periods. Of the latter, seven suffered from early or later stages of coryza. None of the animals inoculated with the control materials or these secretions showed the same clinical and pathologic action; a few gave a polynucleosis with frank lobar pneumonia; others, a mononucleosis without visible lung involvement, and still others, inconstant effects.

A closer study was then made of the agent causing these phenomena, and it was found that although it was extremely difficult to secure these results with filtrates obtained directly from the patient's secretions, they could be obtained by first passing the material through a series of rabbits. Then repeated filtration through Berkefeld "V" and "N" candles between rabbit passages did not hinder the development of the typical clinical and pathologic effects.

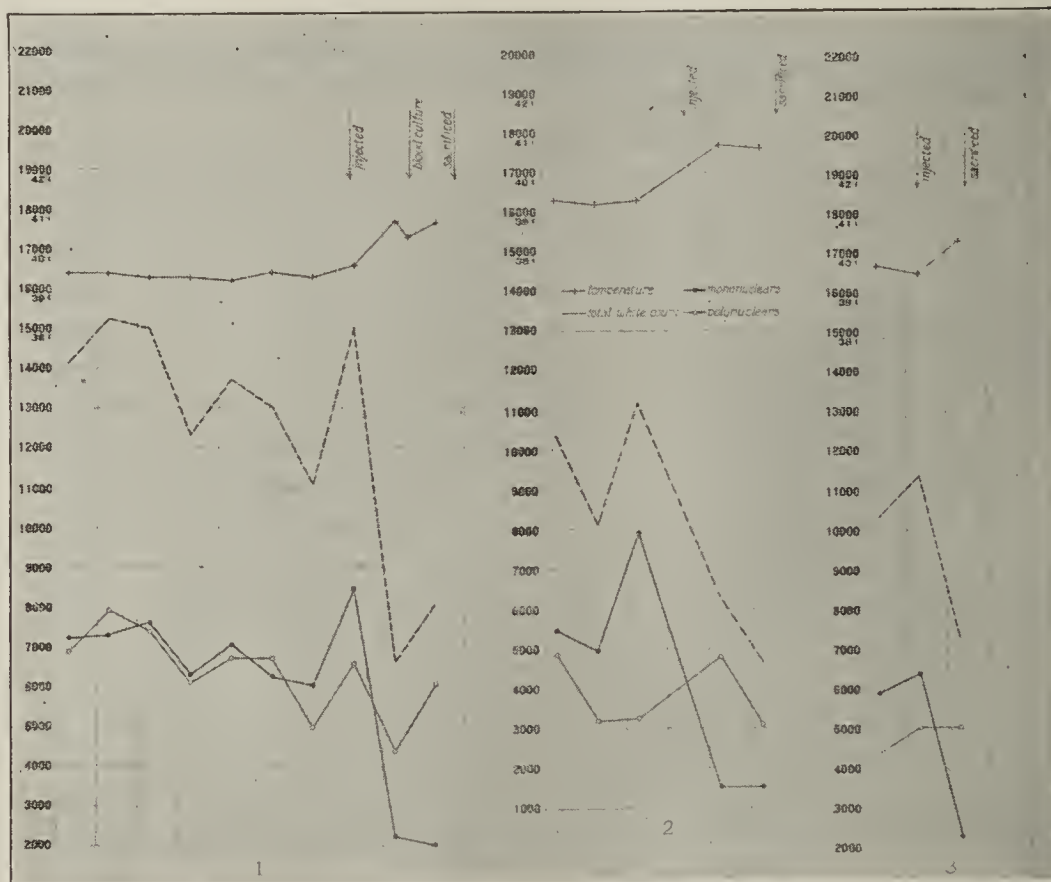


Chart illustrating effect on blood count. To be noted are the rise in temperature and the depression in the total white blood cell count caused by a deficiency of mononuclears. 1, first rabbit passage of the nasopharyngeal washings from a fresh case of uncomplicated influenza; also the normal curve of this animal prior to injection; 2, second rabbit passage; 3, seventh rabbit passage.

We determined that the agent was able to resist the action of sterile 50 per cent. glycerin for nine months, but probably not for a much longer period. In one series of experiments glycerinated material free from ordinary bacteria was passed with typical effects through ten successive rabbits.

No case of the uncomplicated effect in the rabbits terminated fatally. By "uncomplicated" we mean that cultures of lung tissue after the sacrifice and of blood during the illness yielded no growth of ordinary bacteria.

But although these effects were produced repeatedly in rabbits with material free from ordinary aerobic bacteria, the latter micro-organisms were encountered occasionally in the course of the experiments.

Those animals in which the inoculation terminated fatally did yield growths of various bacteria from the lung tissue, thus: pneumococcus, Group IV, eleven times; atypical II, three times; *M. catarrhalis*, a gram-negative hemoglobinophilic organism resembling Pfeiffer's bacillus, and *B. pyocyaneus*, each twice; *Streptococcus viridans*, streptothrix, and *B. coli-communis*, each once. Generally the same organism was not found regularly in the consecutive rabbit passages of a series of transmissions. For example, in the filtrate series of Case 17 the fifth passage showed a pneumococcus Group IV, the seventh and eighth *B. pyocyaneus*, and the tenth a gram-negative, hemoglobinophilic micro-organism, resembling Pfeiffer's bacillus. The other passages were free from such bacteria. In three of the seven series of transmissions, the ordinary bacteria in the secretions were suppressed completely, and all the animal passages remained free from them.

The pathologic picture when complicated by these ordinary bacteria showed severe, extensive lobar or bronchopneumonia with fibrinous and exudative pleurites and abscess formation and, as a rule, a rapid decline and death of the animal.

A series of investigations was undertaken in which an effort was made to reproduce the last mentioned conditions experimentally. Rabbits were injected with the influenzal material intratracheally and later with small nonpathogenic doses of the pneumococcus, Pfeiffer's bacillus, and *Streptococcus viridans* intravenously. In these animals the bacteria localized themselves in the lungs, producing extensive lobar pneumonias or bronchopneumonias with pleurites and, as a rule, leading to death. Hence apparently this material obtained from the nasopharyngeal secretions in early influenza diminishes the resistance of the rabbit's pulmonary structures against invasion by these common micro-organisms.

CONCLUSIONS

From the evidence obtained in this study, extending over one and a half years, it would appear that there occurs a specific substance in the nasopharyngeal secretions in cases of epidemic uncomplicated influenza. This substance seems to be present only in the early hours of the disease. It has not been found later than thirty-six hours after the onset, nor in cases of secondary pneumonia, nor in secretions from persons free from the syndrome of influenza either during the epidemic or during nonepidemic periods.

With this substance we have induced a clinical and pathologic condition in rabbits, affecting the blood and pulmonary structures mainly, which could be maintained and carried through at least fifteen successive animals. For this reason, and also because of the

dilution between passages and the shortening of the incubation period from rabbit to rabbit, we are led to believe that we are dealing with the actual transmission of a multiplying agent rather than with a passive transference of any original active substance.

This active substance is filtrable, and resists the action of sterile 50 per cent. glycerin for nine months, but probably not for a much longer period.

The manner in which the bacteria of ordinary species, such as the pneumococcus, the Pfeiffer bacillus, *Streptococcus viridans* and others are encountered during the course of the transmission experiments and during the experimental reproduction of the condition described justifies the opinion that these micro-organisms are secondary in effect. The essential effects are produced by a substance wholly unrelated to these bacteria.

The similarity that exists between these effects in rabbits and those occurring in man lays a basis for further investigation on the inciting agent of influenza.

It may be stated here that during the course of these experiments we have seen in cultures, both from the lung tissue of affected rabbits and in the filtered nasopharyngeal washings from cases of influenza, tiny bodies, almost invisible, which decolorize by Gram's method, and which stain generally with difficulty with nuclear dyes. This phase of the subject is still under investigation.

THE BACTERIOLOGY OF THE URINE IN RENAL TUBERCULOSIS *

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It has long been generally believed that the urine in tuberculosis of the urinary tract is sterile. On this basis one feels fairly safe in assigning to tuberculosis those cases in which there is a cystitis with pyuria and a negative culture. But in view of our experience in the Genito-Urinary Department at the Massachusetts General Hospital, it has seemed worth while to look into the question with some care.

According to Rafin,¹ it was Melchior who, in 1895, asserted that the urine in urinary tuberculosis was aseptic, a statement which was confirmed by Nogués² in 1899. Meanwhile, in 1897, Albarran³ maintained that tuberculous urine was almost always secondarily infected.

This apparent discrepancy of opinion on the part of competent observers may be explained by the work of subsequent investigators. Sutter,⁴ in 1907, studied seventy-eight cases of urinary tuberculosis and obtained positive cultures in nine, of which seven patients had been previously catheterized or otherwise subjected to instrumentation. In the same year Wildbolz⁵ found secondary infection in 22 per cent. of his cases, but regarded it as due to previous local treatment. In 1911, Pousson¹ reported twelve secondary infections

* From the Genito-Urinary Department of the Massachusetts General Hospital.

* Read at the twelfth annual meeting of the American Urological Association, New York, March 23, 1920.

1. Rafin: J. d'urol. méd. et chir. 1:777, 1912.

2. Nogués: Tr. IV Cong. d'urologie.

3. Quoted by Rafin (Footnote 1).

4. Sutter: Ztschr. f. Urol., 1907.

5. Wildbolz, H.: Folia urolog. 1:401, 1907.

in thirty-two cases. This work was followed in 1912 by that of Rafin,¹ who made 239 bacteriologic examinations of the urine in urinary tuberculosis. The female patients were catheterized, but in the male the urine was voided into a sterile flask after local antiseptics and the passage of the first portion of the urine. Positive cultures were obtained in seventy-one or 29.6 per cent., the staphylococcus being found fifty-eight times, the colon bacillus three times, and streptococci twice. Rafin ascribed his positive findings, as did his predecessors, to the fact that previous instrumentation, improperly carried out, had been performed. None the less it seems clear that the evidence thus far obtained strongly favors the view that tuberculous urine is generally sterile.

In 1918, Spooner⁶ made a very careful bacteriologic study of ten tuberculous kidneys freshly removed at operation. While he could demonstrate the tubercle bacillus by one means or another in all, he found evidence of secondary infection in none. Cultures from seven urines of patients suffering from renal tuberculosis were examined. In three instances, catheter specimens of the bladder urine showed organisms other than the tubercle bacillus. In four cases the urine obtained from the ureter on the infected side showed no growth on ordinary culture mediums after forty-eight hours' incubation. Spooner concludes that whereas the urine from a tuberculous kidney, if obtained from the ureter, shows no evidence of mixed infection, the bladder urine is often contaminated by other organisms.

Recent advances in cystoscopic and bacteriologic technic now enable us to study this interesting and important question with more accuracy than has heretofore been possible. Whereas formerly the specimens were generally obtained only from the bladder, often without a catheter, they are now obtained not only from the bladder and by catheter, but from the separate kidneys as well. Furthermore, we have come to place little or no reliance on the culture of a specimen of urine, having found that contaminating organisms from one source or another may and often do vitiate the results. Instead, dependence is now placed largely, if not entirely, on smears of the centrifugalized sediment of the fresh urine, a technic for the perfection of which we must thank our colleague Dr. E. G. Crabtree. By this means we are able to demonstrate not only the tubercle bacillus in the great majority of cases, but also the presence of secondary organisms.

RESULTS OF OBSERVATIONS IN SIXTY-THREE CASES

It has therefore seemed worth while to examine the records of hospital and private cases which have been so studied. We have accordingly collected sixty-three instances, with more or less complete data. In all, the diagnosis has been proved either by finding the tubercle bacillus in the urine, by operation, or at necropsy. The urine from the tuberculous kidney has been centrifugalized, and the sediment stained and examined in all cases from which it could be obtained, that of the healthy side in the great majority. A smear of the bladder urine has been examined in many, chiefly in those cases in which the tuberculous ureter could not be catheterized. In many of these cases, previous instrumentation of one sort or another, performed not always *secundum artem*, had been car-

ried out. It is impossible to say whether or not this has influenced the results, but we firmly believe that while it may have vitiated certain bladder findings, it has had little or no effect on the kidney urines.

Cultures from the bladder were made in thirty cases with fifteen positive results, in ten of which the symptoms dated anywhere from one to ten years. This would suggest either that the antiquity of the disease was a factor, or that during these years secondary infection had been invited by means of the promiscuous and futile local treatment to which many of these patients had been subjected.

Cultures of the right kidney urine were made thirty-one times with seven positive results, and twenty-eight times from the left kidney with six positive results. In these, as in the bladder urines, the colon bacillus was most commonly found. The data as to the duration of symptoms in these particular instances are of no special value. It will be observed, however, that whereas in the bladder urine the cultures were positive in 50 per cent., in the kidney urines positive results were obtained in but 22 per cent., indicating a greater ability of the kidney to remain aseptic than the bladder. This statement is somewhat emasculated by the fact that of the thirteen positive cultures from the kidney, eight were on the healthy side and only five on the tuberculous side. We have previously stated, however, that comparatively little reliance can be placed on the results of cultures, and these data are given only for what they are worth.

Smears of the bladder urine showed secondary infections in twenty-one cases, and as in the cases from which cultures were made, there were more with a duration of years than of months.

Smears from the kidney urines were made in all cases in which it was possible to catheterize the ureter. Secondary organisms were found in only five instances, three times on the right, of which two were on the healthy side; twice on the left, of which one was from the sound kidney.

Combining the results of cultures and smears from the separate kidney urines, it is found that positive results were obtained on the healthy side in eleven cases, and on the tuberculous side in seven: a total of 28.5 per cent. of secondary infection of the kidney urine in sixty-three cases.

While we have found no adequate explanation for the popular belief that tuberculous urine is sterile, it has been suggested, but never demonstrated so far as we know, that this comparative asepsis is due to the excessive acidity of such urine. In our cases the reaction of the bladder urine to litmus was tested in all at least once, often many times. In twenty-eight of the sixty-three the reaction was alkaline either once, several times or on all occasions (twelve cases). In some of these urines, decomposition had doubtless occurred, owing to a too prolonged residence in the laboratory; in others, an accurate chemical test may well have shown that the alkalinity to litmus was in reality chemical acidity. A few observations made by us on fresh tuberculous urine obtained by ureteral catheter have shown a maximum hydrogen ion concentration of 5.3 while some tests made by Henderson and Palmer⁷ showed a concentration of only 6.7, and even 7.4. This is a far lower acidity than was found by these observers in a number of other patho-

6. Spooner, L. H.: J. M. Research 39: 59 (Sept.) 1918.

7. Henderson, L. J., and Palmer, W. W.: J. Biol. Chem. 13: 393, 1912-1913.

logic conditions. On the other hand, Labbé and Vitry,⁸ in 1914, after an elaborate investigation of the comparative total acidity of the urine in tuberculosis and in other conditions, found that this acidity was greatest in the tuberculous cases. It would appear, therefore, that while tuberculous urine is generally acid, it seems never to be excessively so, and may at times be neutral or even alkaline.

That the reaction of tuberculous urine in and of itself is not hostile to the growth of the colon bacillus is shown by our own clinical data (in one kidney large numbers of tubercle and colon bacilli were found in the same smear). We have also found that, after examination, specimens of tuberculous urine which have been left standing in the laboratory often show a profuse growth of organisms from accidental contamination. Furthermore, Shohl and Janney⁹ have demonstrated experimentally that the colon bacillus will grow in urine with a fairly wide range of hydrogen ion concentration, the optimum for growth being from 6.0 to 7.0. On the other hand, bacillary growth is inhibited in urine with acidity of from 4.6 to 5.0. As the latter figure shows an acidity but slightly greater than that which we have ourselves obtained, it would suggest that in some instances at least the acidity of the urine is such that while secondary organisms may not be actually killed, their growth is at least inhibited. The few observations that we have made have shown the desirability of further study, and this we hope to take up at some future time. It has been suggested that some endotoxin secreted by the tubercle bacillus may be a factor in the production of asepsis. This may eventually prove to be the case; but we find that the knowledge of such an endotoxin is still meager, and no statement at all has been made as to its possible bactericidal properties.

There is no question that infection of one kidney exerts an inhibitory and depressive influence on its uninfected mate. Albarran long ago made this observation, and it has since been confirmed by many others. Today our more precise methods of measuring kidney output enable us to gage this toxemia before the excision of the diseased kidney, and to demonstrate its elimination after operation. Possibly this depressive effect on the healthy kidney accounts for the fact that its urine is found to contain secondary organisms more often than does that of the tuberculous kidney. This theory by no means, however, furnishes a satisfactory answer, for it does not tell us why the tuberculous kidney, whose resistance was so low at the outset that the tubercle bacillus obtained a foothold and which has been still further depleted by its ravages, should not more often play host to other organisms.

Those who hold to the view that bacteria can pass from bladder to kidney by way of the ureteral lymphatics may offer this as a possible explanation. The blocking of these lymphatics by the early and extensive involvement of the ureter in renal tuberculosis would certainly help in keeping such an organ sterile; and by the same token the unimpaired lymphatics of the healthy kidney would offer an explanation for the more frequent infection of this organ. We believe, however, that organisms reach the kidney through the blood stream in the majority of instances.

CONCLUSIONS

1. Cultures of urine are unreliable. Far greater dependence is to be placed on a properly prepared smear of a fresh sediment.

2. Cultures and smears have shown positive results from the bladder urine in 55.3 per cent., and from the kidney urine in 28.6 per cent. The sound kidney has yielded positive findings more often than has its tuberculous mate.

3. Tuberculous bladder urine is generally acid, but may be neutral or alkaline. The kidney urines, so far as studied, have been strongly acid.

4. In general, it may be said that there is as yet no adequate explanation for the comparative asepsis of tuberculous urine. Its usually high acidity is probably an important factor. The greater number of contaminations in the urine from the sound kidney may be due to the toxemia produced by its tuberculous mate; but we can give no reason for the sterility of the latter organ.

5. Our results show conclusively that while a negative smear or culture from the bladder in a case of cystitis and pyuria points strongly to tuberculosis, a positive smear or culture from the bladder, or even from the kidney urine, does not exclude this disease.

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TESTICLE TRANSPLANTATION

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AND

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The term "interstitial gland" was first brought to our attention by articles in the press referring to Serge Voronoff of Paris, who was said to have transplanted these organs from apes to man, with brilliant results.

"Interstitial" cell was the term used in an editorial¹ in *THE JOURNAL*, in which the work of Steinach on the development of secondary sexual characters was discussed. The editorial concluded that:

The sum total of the foregoing observations tends to confirm the view, expressed by several authors,² that the essential factors for the production of the genital hormones are the "interstitial" cells found in both the testes and ovaries of various animals. The genital glands are thus believed to contain gland cells of two distinct and functionally independent types. These interstitial cells, however, are apparently not universally present. It has been shown that, by means of the roentgen rays, it is possible to destroy the germ cells in either testes or ovaries, so rendering the animals sterile. Whether the interstitial cells, which are not destroyed by these rays, are originators of the unique effects in respect to secondary sexual development and the awakening of mammary activities remains to be determined.

The various reports of Lydston first attracted our attention to the procedure of implanting testes from the dead body to the living. As there are on the average three executions in this prison each year, valuable material for this kind of work became available.

Our first implant was done in August, 1918. Altogether, operations have been performed in eleven cases

8. Labbé, H., and Vitry, G.: *Presse méd.* 22: 437, 1914.

9. Shohl, A. T., and Janney, J. H.: *J. Urology* 1: 211 (April) 1917.

1. The Modification of Secondary Sexual Characters, editorial, *J. A. M. A.* 62: 618 (Feb. 21) 1914.
2. Starling, E. H.; *Human Physiology*, 1912, p. 1362.

with human material, and five with testicles removed from young rams. The time elapsing since the use of the animal tissue has been too short to make any deduction as to its value.

In five patients, only one testicle was implanted into the scrotum, while in six others, double transplantation was performed. Results have been apparently as good with the single as with the double graft. One whole testicle of a ram was embedded in the scrotum of each of two patients, but they began to slough in seven and sixteen days, respectively. One came away entirely, while a small part of the other remains after six weeks. In three other cases, only half of a ram's testicle was used, but in all, sloughing began seven days after the operation.

With the human material the implant, denuded of the parietal tunica vaginalis, was in three cases placed in a bed made in the scrotal tissues; in seven, testicles were grafted on the atrophied gland of the recipient; and in one double implantation, one testicle was embedded in the right scrotum, and a denuded surface of the other sewed on a similar section of the gland on the left. It is believed that the engrafting gives better results than the embedding.

These operations were performed for the most part with local procain anesthesia, although spinal anesthesia also was used.

REPORT OF CASES

CASE 1.—The first patient operated on, aged 25, rather dull mentally and inactive physically, had had both testicles injured by a kick five years before. A double transplantation from a negro, aged 27, apparently had a beneficial effect on him, in that he became more active, talked more, wrote better letters, comprehended jokes, and had more sexual activity than before. After leaving the prison he was employed in a lumber camp, where the superintendent stated that he was considered better than the average laborer, and that he was quite industrious and performed the required work very satisfactorily. This contrasts markedly with his condition before operation.

CASE 2.—A man, aged 50, had atrophied testicles as the result of orchitis following mumps. His sexual ability was greatly impaired, leading to domestic unhappiness and divorce. One testicle taken from a Mexican, aged 27, was implanted in him in February, 1919. Five days afterward he had an erection and continued to have them nightly. He said that his general health and outlook on life were better than they had been for years. Three months after the operation the implant was reduced slightly in size. Six months afterward it became the size of a cherry, and the patient reported that sexual desire was somewhat decreased as compared to what it had been a few weeks after the operation. In November, eight and one-half months after the operation, the patient was induced to allow the implant to be removed. It was submitted to the Department of Pathology of the Medical School of Stanford University, where Dr. W. Ophuls rendered the following report: "Sections show that the testicle is entirely necrotic, the necrosis involving all epithelium and the connective tissues. In the periphery there has been a slight ingrowth of cellular connective tissue through the necrotic capsule. Considerable hematoidin in necrotic mass."

CASE 3.—H. K., aged 54, noticed declining sexual activity as well as mental languor, accompanied by testicular atrophy following a traumatic orchitis in 1916. June 20, 1919, a double testicle graft was performed, the material having been taken from a white man, aged 26. On the second and third day after the operation, there was only a tendency toward an erection, but on the fourth day there was a satisfactory one. Every night thereafter there was sexual manifestation, and four weeks afterward he had an ejaculation. No spermatozoa were found on microscopic examination. The man noticed an improvement in his eyesight. This improvement was verified by the visiting oculist of the prison, who examined his eyes several months after the operation, and compared his

findings with the patient's glass prescription of several years before. The oculist stated that there was an improvement of 50 per cent. The patient's whole attitude changed for the better. He showed more vitality and aggressiveness. He now moves more quickly, and is jubilant, whereas before he was slow and languid. Recently under erotic stimulation he has had strong erection and orgasm. A recent examination of the grafts reveals them somewhat reduced in size, and the juncture between the graft and the patient's testicle is plainly palpable. The patient has gained 45 pounds, feels fine, has continued sexual desire, and says that his strength is as good now as it was when he was 40 years old.

CASE 4.—B., aged 72, unmarried, had never had normal sexual impulses, sexual desire being almost unknown to him during his whole life. He came to prison for lewd and lascivious conduct with a minor child. His health had not been good for the last few years, and he was a frequent inmate of the prison hospital for various complaints attributable to his age. June 20, 1919, a double testicle graft was performed, the donor being an Indian boy, aged 19. The patient had an erection the third night after the operation, the first one that he had experienced for several years, according to his own statement often repeated. His general demeanor changed, and his improvement was noticeable to all with whom he came in contact. His voice became deeper and stronger, and he often gave expression to the good state of his health. This changed condition has persisted, and now after ten months he continues to feel well and vigorous, and to have frequent erections. He has not been ill or in the hospital since the operation, although for six months preceding the graft our records show that he had been in the hospital for two or three days, with some complaint, every month.

In this case there has been some sloughing from both sides of the scrotum, and numerous long strings (tubules) were expressed. Much of the graft, however, was retained. These tubules showed degeneration.

The results of testicle transplantation in the other seven cases have been somewhat similar, except that in two of them little beneficial effect was noted. One of these two experienced some improvement, but nothing so marked as in the others. In the other patient there was a change of voice from a high tenor to a low tenor, reported to us by the choir leader.

COMMENT

It has been our custom to have our patients write reports of their condition each month, and these we have on file. At first it was thought that possibly the operation alone would have the psychologic effect of their writing favorable letters, and expressing themselves as greatly benefited. But we do not think that such, if it were the case, would persist after many months, as it has in these patients. A dissatisfied patient usually does not delay long in letting the operator know about it.

The results of the sheep testes transplantation, so far, are not encouraging, although one man, aged 65, seems to have been benefited. Much of the implant sloughed out.

Judging from our limited number of cases, the transplantation of human testicles has a decidedly beneficial effect on the well-being of the patient. We do not believe that the implant lives, as demonstrated in the second case cited above.

Probably during the process of necrosis, certain bodies are given off into the lymphatics or blood stream which stimulate the patient in some unknown way.

We are unable to determine whether these beneficial effects are due to any action of the interstitial cells of Leydig or any other definite part or parts of the

testicle, although we have certain evidence which seems to show that possibly the interstitial cells have more effect than the seminiferous structures. On microscopic examinations of the testicle to be implanted

Case 11 the epithelial cells of the seminiferous tubules were vacuolated and more or less degenerated. The places the intertubular tissue was dense and cellular. There were small islands of these cells scattered about, which might have been interstitial cells. They were relatively large, with rounded nuclei. The same tissue engrafted into a eunuchoid, aged 43, caused sexual desire to appear, whereas it had not been present before.

The length of time which these beneficial effects last has not been definitely determined by our work. It is probable that it lasts more than a year. All our patients that are benefited are still enjoying this improvement.

We do not make any claim that this procedure will increase longevity. This would be hard to establish, although we feel that any one that enjoys good health and vigor, and takes pleasure in living, will outlive a person with the opposite characteristics.

As sexual manifestations are a good indicator of one's state of health, we believe, judging from these as well as other indications, that beneficial effects may be produced by testicle transplantation.

BETANAPHTHOL POISONING IN THE TREATMENT OF HOOKWORM DISEASE *

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In recent years it has been discovered that betanaphthol is useful in the treatment of hookworm disease. The dose of 0.2 to 0.5 gm., usually recommended for internal medication, has been regarded as only slightly toxic to the patient. Thymol and oil of chenopodium, the other two drugs commonly employed in the treatment of hookworm disease, have always been considered more effective than betanaphthol, but the dosage generally recommended produces toxic symptoms that are both more frequent and more severe than those caused by betanaphthol. Theoretically, betanaphthol should be a valuable addition to the anthelmintic armamentarium, if it can be proved efficacious and nontoxic.

Bayma and Alves¹ have established a new method for treating hookworm disease with betanaphthol, using larger doses than had before been employed. Their patients, treated in a hospital under careful supervision, received a preliminary saline purge and, on the next day, 6 gm. of betanaphthol in divided doses: 2 gm. every fifteen minutes until 6 gm. were taken. A final saline purge was given two hours after the last capsule of betanaphthol, on the last day of treatment. They report 85 per cent. of cures under this method, and no bad results from the large dose.

Gonzaga and Lima,² under the direction of Dr. Leiva of the sanitary service of São Paulo, Brazil, have slightly changed the Bayma-Alves treatment, to

render it more appropriate for field work on a large scale. In their method the preliminary purge is omitted, 6 gm. of betanaphthol are given (all at one time) early in the morning, and the dose is repeated for three successive days. Throughout treatment the patient receives only a light diet. Two hours after the last dose of betanaphthol, a saline purge is administered.

The report of Gonzaga and Lima is most encouraging. It states, in brief, that betanaphthol, in the heavy dosage which they used, was practically nontoxic, and was almost as efficacious as thymol—much more so than oil of chenopodium. From among 400 heavily infected cases treated by this method, 73.5 per cent. of cures were effected, and no severe toxic symptoms were encountered.

FIELD EXPERIMENTS WITH LARGE DOSES OF BETANAPHTHOL

In view of these interesting developments from betanaphthol treatments, and in order to test the efficacy and toxicity of large doses of this drug in the treatment of hookworm disease, a series of four experiments involving, in all, seventy-nine cases, was undertaken.

Experiment 1, carried on among a representative group of twenty-nine laborers (nineteen adults and ten children) on a coffee fazenda near Ribeirão Preto, São Paulo, Brazil, included nearly equal numbers of males and females. The children were between 6 and 14 years of age. The average hemoglobin of the group was 63.2 per cent. There were no cases of malaria on this fazenda, no palpable spleens among the group, none of the patients had had intermittent fever in at least ten years, and there was no record of malaria having been in the valley for many years. Gonzaga and Lima's field treatment dosage was adopted. For persons from 20 to 50 years old, one dose of 6 gm. of Mallinckrodt's sublimated betanaphthol was given on three successive mornings (with a graduated dose for children), in hard gelatin capsules with a little water. The final dose was followed after two hours by a saline purge. Symptoms produced by treatment were mild and transient; practically no vomiting occurred. A fresh specimen of urine was obtained every morning from each patient; no highly colored, bloody or smoky urine was found. The conclusion from Experiment 1 was that betanaphthol in 18-gm. doses is only slightly toxic.

Experiment 2 was carried out to obtain a larger series of cases. Nineteen adults and eleven children—Brazilians, mulattoes and negroes—on another fazenda were selected. There had been a few cases of malaria on this fazenda, in two years, and the group included two cases of severe anemia. The average hemoglobin was 69 per cent. The drug, dose and method of administration were all the same as in Experiment 1. Except for one case (Case 1), which will be discussed in detail later, no symptoms appeared as a result of treatment. Most of the patients worked in the harvest field throughout their three days of medication.

In Experiment 3, there were ten men, suffering from trachoma or other chronic eye disease, all of them field laborers from coffee fazendas in the interior of the state of São Paulo. The races chiefly represented were Italian and Brazilian. Sixty-seven per cent. was the average hemoglobin of the group, some members of which had suffered previously from malaria. The same method of treatment and the same

* From the Laboratory of Hygiene, Faculty of Medicine and Surgery, São Paulo.

1. Bayma and Alves: *Publicações do Serviço Sanitário do Estado de São Paulo*, N. S. 1: 65, 1918.

2. Gonzaga and Lima: *Publicações do Serviço Sanitário do Estado de São Paulo*, N. S. 1: 1, 1918.

dosage of betanaphthol were adopted as in the preceding experiments, but the drug was a Parke, Davis & Co. preparation, already mixed with charcoal, and put up in 0.5-gm. doses in gelatin capsules. Symptoms following treatment were extremely slight and transient. One characteristic was common to all ten cases—increase in the transitional cells. One man (Case 2, to be discussed later) suffered marked destruction of red blood cells, as revealed by blood and urine examinations.

Experiment 4 had as its chief object a careful study of the urine pigment which, Experiment 3 had shown, sometimes turned brown or black on standing. A new group of ten men received exactly the same treatment as that given in Experiment 3. Mallinckrodt's sublimated betanaphthol was used, as in Experiments 1 and 2. The symptoms following treatment, as in Experiment 3, were negligible, except in the case of one man (Case 4), whose history will be discussed later.

HISTORY OF CASES SHOWING BETANAPHTHOL POISONING

CASE 1.—As has been said, in Experiment 2 there was practically entire absence of symptoms following treatment, except in one instance: A mulatto, aged 10 years, son of a colonist on a fazenda in the far interior of São Paulo, had had severe malaria, from which he had never really recovered. He had nevertheless been obliged to work all day in the fields. When he came under observation, he was weak, pale and listless; his spleen was two finger breadths below the costal border, was firm and not tender, and his urine proved negative for albumin by the acetic acid test. The developments of this case were so striking, and in such contrast to those of the other cases in Experiment 3, that they are given in detail.

The boy was given 4 gm. of betanaphthol at 7 a. m., March 12, 1919; he had a good deal of nausea and abdominal pain, vomiting twice. During the afternoon he had three large soft bowel movements, and soon felt well enough to play about the yard. At midnight he awoke with severe abdominal pain, nausea and fever. The following morning he complained of intense abdominal pain, and vomited frequently. His abdomen was soft, except in the region of the spleen, where there was muscle spasm. The spleen, which was four finger breaths below the costal border, was very firm and tender. The pulse was slow and regular, and there was no fever. The urine was dark, but contained no fresh blood.

March 14, forty-eight hours after treatment, the condition of the boy was worse. During the night his urine had been red and scanty. A fresh specimen obtained during the morning was dark and smoky, but not blood-red. The albumin test by the acetic-acid method was strongly positive. The vomiting had stopped, but the abdominal pain had become more intense. The upper left quadrant of the abdomen had become exquisitely tender, and the muscles over this region were rigid. The lower border of the spleen could be determined only with difficulty. It was a full hand's breadth below the costal border, and was very firm.

During the next twenty-four hours the boy's condition grew much worse. He was markedly prostrated, with face drawn and pinched, and was evidently in severe pain. Lying constantly on his right side, with legs drawn up to his abdomen, he breathed rapidly in short, shallow, grunting, painful respirations. The upper left quadrant of the abdomen became so tender that he cried out when the skin over it was even touched. The other quadrants of the abdomen were not tender. The liver was not palpable, nor was there any tenderness over it. Because of the tenderness and rigidity in the upper left quadrant the spleen could not be palpated, and even percussion was unsatisfactory, although it was possible to demonstrate the lower point of splenic dulness, well below the umbilicus. The boy's temperature had risen to 39.2 C., the pulse rate was 120, and the respiration rate was 34. The conjunctivæ showed jaundice in initial stages. The urine was

dark, but not bloody. The albumin test was strongly positive. A rupture of the spleen seemed imminent.

The following day—four days after the treatment—a slight improvement had taken place. There was less abdominal pain and less prostration. The temperature had dropped to 37.5 C., and the respiration to 30; the pulse remained at 120. The respirations were still shallow, but less painful. The whole abdomen was tense, with marked rigidity of the entire upper left quadrant. Palpation of the spleen was impossible, but the upper border to percussion was in the sixth interspace in the anterior axillary line, and the lower pole was below the level of the umbilicus. The icterus had increased slightly. The urine, which contained a trace of albumin, was dark and smoky, but its color had cleared considerably during the preceding twenty-four hours.

From this day (the fourth after treatment) the boy showed rapid improvement—the icterus disappeared, the albumin in the urine cleared away, and the spleen decreased in size. A blood film taken on May 16—four days after the betanaphthol treatment—showed a remarkable picture, the chief characteristic of which was the evidence of marked regeneration of red blood cells. Every third or fourth red blood cell was very large and deeply basophilic. There were two or three normoblasts to every microscopic field (oil immersion), and the nuclei of these normoblasts were of every describable shape. The white blood cells had also increased greatly in number, giving a picture, under the low power of the microscope, of a leukemia. A differential white blood cell count showed the proportions: leukocytes, 64 per cent.; transitionals, 24 per cent.; lymphocytes, 11 per cent.; eosinophils, 1 per cent., and nucleated red cells, 17 to every hundred white blood cells. Only one myeloblast appeared, and no myelocytes were seen. No malarial parasites were encountered.

The tenderness and muscle spasm in the upper left abdominal quadrant disappeared at the end of the seventh day. On the tenth day after treatment the boy was well enough to play about the yard, although his spleen was still three finger breadths below the costal border and was slightly tender. He had lost much weight.

This case could not be followed up with a careful clinical study, for the boy lived in a valley which was many miles from the railroad, and which was accessible only by a mule trail. Thus a careful uranalysis, a count of the red and the white blood cells, and a daily differential cell count, although important and desirable, could not be made. Nevertheless, even with those data that were available, the diagnosis was clear-cut—*acute enlargement of the spleen, following erythrocyte destruction*, caused by the administration of 4 gm. of betanaphthol.

The case showed that, although betanaphthol is usually innocuous, nevertheless under certain conditions it may be very toxic, with tremendous destruction of red blood cells. The question at once arose whether blood destruction might not occur in all cases treated with betanaphthol, although perhaps not in so severe a degree as to show objective symptoms. It is a well established fact that malaria renders the blood cells more fragile in some individuals, and it seemed possible that the previous malaria in this instance might have had some bearing on the patient's reaction to betanaphthol. These were points that could not be studied under field conditions, but required hospital supervision and carefully controlled laboratory experiments. I was able to fulfil these requirements, thanks to the kindness of Dr. A. Pedroso, pathologist of the Santa Casa Hospital of São Paulo, and Dr. Pereira Gomes of the ophthalmologic section. The latter allowed me to treat the hookworm patients of his wards.

CASE 2.—In Experiment 3, it will be recalled, the symptoms were negligible in the case of all patients but one. A small, poorly nourished negro, who was in the hospital with a diagnosis of glaucoma, and whose Wassermann reaction was posi-

he, had had severe malaria two years before, but had suffered no recurrences. The preliminary urine examination was negative, and the blood examination revealed: hemoglobin, 70 per cent.; red cells, 4,900,000; white cells, 5,800; differential count: leukocytes, 70 per cent.; transitionals, 9 per cent.; lymphocytes, 13 per cent.; eosinophils, 8 per cent. The red cells were normal in appearance.

On the second day of treatment, the patient's urine, when freshly passed, was bright red, clear, acid and contained no albumin. It proved negative to a guaiac test, and gave a reduction with Fehling's solution, but not with bismuth. The sediment was negative. The original color of the urinary sediment turned to a much darker shade on standing. The following day (the last day of the treatment) a specimen of freshly passed urine was deep red, with the other characteristics of the previous day unchanged. The same dark red pigment, which did not give a guaiac test, continued to show in the urine for three more days, gradually disappearing, and apparently causing no irritation to the kidneys. One constant characteristic of this pigment—which will be discussed later—was that it turned much darker on standing.

Coincidentally with the urinary changes, a marked difference had occurred in the blood picture. Day by day the red cell count and the hemoglobin percentage were dropping, until, on day 3—the fourth day after the final dose of betanaphthol—the red cell count had been reduced from 4,900,000 to 3,000,000, and the hemoglobin from 70 per cent. to 51 per cent. The white cell count had increased, then dropped. The differential white cell count showed a marked increase in the transitional cells. Differential white cell count: leukocytes, 64 per cent.; transitionals, 14 per cent.; lymphocytes, 16 per cent.; eosinophils, 8 per cent.

The greatest changes had occurred in the red blood cells. There were large numbers of enormous, irregularly shaped, deeply basophilic red cells, many of them containing large, coarse granules. Nucleated red cells were common—one to every 100 white blood cells. No myeloblasts and no myelocytes were seen. Malarial parasites were not encountered.

Despite this marked destruction of red cells, the patient complained of nothing except thirstiness and a slight weakness. The spleen never became tender, nor was it ever palpable. The blood picture improved rapidly, and had practically resumed its former condition at the end of the fourth day, when the patient was discharged from the hospital. Chart 1 illustrates the blood picture as it changed from day to day.

CASE 3.—In Experiment 3, the patient evidenced a blood change corresponding to that in Case 2, although much less severe. The preliminary blood picture showed 67 per cent. hemoglobin, a red cell count of 4,970,000 and a white cell count of 9,900, with transitionals 9 per cent., lymphocytes 17 per cent., and eosinophils 4 per cent. The entire blood picture was: hemoglobin, 67 per cent.; red cells, 4,970,000; white blood cells, 9,900; differential count: leukocytes, 70 per cent.;

transitionals, 9 per cent.; lymphocytes, 17 per cent.; eosinophils, 4 per cent. The red cells appeared normal.

May 1, the day following the patient's last dose of betanaphthol, the blood picture was: hemoglobin, 62 per cent.; red blood cells, 3,800,000; white blood cells, 8,000; differential count: leukocytes, 63 per cent.; transitionals, 14 per cent.; lymphocytes, 11 per cent.; eosinophils, 12 per cent.

The red cells occasionally showed very large, irregularly shaped erythrocytes, some of which were stippled, and some deeply basophilic. Three normoblasts were seen. The increase in transitionals—as compared to the condition in the original blood picture—is to be noted. This was a characteristic that was common to all ten cases in Experiment 3.

This day, May 1, proved to be the turning point, for the blood rapidly resumed its normal characteristics, so that eight days after treatment it presented a picture practically identical with the one seen in the preliminary examinations.

The urine in this case never contained red pigment, although it turned dark brown on standing. Albumin and guaiac tests in the urine proved negative, but Fehling's solution was reduced during the three days of treatment. The boy had no symptoms whatever during the treatment.

CASE 4.—The one case in Experiment 4 in which symptoms were marked was that of a negro, aged 35, who was in the hospital for a cataract operation. Although he had never fully recovered his strength since a malaria attack six years before, his general condition at the time of examination was good. The urine proved negative, the spleen was not palpable, the red blood cells appeared normal, and no malarial parasites were seen. Chart 2 shows the detailed changes in the red cells, white cells and hemoglobin from the time of first treatment until more than two weeks later.

The patient's condition at the time of preliminary examination was good—urine negative, spleen not palpable, red blood cells normal in appearance, and no parasites to be seen. The hemoglobin was 73 per cent., red blood cells were 4,400,000, white blood cells, 10,800, leukocytes 62 per cent.,

and eosinophils 11 per cent. May 13, the first medication—6 gm. of Mallinckrodt's betanaphthol—was given, and resulted in some nausea and vomiting. May 14, the patient's condition being normal, the dose was repeated. That same day, the man felt very ill—his symptoms including severe headache—and he continued so all through the night.

The following morning, May 15, he was prostrated; the pulse was weak (96), and the temperature was subnormal (36.8 C., or 98.2 F.). Icterus had begun, and the spleen was readily palpable. The urine was thick, black and viscid, and albumin and guaiac reactions were strongly positive. The blood was thick and viscid, and the red blood cells were badly broken. It will be noted, by reference to the chart, that on this day (May 15) the high point (81 per cent.) was reached by the hemoglobin, and that for the next five days the hemoglobin percentage dropped steadily, until it reached the low point (17 per cent.), May 20. May 16, the patient was worse. The urine was dense, purple and sticky, with a

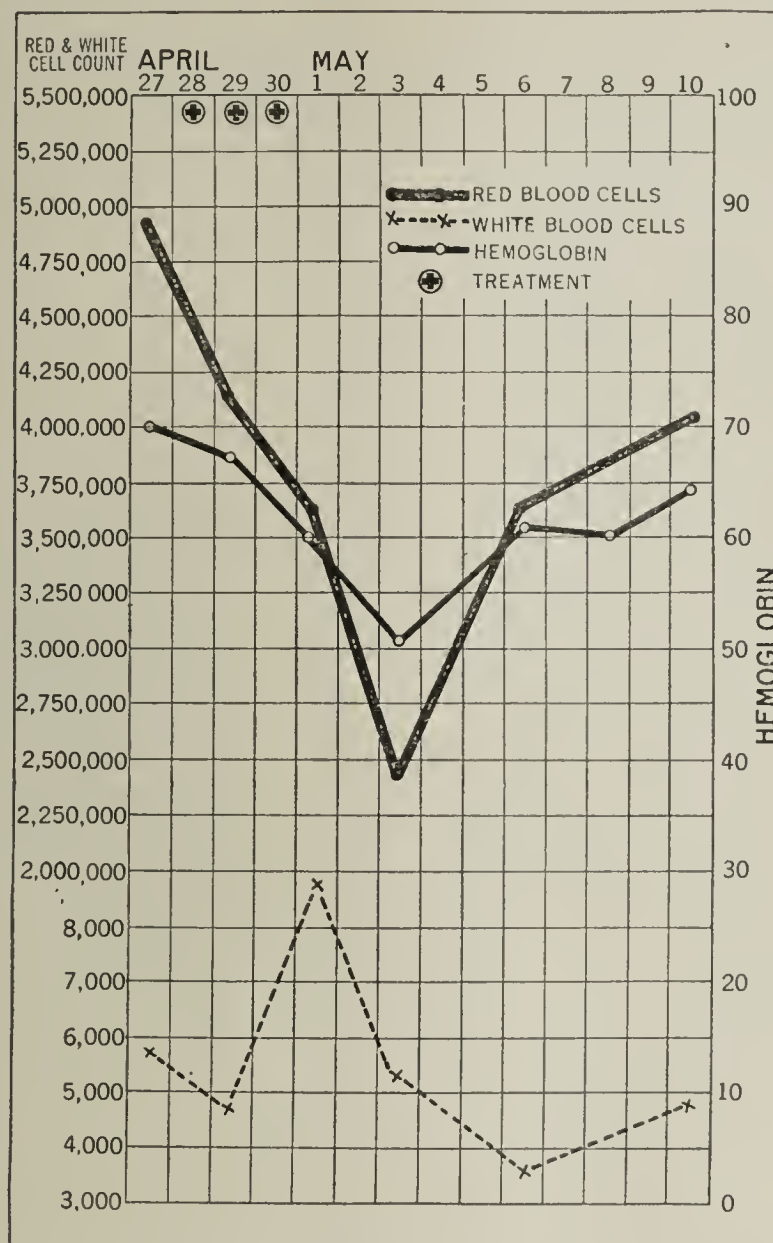


Chart 1.—The blood in Case 2.

heavy, gray sediment; vomiting was persistent, the icterus had deepened, the spleen was enlarged, and the abdomen in the region of the gallbladder was very tender. The hemoglobin index and the red cell count were falling rapidly.

May 18, the patient's condition grew desperate, the only encouraging feature being practically entire elimination of destroyed red cells from the blood. Hemoglobin was only 22 per cent. and red cells numbered only 1,500,000. A stool, obtained by enema, was a coal-black mass, sticky and viscid. May 19, the low point was reached by the red blood cells; the icterus had deepened slightly; the gallbladder was still tender; and there was a low grade fever of 38 to 38.5 C. (from 100.4 to 101.3 F.). The blood picture was improving rapidly, however, and the urine was quickly clearing.

From May 20—seven days after the first dose of betanaphthol—a slow, gradual improvement began, as evidenced by clearing of the urine, lessening of the icterus, and decrease in the size of the gallbladder, liver and spleen. By May 22, the hemoglobin had increased to 22 per cent., and the red blood cells to 1,600,000, with the differential proportions unchanged. The spleen was not palpable, and the gallbladder was readily felt but still tender.

May 29—two weeks after the betanaphthol was administered—the patient was improving slowly. There was still nausea, but the icterus had gone, and the urine was negative. The gallbladder was still palpable. A blood picture showed the red cells to appear, generally speaking, entirely normal. The most striking feature was the diminution in the proportion of lymphocytes. They had dropped from 15 per cent. (the original picture) to 7 per cent., having declined steadily throughout the period in question.

CONCLUSIONS

The four experiments prove that betanaphthol in 6-gm. doses, given on three successive days, may produce a severe toxic effect similar to that caused by benzol (benzene, C_6H_6), in that it specifically attacks the red blood cells. In the four cases of betanaphthol poisoning reported, while the symptomatology varied greatly, the essential pathology common to all cases was simply a destruction of red blood cells with, perhaps, in the severe cases a destruction of the blood-forming cells in the bone marrow. It is hard to explain how the betanaphthol destroys the red blood cells, and why seventy-five of the cases which I treated showed no symptoms, while four became victims of the drug's toxic action. Comparison of the cases and of their history previous to the betanaphthol treatment would certainly seem to indicate, first, that the intoxication shown by the poisoned cases was not due to their greater intestinal absorption of the drug; second, that the size of the dose was not proportionate to the degree of intoxication, and third, that the degree

of previous anemia in the patient apparently had nothing to do with the toxic effect of the drug. The experiments also showed that the drug had little or no effect on normal kidneys. In certain cases, to be sure, there was much albumin in the urine, with many casts; but this condition was due to the elimination of the waste products from the blood.

Finally, the following definite conclusions concerning the toxic action of betanaphthol were arrived at as a result of the experiments that have been described:

1. Large doses of betanaphthol (18 gm. for adults) used in the treatment of seventy-nine cases of hookworm disease produced very severe toxic symptoms in two cases, and also produced marked changes in the blood cells of two other cases.

2. The toxic action of betanaphthol in these four cases was a destruction of the red blood cells. The drug selected the red blood cells and destroyed them in great numbers, with resultant severe anemia, icterus, enlargement of the spleen and liver, enlargement of the gallbladder and hemoglobinuria. The white blood cells apparently were not destroyed by the drug. The liver, spleen, kidneys and other organs of the body were not affected primarily, but were markedly affected secondarily, because of the anemia, and because of the injurious effects produced by the elimination of large numbers of destroyed red blood cells.

3. The type of cases that are most susceptible to the toxic action of betanaphthol poisoning has not been determined. In all three of the severe cases of poisoning there was a history of recent malaria. It is probable that those cases in which the red blood cells are rendered more fragile

by recent malaria are more susceptible to betanaphthol poisoning.

4. Betanaphthol, in 18-gm. doses, is so toxic that it cannot be recommended for general use in the treatment of hookworm disease.³

3. In addition to the references already given, these will be found of interest: Salkowski: *Ztschr. f. physiol. Chem.* **15**, 1891. Bunting: *Johns Hopkins Med. Bull.* **16**: 222, 1905.

Good Government.—The first essential in good health government is a general and a clear understanding of what should constitute the more important duties in health administration of our three primary divisions of government, to wit, federal, state and county, and how these three divisions should cooperate or be related in the improvement of the public health.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents*, 1919.

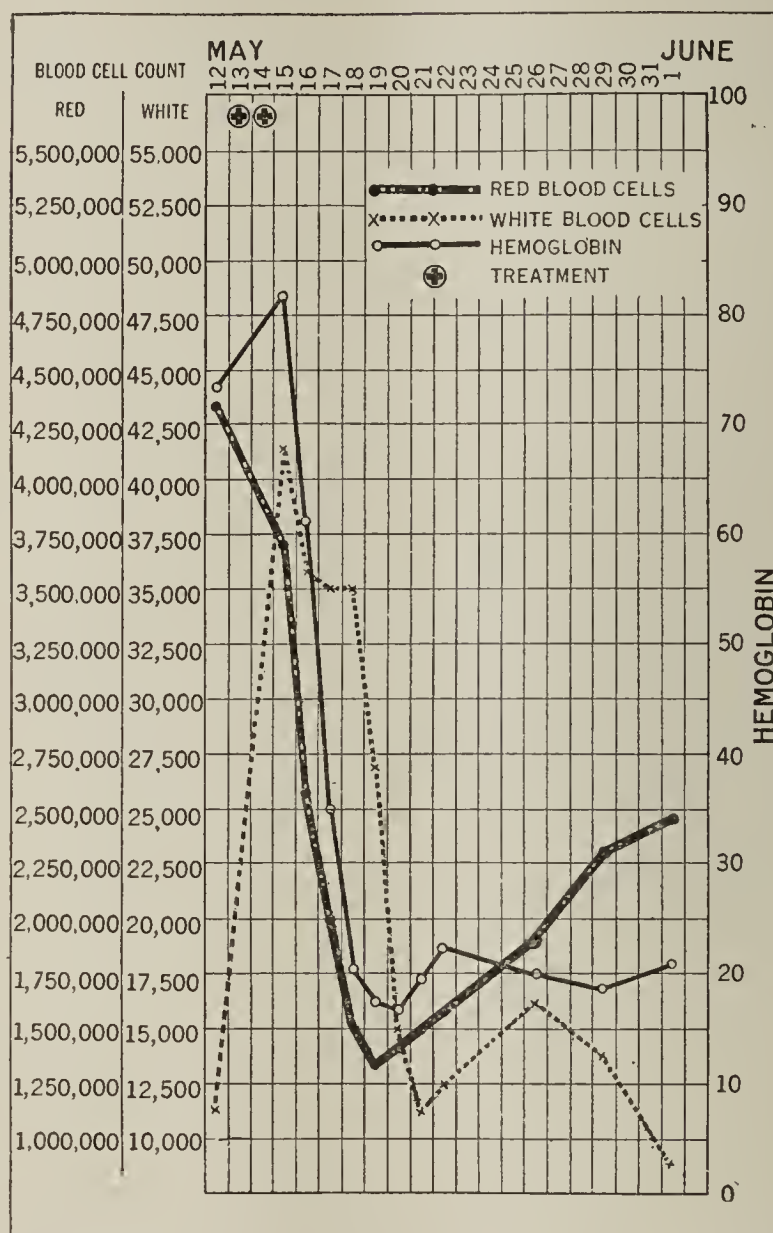


Chart 2.—The blood in Case 4.

A CARDIOVASCULAR RATING AS A
MEASURE OF PHYSICAL FATIGUE
AND EFFICIENCY*

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The need of a measure for physical efficiency whereby degrees of fatigue, physical fitness and health may be determined has been felt alike by the medical profession and instructors in physical education and school hygiene. Of late, the newly awakened interest in industrial efficiency has shown that we lack satisfactory and reliable tests of fatigue. Experience with the aviator during the war also emphasized the need for some easily applied reliable physical efficiency test. Some aviators gradually underwent physical and nervous deterioration, the result of the wear and tear of the air work, or sometimes of dissipation, which made them less reliable in handling the aeroplane and frequently ultimately led to a crash. These aviators sometimes developed a disinclination to fly, but would not confess it because of the fear of being considered "yellow." To single out such men, the flight surgeon required the aid of a dependable test.

Unquestionably, the most satisfactory test for fatigue and loss in physical fitness would be one that eliminates the "personal equation" of the examiner and the anxiety and dishonesty of the patient. Replies to questions concerning symptoms and habits are often misleading because of a preformed opinion by the examiner or because the patient is incapable of self-analysis and accurate description of his experiences. Furthermore, for personal reasons some men would prefer to mislead the examiner, and the test should not, therefore, demand much cooperation and attention from the patient.

The functional changes of the body brought about by regular physical training give the basis for a number of physical efficiency tests. The attention of trainers and athletes, as well as of physiologists, has naturally been directed to these. A brief review of the conclusions regarding the physiologic changes which occur as a result of improved physical condition will suggest possible tests for degrees of health and fitness.

Certain differences between active and inactive animals throw light on these functional variations. The wild hare, which lives an active life in the open, and the wild rabbit, which lives an inactive life in seclusion and does not venture far from its burrow, have been compared by Dreyer¹ of Oxford University. He found that a wild hare has double the blood volume, 30 per cent. more hemoglobin and three times more heart muscle than a wild rabbit of the same weight. The rate of heart beat of the wild hare is about 68, and of the wild rabbit about 200 per minute. The respiration rate of the hare is between 18 and 20, and of the rabbit about 50 per minute. Furthermore, the meat of the hare is dark, and that of the rabbit light in color. No doubt, similar differences exist between an athlete and a sedentary worker, and there is reason to believe that these functional differences vary to some extent as the health and fitness of the individual person vary.

The cardiovascular changes during altered physical fitness have been studied most, and it is these that are

considered in this paper. The tests here discussed should not be confused with functional heart tests. We are concerned with the cardiovascular changes only so far as they give evidence of fatigue and health changes in the body.

THE PULSE RATE AS A CRITERION OF HEALTH

(a) *The Postural Rates.*—Cook and Pembrey,² while finding considerable variation in the pulse rate of different healthy individuals, showed, however, more frequently a slow rate in men trained for muscular work. From his extensive experience, Meylan³ concluded that a horizontal posture pulse rate between 40 and 80 and a vertical posture rate between 50 and 90 were favorable health signs. McCurdy,⁴ from a study of boys passing through the adolescent changes, decided that the heart rate serves as a fair indication of condition; a high heart rate indicates poor condition, and a heart rate with wide variations between the horizontal and standing positions suggests a poor vascular adjustment.

During repeated periods of training of a single subject, Dawson⁵ found that training slowed the resting pulse rate as much as 9 beats per minute and that this especially influenced the noon and afternoon pulse. Thus the form of the diurnal curve was slightly altered. He also found that acute infection caused an increase in the pulse rate, but this was much less pronounced in the trained than in the untrained man. In young men, the normal average pulse rate has been reported to be 78.9 standing, 70.1 sitting and 66.6 lying. The continued practice of some form of exercise, such as rowing, extending over a period of years may progressively lower the rate of heart beat. Thus Michell⁶ found the average rate of the athlete's pulse during the first year of training was 69, in the second year, 64.5 and in the third year, 56.8. According to Lindhard,⁷ not only is the pulse less frequent, but the output of the heart per minute is slightly larger in the trained than in the untrained man.

All available evidence indicates that with improvement in physical fitness the heart beats less frequently and more efficiently. It follows, therefore, that the pulse rates in the reclining and standing postures may at times give useful hints as to the degree of fitness and health. That the altered physical condition may not be evidenced by pulse rate changes in both of these postural positions was demonstrated by Boney,⁸ who found in some tired, listless, depressed and fatigued patients that the pulse rate was normal while lying down but was abnormally rapid on standing; in several the standing rate was as high as 130 or 140 beats per minute.

(b) *Pulse Rate Increase on Standing.*—The difference between the pulse rates in the standing and reclining postures has been found to be a useful index of physical fitness. According to Vierordt,⁹ the average postural increase is from 12 to 14 beats. Crampton¹⁰ reported that in vigorous subjects the heart rate may not increase on standing, while in wearied subjects it may increase as much as 44 beats per minute. Meylan³ believes a standing increase of not more than

2. Cook and Pembrey: J. Physiol. **45**: 438, 1913.

3. Meylan: Am. Phys. Educ. Rev. **18**: 441, 1913.

4. McCurdy: Am. Phys. Educ. Rev. **15**: 421, 1910.

5. Dawson: Am. J. Physiol. **50**: 443 (Dec.) 1919.

6. Michell, cited by Flack, M., and Hill, L.: Text-Book of Physiology, New York, Longmans, Green & Co., 1919, p. 216.

7. Lindhard: Arch. f. d. ges. Physiol (Pflüger's) **161**: 233, 1915.

8. Boney: Brit. M. J. **2**: 645, 1916.

9. Vierordt: Anatomische, physiologische und physikalische Daten und Tabellen, Jena, G. Fischer, 1906, p. 235.

10. Crampton: Proc. Soc. Exper. Biol. & Med. **12**: 119, 1915.

* From the Medical Research Laboratory, Air Service, Mitchel Field, Long Island, N. Y.

1. Dreyer, cited by Flack, M., and Hill, L.: Text-Book of Physiology, New York, Longmans, Green & Co., 1919, p. 79.

16 beats is a favorable sign of physical efficiency. Parkinson¹¹ recently reported that in twenty healthy soldiers an average increase of 10 beats was noted when the recumbent and standing rates were compared. Geigel¹² considers that a variation of more than 30 between lying and standing pulse rates indicates weakened heart function. It is now recognized that in states of debility the postural difference may be as much as from 30 to 50 per minute. A slow horizontal and a slow vertical postural pulse rate with a small difference between the two are usually signs of excellent health.

(c) *Exercise Pulse Rate.*—According to Bowen,¹³ the rapidity of the pulse during exercise is chiefly determined by (1) the speed of movement; (2) the resistance encountered; (3) the condition of the individual, and (4) age. He¹⁴ also pointed out that pulse rate counts made after exercise are worthless for comparison, unless the count is made at exactly the same period in each case, and the subject is placed in exactly the same position and assumes the same degree of relaxation and repose.

The increase in the pulse rate after a certain amount of work is greater in an untrained than in a trained person. Hartwell and Tweedy,¹⁵ comparing athletic and nonathletic women, found that running up and down stairs accelerated the heart rate an average of 10 beats more in the nonathletic women. Cotton, Rapport and Lewis¹⁶ believe that the average height to which the pulse rate is raised at the cessation of effort may be taken as a gage of the degree of distress produced, and that the amount of distress is determined by the degree of health. Similar conclusions have been reached by many students of the effects of exercise on acceleration of the pulse rate.

(d) *The Decline in Pulse Rate After Exertion.*—A widely recognized sign of physical condition is the time required by the pulse rate to return to normal after effort. Flack and Bowdler,¹⁷ from a study of the reactions following stepping on a chair five times in fifteen seconds, conclude that the heart rate in the healthy subject should not increase more than 25 beats and should return to normal within thirty seconds. Meakins and Gunson¹⁸ report that after a climb of twenty-seven steps at a brisk walk, the pulse rate returned to normal within one minute in healthy subjects, while in patients it required as much as five minutes.

It should be emphasized that while the several pulse rate criteria of fitness may all be found in a single person, not one or even any two of them is found to be an absolute test. In forming a judgment as to the physical condition of a man it is best to consider together the postural rates, the increase on standing and after exercise, and the time required for the rate to return to normal after exercise.

THE ARTERIAL BLOOD PRESSURE AS A CRITERION OF CONDITION

(a) *The Normal Arterial Pressures.*—Although the arterial pressures have received much attention, the determination of the pressures of a person at rest

offers little of value in estimating the physical condition of the young man. Meylan³ considers systolic pressures for the horizontal posture between 110 and 140, and for the vertical position between 110 and 150 mm. of mercury as favorable signs. Dearborn¹⁹ believes that adequate physical training raises the blood pressure. He obtained an average of 114 in trained and 108 in untrained women. Dawson⁵ has recently shown that the effect of training on the resting blood pressure is neither striking nor constant. Bainbridge²⁰ has written that "the systolic arterial pressure, according to most observers, is not higher during rest in trained than in untrained men."

Opinion as to the value of the diastolic and pulse pressures is not as clearly crystallized as it is regarding the systolic pressure. Hypotension in systolic or diastolic pressure occurs in weak patients.

(b) *The Postural Changes in Arterial Pressures.*—The hydrostatic effects of posture and the manner in which the splanchnic vasomotor mechanism compensates for these are well known. Normally, when man changes from the reclining to the standing position, the splanchnic vasomotor tone overcompensates the hydrostatic effects of gravity. In normal subjects the systolic blood pressure is about 10 mm. higher in the standing than in the recumbent posture. Erlanger and Hooker²¹ found that on standing there might be either a slight rise or fall in the brachial systolic pressure. According to Hill,²² any influence which weakens the splanchnic vasomotor mechanism interferes with the compensation. Sewall²³ has shown that individuals in whom there is excessive gravitation of the blood to the limbs and splanchnic area on standing are victims of physical weakness and nervous instability and often suffer from headache, dizziness or tinnitus in the erect posture. That the systolic pressure falls in persons weakened by dissipation, overwork, lack of sleep, or disease was recognized by Crampton in his "blood ptosis test" for physical fitness. Crampton¹⁰ demonstrated that a subject might, when standing, show weakness by a decrease in the systolic pressure or by a large increase in the heart rate. Recently, Sewall²³ has pointed out that a weakened patient on standing may fail to show the systolic drop, but instead may have an inordinate rise in diastolic pressure. He employs this rise in diastolic pressure and low levels of pulse pressure as measures of fitness.

MEANS OF MEASURING PHYSICAL EFFICIENCY

The foregoing observations on the cardiovascular changes that occur with training and with weakness suggest means of measuring fatigue, staleness and weakness. A pulse rate more rapid than the average in the reclining and standing postures, a large acceleration on standing and after exertion, a slow return to normal after exercise, and a systolic pressure that fails to rise, but falls when the subject stands, indicate fatigue or weakness.

In 1913 and 1914, three physical efficiency tests were reported that used some or all of these changes. Crampton's¹⁰ "blood ptosis test" is a vasomotor efficiency test that is intended to show the beneficial or depressive effect of various conditions supposed to affect the health. It takes account of the differences between the pulse rates and the systolic pressures in

11. Parkinson: *Heart* 6: 317, 1917.

12. Geigel: *Deutsch. Arch. f. klin. Med.* 99: 1028, 1906.

13. Bowen: *Am. Phys. Educ. Rev.* 8: 8, 1903.

14. Bowen: *Am. Phys. Educ. Rev.* 8: 232, 1903.

15. Hartwell and Tweedy: *J. Physiol.* 46: 9, 1913.

16. Cotton, Rapport and Lewis: *Heart* 6: 269, 1917.

17. Flack and Bowdler: *Reports of the Air Medical Investigations Committee*, London, No. 2, 1918, p. 12.

18. Meakins and Gunson: *Special Report of the Medical Research Committee*, London, No. 8, 1918, p. 27; *Heart* 6: 284, 1917.

19. Dearborn: *Am. Phys. Educ. Rev.* 20: 337, 414, 1915.

20. Bainbridge: *Physiology of Muscular Exercise*, New York, Longmans, Green & Co., 1919, p. 142.

21. Erlanger and Hooker: *Johns Hopkins Hosp. Rep.* 12: 145, 1904.

22. Hill: *J. Physiol.* 18: 15, 1895.

23. Sewall: *Am. J. M. Sc.* 158: 786, 1919.

horizontal and vertical postures. The usual range of systolic pressure variation is from +10 to -10, and the heart rate increase from 0 to 44. It was determined that a decrease of 1 mm. in systolic pressure is equivalent to an increase in heart rate of approximately 2 beats. By statistically balancing the ranges of systolic pressure and pulse rate and assigning equal percentages to equal ranges, a percentage scale of fitness was established.

Meylan,³ although not attempting to evaluate, finds that efficiency may be judged by (1) general condition as shown in weight, color of skin and general appearances such as firm, vigorous muscles; (2) pulse rate in the horizontal and vertical positions; (3) systolic blood pressure in the horizontal and vertical positions, and (4) heart reaction after the exercise of hopping 100 feet. Favorable signs were considered to be a horizontal pulse rate between 40 and 80, a vertical rate between 50 and 90, and a standing increase of not more than 16; a horizontal blood pressure between 100 and 140, and a vertical pressure between 110 and 140, with a difference of 10 or more; an exercise increase in pulse rate of less than 100 per cent. and a recovery of more than 80 per cent. in a minute.

Foster's²⁴ efficiency test made use of the standing pulse rate, the rate immediately after running in a fixed place for exactly fifteen seconds at the rate of 100 steps per minute, and the rate forty-five seconds after the work ceased.

Crampton's test was employed with the aviators at Hazelhurst Field, but was found to be unsatisfactory because of the fact that physical deterioration may be manifest in various ways in the cardiovascular mechanism. The test neglects four of the available factors. A similar criticism may be made of Foster's method. A statistical study of several hundred cases led to the abandonment of both of these methods.

POINT SYSTEM FOR GRADING CARDIOVASCULAR REACTIONS

When it becomes necessary to weigh data from six sets of observations, it is difficult to evaluate them properly and to avoid giving undue weight to a single factor. If it is true, as it seems to be, that weakness may show itself differently in individual cases, then a centering of the attention only on the postural systolic blood pressure changes or on the amount of acceleration of the pulse rate in exercise would result in the overlooking of some cases of weakness. In order to avoid the disposition to stress one or two of the factors that give evidence of physical deterioration, and to recognize equally all six factors, we have devised a system of scoring the tests wherein each of the cardiovascular changes is rated according to a scale that evaluates the condition or change. The grading of performance must of necessity be arbitrary and, therefore, is held by some to be objectionable. Nevertheless, as was stated earlier, the "personal equation" of the observer often weighs too heavily where comparisons are made. A mathematical system of grading can in large measure eliminate the personal factor.

The scoring scheme we have used recognizes that fatigue or derangement may be evidenced in the high heart rate during reclining, during standing; in the number of beats the heart rate increases when the standing and reclining postures are compared; in the acceleration in the pulse rate after exercise; in the

time taken by the pulse to return to normal, and, lastly, in the rise or fall in the systolic blood pressure on standing. This scheme uses in part a plan proposed by Dr. J. H. McCurdy for rating infantry men in cardiovascular and neuromuscular efficiency. The scores for each of the six items range from +3 to -3. A perfect score, the sum of the value given to each of the six items, is 18. The values as assigned appear in Table 1, Parts A, B, C, D, E and F. In using the table for scoring, Parts A and B, also C and D, must always be used together. Thus, if an individual has a pulse rate increase of 15 beats (see Part B) on standing and his reclining rate was 60 (see Part A), he is graded 3 on his standing increase. However, if his reclining rate had been 100, then a standing increase of 15 would have been scored 0.

PROCEDURE IN MAKING OBSERVATIONS

1. The patient reclines for five minutes. (a) The heart rate is then counted for twenty seconds. When two consecutive twenty second counts are the same,

TABLE 1.—POINTS FOR GRADING CARDIOVASCULAR CHANGES

A. Reclining Pulse Rate		B. Pulse Rate Increase on Standing				
Rate	Points	0-10 Beats, Points	11-18 Beats, Points	19-26 Beats, Points	27-34 Beats, Points	35-42 Beats, Points
50-60	3	3	3	2	1	0
61-70	3	3	2	1	0	-1
71-80	2	3	2	0	-1	-2
81-90	1	2	1	-1	-2	-3
91-100	0	1	0	-2	-3	-3
101-110	-1	0	-1	-3	-3	-3

C. Standing Pulse Rate		D. Pulse Rate Increase Immediately after Exercise				
Rate	Points	0-10 Beats, Points	11-20 Beats, Points	21-30 Beats, Points	31-40 Beats, Points	41-50 Beats, Points
60-70	3	3	3	2	1	0
71-80	3	3	2	1	0	0
81-90	2	3	2	1	0	-1
91-100	1	2	1	0	-1	-2
101-110	1	1	0	-1	-2	-3
111-120	0	1	-1	-2	-3	-3
121-130	0	0	-2	-3	-3	-3
131-140	-1	0	-3	-3	-3	-3

E. Return of Pulse Rate to Standing Normal after Exercise		F. Systolic Pressure, Standing, Compared with Reclining	
Seconds	Points	Change in Mm.	Points
0-60.....	3	Rise of 8 or more	3
61-90.....	2	Rise of 2-7.....	2
91-120.....	1	No rise.....	1
After 120: 2-10 beats above normal	0	Fall of 2-5.....	0
After 120: 11-30 beats above normal	-1	Fall of 6 or more	-1

this is multiplied by 3 and recorded. The score is noted according to Part A, Table 1. (b) The systolic blood pressure is next taken by auscultation; two or three readings are made as a check.

2. (a) The patient stands at ease for one or two minutes to allow the pulse to assume a uniform rate. When two consecutive twenty second counts are the same, this is multiplied by 3 and recorded. The score is obtained by use of Part C, Table 1. The difference between the standing and reclining pulse rates is scored then by use of Part B, Table 1. (b) The standing systolic pressure is next taken. The difference between this and the reclining systolic pressure is then scored by Part F, Table 1.

3. The patient next steps on a chair about 18 inches high, five times in fifteen seconds timed by a watch. To make this test uniform, he stands with one foot on the chair at the count one; this foot remains on the chair and is not brought to the floor again until after the count five. At each count he brings the other foot on the chair and at the count "down" replaces it on

24. Foster: Am. Phys. Educ. Rev. 19: 632, 1914.

the floor. This should be timed accurately, so that at the fifteen second mark both feet are on the floor. (a) Immediately, while he stands at ease, the pulse rate is counted for fifteen seconds; this is multiplied by 4 and recorded. (b) Counting is continued in fifteen second intervals for two minutes, record being made of the counts at 60, 90 and 120 seconds.

The data from *a* will be scored by Part D, Table 1, taking the difference between this exercise pulse rate and the standing rate. The data in *b* are scored according to Part E, Table 1.

This system of scoring men as to physical fitness is now being used by flight surgeons in their work among aviators, and is applied at the Medical Research Laboratory at Mitchel Aviation Field on Long Island.

That there may be value in assembling the circulatory data under such a point system is indicated from an analysis of fifty-four cases of aviators who, when examined by the medical officers of the departments of the laboratory, were found to be ailing and physically below standard. The medical examinations included an overhaul by the internist, neurologist, ophthalmologist, and ear, nose and throat expert. The medical findings include a large variety of conditions, the majority being common to any group of men and in no way characteristic of aviators.

That which was of greatest interest in this analysis was the final efficiency score of each patient. The distribution of the cases is shown in Table 2.

TABLE 2.—EFFICIENCY SCORE IN FIFTY-FOUR CASES

	Points	No. of Cases	Per Cent.
	0 or less.....	2	3.7
From	1 to 3.....	9	16.6
	4 to 6.....	15	27.8
	7 to 9.....	22	40.7
	10 to 12.....	3	5.6
	13 to 15.....	3	5.6
	16 to 18.....	0	0.0
	Total.....	54	100.0

Only six of the fifty-four cases had a score of 10 or better, while 88.8 per cent. had scores ranging between 9 and —1. These figures seem to indicate that a score of 9 or less is characteristic of physically unfit men.

On the assumption that a score of 9 or less gives indication that the clinician may find something wrong with the patient, we have listed all men among a group of 150 men who had a low score. In this group there were forty-six who scored 9 or less.

The medical examiners working independently, and without the cardiovascular data available to them, recorded abnormal conditions in thirty of the forty-six men. Thus, when working independently, 65.2 per cent. of the group of forty-six with low scores by the cardiovascular efficiency test were found by others to be below standard. Two of the men were unfit because of excessive smoking, and one had recently been on a drunken spree. The neurologist reported five as stale and nervously unbalanced, the internist alone found five unfit, six were tonsil or local infection cases, and the remainder were found wrong by at least two of the medical departments.

This point system of scoring men as to health and physical fitness by the cardiovascular reactions is easily applied. It has the advantage of stimulating men to attempt to improve the score by exercise and proper living. It is suggested that a score of 9 or less

gives reason for an overhaul of the patient by a clinician. Aviators with a low score might well be called back for further examination and observation. A poor score suggests a search for a cause. The cause may be disease or unhygienic living.

THE DIAGNOSIS AND PROGNOSIS OF LOSS OF VISION FROM ACCESSORY SINUS DISEASE*

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Having for the past three years made a study of blindness originating in the accessory sinuses, I wish to present some of the results, which may be of interest to the profession and possibly of some benefit to humanity. The question has been asked many times: what findings warrant operative interference: in other words, how to arrive at a correct diagnosis. This paper is devoted to this phase of the subject, although some space is given to the prognosis.

There are various types of accessory sinus blindness, some of which will recover spontaneously, while others will result in permanent loss of vision unless prompt and proper attention is given. Etiologically they are generally divided as: (1) those due to a direct spreading of the infection to the sheath of the optic nerve; (2) those due to the toxemia from infection in the sinuses; and (3) those due to hyperplasia.

It is usually easy to diagnose the first two types either from inspection or from the roentgenograms although pus not possible to detect previously is occasionally found on operating. As the nasal and roentgen ray examinations are frequently negative in the third, the hyperplastic, type, when the middle turbinate is not involved, the diagnosis is much more difficult. The same line of reasoning, however, is equally applicable to all when a definite diagnosis cannot be made.

Hyperplasia has been defined as a rarefying osteitis associated with inflammatory swelling and fibrous thickening of the mucous membrane lining the accessory sinuses. Its pathology has always seemed to me rather obscure. Many specimens have been sent to the laboratory, but nothing of interest has been discovered. Dr. Verhoeff, the pathologist, says that they are more or less traumatized in removal, and when they are decalcified whatever changes may have occurred seem to be destroyed. In one of the last cases, for example, the posterior ethmoid was filled with a thick, gelatinous looking membrane, which I was able to remove entirely. It was carefully handled and sent to the laboratory, apparently in good condition, and I had high hopes of getting some valuable information; but the report, as usual, was negative. Dr. Sluder sent many of his specimens to Dr. Jonathan Wright, who was able to build up from these and some of his own a fairly consistent explanation of the process taking place in hyperplasia; but even he, at the end of his discussion, said

It would probably be difficult to find an adult individual in a temperate or cold climate who does not present an example of this bone change within his nasal chamber which I have a right to call pathological. It is only exceptionally that the symptoms to which it gives rise are sufficient to cause him to seek relief.

* Read before the Section on Laryngology, Otology and Rhinology, the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

From the foregoing it is readily seen that many of these cases have a condition so elusive as to be difficult of detection either microscopically or macroscopically. In looking into these noses one is disappointed in not finding much, if anything, pathologic. A most careful inspection of the size and position of the middle turbinate should be made, as it will frequently be found to be normal anteriorly but to widen posteriorly. The position of the nasal septum is also of importance in its posterior aspect, as the middle turbinate is frequently wedged between it and the ethmoidal wall. In many of these cases there will be found some slight obstruction to the drainage from the posterior sinuses. The changes are, however, difficult to detect, and negative reports have been given by very good rhinologists even when a markedly pathologic condition was found on operating. It is always a disappointment to the ophthalmologist when pus cannot be found and the roentgenograms are negative. It is difficult to convince some that there is such a thing as hyperplasia; but case after case has demonstrated that pressure sufficient to cause atrophy of the nerve can take place in a nose that on both inspection and roentgen-ray examinations showed practically nothing abnormal.

Toxemia is frequently the cause of blindness, and its origin should be carefully investigated before advising the opening of the sinuses. Teeth, tonsils, accessory sinuses, intestinal autointoxication, alcohol, tobacco, syphilis, etc., must all be considered. An interesting illustration of the necessity of this occurred in the clinic at the infirmary, when I was hurriedly called to examine a nose in a case of recent loss of vision. In questioning the patient it was learned that one of his friends in the furniture business had given him some alcohol with which to rub his chest. The alcohol was found to be of the wood variety, and the vision returned after its discontinuance.

The possibility of the loss of vision being due to pituitary disease must likewise be considered, and careful study made of the plates of that region. I have seen at least a dozen of these cases. Two were malignant. In a third there had been a complete bilateral ethmoid and sphenoid exenteration, which could have been avoided had the plates been inspected. It has been my practice to have each case thoroughly investigated; that is, to have a medical, neurologic, dental, Wassermann and roentgen-ray examination in addition to the ophthalmologic. If these findings are negative and the condition of the eye is unimproved or becoming progressively worse, I advise the immediate removal of the middle turbinate and the opening of the posterior accessory sinuses.

While it is a source of satisfaction to operate on patients with a marked nasal pathologic condition, nevertheless one should realize that unless some definite explanation for the loss of vision can be found elsewhere, its most probable origin is in the sinuses. The diagnosis of accessory sinus disease in cases of practically negative nasal findings is largely made by exclusion.

THE PROGNOSIS

It is well known that cases of blindness from accessory sinus disease recover spontaneously. Four of my patients have told of previous attacks in which the eye was blurry for two or three days and the vision defective, but from which they recovered without treatment. One of them had a second attack a year

later and delayed so long before seeking advice, expecting the eye to recover as before, that optic atrophy resulted. Thus it is unfortunate in a sense that these cases tend to recover spontaneously, as permanent injury may result while waiting. This is especially true when there is complete loss of vision.

There are two factors that enter largely into the prognosis: (1) the question of time before the patient seeks relief, and (2) the question of the degree of blindness. As to the question of time, I have endeavored to determine from the cases studied how long an interval could elapse beyond which there would be danger of permanent impairment of vision—in other words, how long one can treat or watch a case before advising operative interference.

The chronological summary shows this.

In the twenty-five cases tabulated, two patients recovered under local treatment, one of four days' duration with vision 20/40, and the other of four months' duration with vision 20/70 (Cases 3 and 20).

Five operations were performed within the first week and normal vision was obtained in all (Cases 2, 9, 9a, 9b and 17).

Of the five patients operated on within two weeks, two recovered with normal vision, two with vision 20/20—but slight pallor of the nerve, and one with a vision of fingers at 6 inches and optic atrophy (Cases 5, 7, 18, 24 and 25).

In the four cases in which the patients were operated on between the second and fourth weeks, normal vision, but with some pallor of the disk, was obtained in one. The others, however, were all improved (Cases 14, 15, 18 and 19).

Four patients were operated on between the first and second months. One recovered with normal vision, another with 20/20—and some pallor of the disk. In the other two there was optic atrophy with no improvement in one and but slight improvement in the other (Cases 4, 6, 8 and 22).

Of the five cases of over two months' duration there was no improvement in two. In the other three the improvement was so slight it was almost negligible (Cases 10, 12, 13, 16 and 21).

From the foregoing summary one can say with some degree of assurance that unless a case shows improvement under treatment before the end of a week, there is danger of permanent loss of vision unless the pressure on the nerve can be relieved. In Case 24 this actually occurred in eleven days, this patient refusing to have anything done until the social service took hold.

In cases of more than two months' duration, little can be expected. It is probable that the progress of the disease can be checked if it is due to some infection in the sinuses.

As to the degree of the loss of vision: In the six cases in which there was complete blindness, two patients, with blindness of eight and ten days' duration, recovered nearly all their vision, but there remained pallor of the nerve. In one case of four weeks' standing, good vision was obtained, but there was some pallor. Two were unimproved, while the third was able only to count fingers at 3 feet (Cases 6, 10, 14, 22, 23 and 24).

Thus, the demand for early operative inference in the cases of total loss of vision is much more imperative than when the loss is but partial. It would seem the wiser course to err here on the side of advising operation too soon, and possibly unnecessarily, than to

risk a patient becoming permanently blind through delay.

The last three cases have not been previously reported, so it may be of interest to give these somewhat in detail:

REPORT OF CASES

CASE 23.—N. S., a man, aged 30, referred by Dr. Alexander Quackenboss at the infirmary, Jan. 9, 1920, with a diagnosis of retrobulbar neuritis, right, of seven days' duration, had

noticed a slight pain and blurring of the right eye, two weeks previously, following a severe cold. The haziness increased so that at one time he could not even perceive light. On admission he was able to distinguish finger movements in the temporal field at 1 foot. The edges of the right disk were slightly indistinct and the smaller blood vessels rather prominent. The septum was deflected; and while the anterior end of the right middle turbinate was small, the posterior portion was large and obstructive. Roentgenograms and neurologic, physical, dental and Wassermann tests were all

SUMMARY OF INDIVIDUAL FINDINGS

Case	Referred by	Eye	Diagnosis	Duration	Nasal Findings	Roentgen-Ray Report	Vision before Operation	Operation	Vision after Operation	Pathologic Findings	Comment
1.	Dr. H. B. Chandler....	Left	Chronic retrobulbar neuritis	1 year	Pus about sphenoid	Ethmoids obscured	Light perception	None	Unimproved	Pus	
2.	Dr. W. J. Daly.....	Both	Acute retrobulbar neuritis	7 days	Negative	Asymmetry of sphenoid	2/20	Left mid. turb. and sphenoid	Normal	Hyperplasia	
3.	Dr. F. I. Proctor.....	Both	Acute retrobulbar neuritis	3 days	Hypertrophied middle turbinates	Sphenoids hazy	Rt. 20/30 Left 20/40	Local treatment	Normal	Hyperplasia	Removed left middle turb. after vision was normal
4.	Dr. F. H. Verhoeff.... (M. C. E. & E. I.)	Both	Retrobulbar neuritis with some optic atrophy	6 wks.	Negative	Left sphenoid obscured	Rt. 2/200 Left shadows	Both mid. turbs., post. ethmoids and sphenoids	Rt. fingers 2 ft., Left fingers 3 ft.	Pus and gran. in sphenoid	Optic atrophy
5.	Dr. R. C. Mackenzie.... (M. C. E. & E. I.)	Both	Acute optic neuritis	2 wks.	Negative	Negative	Rt. fingers 1 ft., Left 20/200	Right mid. turb. and sphenoid	Normal	Hyperplasia	Slight pallor of disk
6.	Dr. P. H. Thompson... (M. C. E. & E. I.)	Left	Acute retrobulbar neuritis	6 wks.	Def. septum	Negative	Light perception	Sept., mid. turb. and sphenoid	20/20—	Hyperplasia	Slight pallor of disk
7.	Dr. Alex. Quackenboss (M. C. E. & E. I.)	Both	Optic neuritis	10 days	Hypertrophied middle turbinates	Negative	Rt. nil, Lt. fingers	Both mid. turbs. and sphenoid	Normal	Hyperplasia	Slight pallor of disk
8.	Dr. F. M. Spalding.... (M. C. E. & E. I.)	Both	Optic neuritis	6 wks.	Negative	Negative	Rt. light percep., Lt. fingers 3 ft.	Septum, rt. mid. turb. and sphenoid	Normal	Carious molar; dis. antrum	
9.	Dr. F. H. Verhoeff.... (M. C. E. & E. I.)	Left	Papillitis	6 days	Negative	Negative	20/200	Left mid. turb., post. ethmoids and sphenoid	Normal	Pus and gran.; carious tooth	Exophthalmos
9a.	Dr. F. H. Verhoeff.... (M. C. E. & E. I.)	Right	Papillitis	4 days	Negative	Negative	20/200	Rt. mid. turb. and sphenoid	Normal	Pus and gran.	
9b.	Dr. F. H. Verhoeff.... (M. C. E. & E. I.)	Left	Papillitis	1 wk.	Negative	Negative	20/30	Left antrum	Normal	Pus	
10.	Dr. F. H. Verhoeff.... (M. C. E. & E. I.)	Right	Neuroretinitis and choroiditis	3 mos.	Negative	Negative	Nil	Rt. mid. turb., ethmoid and sphenoid	No improvement	Pus and gran.	Headaches relieved
11.	Dr. W. J. Daly.....	Left	Axial neuritis	8 mos.	Polypoid tissue	Erosion in sella tureica, etc.	20/200	None	.....	Round cell sarcoma	Death from streptococcus meningitis
12.	Dr. F. E. Cheney.....	Left	Chronic optic neuritis	4 mos.	Def. septum; pus	Ethmoids and sphenoids hazy	14/20	Left mid. turb., post. ethmoids and sphenoid	16/20	Pus in sphenoid	
13.	Dr. P. H. Thompson... (M. C. E. & E. I.)	Both	Chronic optic neuritis	4 mos.	Def. septum; hyper. mid. turbs.	Negative	20/200	Both mid. turbs., post. ethmoids and sphenoids	20/100	Pus	
14.	Dr. F. M. Spalding.... (M. C. E. & E. I.)	Both	Neuroretinitis	4 wks.	Def. septum; hyper. mid. turbs.	Negative	Nil	Both mid. turbs. and post. ethmoids	Fingers 20 ft.	Pus	Child of 5 years
15.	Dr. Alex. Quackenboss (M. C. E. & E. I.)	Left	Papillitis	1 mo.	Hyper. left mid. turb. and pus	Ethmoids obscured	Lt. fingers 1 ft., Rt. 20/40	Left mid. turb., post. ethmoids and sphenoid	Lt. fingers 2 ft., Rt. 20/20	Pus in sphenoid under pressure	Question of malingering
16.	Dr. E. T. Easton.....	Right	Retrobulbar neuritis with some optic atrophy	2 yrs.	Def. septum; hyper. mid. turb.	Negative	20/200	Rt. mid. turb., post. ethmoid and sphenoid	20/100	Hyperplasia	Progress of optic atrophy checked
17.	Dr. Henry Hawkins....	Both	Papillitis	7 days	Hyper. mid. turb.	Negative	20/30 Rt. 20/100 Lt.	Left mid. turb., post. ethmoids and sphenoid	Normal	Hyperplasia	
18.	Dr. Alex. Quackenboss	Left	Acute retrobulbar neuritis	4 wks.	Def. septum; hyper. mid. turb.	Negative	20/100	Left mid. turb., post. ethmoids and sphenoid	Normal	Hyperplasia	Slight pallor of disk
19.	Dr. C. F. Worthen....	Right	Acute optic neuritis	3 wks.	Marked hyper. mid. turb.	Negative	Fingers 3 ft.	Rt. mid. turb., post. ethmoids and sphenoid	20/70	Cystic mid. turb.	
20.	Dr. C. F. Worthen....	Both	Chronic retrobulbar neuritis	4 mos.	Hypertrophic rhinitis	Negative	Rt. 20/100 Lt. 20/70	Local treatment	Nearly normal	Hyperplasia	
21.	Dr. P. H. Thompson... (M. C. E. & E. I.)	Both	Chronic retrobulbar neuritis	9 mos. left 3 mos. rt.	Hypertrophy, both mid. turbs.	Negative	Lt. fingers 4 ft., Rt. 20/70	Both mid. turbs., post. ethmoids and sphenoid	20/200 Rt. Fingers 4 ft. left	Hyperplasia	Atypical multiple sclerosis
22.	Dr. G. S. Derby..... (M. C. E. & E. I.)	Right	Acute retrobulbar neuritis	7 wks.	Hyper. mid. turb.	Negative	Nil	Rt. mid. turb., post. ethmoids and sphenoid	Unimproved	Hyperplasia	Optic atrophy
23.	Dr. Alex. Quackenboss (M. C. E. & E. I.)	Right	Acute retrobulbar neuritis	8 days	Def. septum; hyper. mid. turb.	Negative	Nil	Sept., mid. turb., post. ethmoids and sphenoid	20/20—	Hyperplasia	Slight pallor of disk
24.	Dr. S. J. McDonald.... (M. C. E. & E. I.)	Right	Acute retrobulbar neuritis with some optic atrophy	11 days	Hyper. mid. turb.	Negative	Nil	Rt. mid. turb., post. ethmoids and sphenoid	Fingers 6 inches	Membranous sac in ethmoids	Partial optic atrophy
25.	Dr. W. N. Souter..... (M. C. E. & E. I.)	Left	Acute retrobulbar neuritis	9 days	Hyper. mid. turb.	Negative	Light perception	Left mid. turb., post. ethmoids and sphenoid	Normal	Pus in ethmoid	

* Massachusetts Charitable Eye and Ear Infirmary.

negative. Two days later the septum was resected, the right middle turbinate removed, and the right posterior ethmoids and sphenoid opened. The posterior ethmoid was unusually large, and located directly in front of the sphenoid, so that when opened at a depth of $3\frac{1}{2}$ inches it was mistaken for maxillary sinus. A small opening, however, was discovered near the septum, which led into a cell one-half inch deep, which proved to be a rather small sphenoid. The vision did not improve as rapidly as usual, and on the patient's discharge at the end of a week, fingers could be distinguished only at 6 inches. A severe cold was contracted on the way home, and for a day the vision became nil. Under hot irrigations the patient gradually improved. In two months, vision was 20/20, with some pallor of the disk.

CASE 24.—Mrs. B. M. T., aged 40, referred by Dr. S. J. McDonald at the infirmary, Jan. 19, 1920, with a diagnosis of retrobulbar neuritis, right, of three days' duration, had complete loss of vision. The pupil did not react to light. The blood vessels were rather small, the disk, pale. The right middle turbinate was somewhat obstructive posteriorly. Examination otherwise was negative. The roentgen-ray, Wassermann, medical and neurologic examinations were negative. An immediate operation was advised, but the consent of the patient could not be obtained, so that it was not until January 27, eleven days after the onset of the trouble, that she permitted me to operate. The middle turbinate, which proved to be much larger than it appeared, was removed, and the posterior ethmoids and sphenoid opened. In one of the posterior ethmoids there was a thick membranous sac, mention of which has previously been made. The patient was discharged four days later, with vision unimproved. Ophthalmologic examination revealed: "No light perception; pupil reacted slightly to light; motion normal; very slight pain on pressure over eye; disk more hazy and indistinct than in other eye, and the physiologic cupping absent, with a higher color to disk; blood vessels about the same in the two eyes." Five weeks after operation, examination revealed a well developed optic atrophy. The patient was, however, able to see fingers at 6 inches. This case is one in which the patient would probably have been benefited had she consented to an earlier operation.

CASE 25.—Mrs. J. M. P., aged 27, referred by Dr. W. N. Outer at the infirmary, Jan. 26, 1920, with a diagnosis of retrobulbar neuritis, right, of six days' duration, had had a flurring in the same eye some months previously, which had cleared up without treatment. Following a slight cold, large objects seemed in a thick haze. In six days there was barely light perception. Dr. Derby examined the fundus and reported "outline of disk somewhat blurred. Not as much physiologic excavation in left eye; vessels about the same size; fogging of disk and higher color. Vision, right, 20/20. Question of light perception, left." Physical, dental, neurologic, roentgen-ray and Wassermann tests were all negative. The nasal examination was practically negative except that the posterior portion of the left middle turbinate seemed somewhat enlarged. January 29, nine days after the onset of the trouble, the middle turbinate was removed and the posterior ethmoids and sphenoid were opened. A small amount of pus was found in one of the posterior ethmoids, and the tissue was somewhat thickened. In two days the patient could count fingers at 6 inches. Vision improved rapidly so that in two weeks it was 20/30, and at the end of a month was normal.

GENERAL SUMMARY

Of the twenty-five cases here reviewed, operation was not performed in three (Cases 1, 11 and 20). In the first, the eye remained permanently blind. In the second, the patient died from a sarcoma; and in the third, the vision was improving when first seen and recovered under local treatment. In a fourth (Case 3) a hypertrophied middle turbinate was removed some time after the vision had returned.

Of the twenty-two operative cases there was improvement in all but three (Cases 10, 21 and 22).

In one the eye had been practically blind some months. In another of five weeks' duration there was slight improvement at first, but pressure had continued so long that optic atrophy resulted. The third case was one of multiple sclerosis.

Normal vision was obtained in nine cases (Cases 2, 3, 5, 7, 8, 9, 17, 18 and 25).

There was marked improvement in four (Cases 6, 14, 19 and 23), but some optic atrophy.

There was only slight improvement in six (Cases 4, 12, 13, 15, 16 and 24), this being due to the chronic nature of the disease and the delay in operating.

In three there appeared to be a direct extension of the infection (Cases 11, 14 and 15).

The toxemia from pus found in eight cases seemed the chief factor (Cases 1, 4, 8, 9, 10, 12, 13 and 25).

Hyperplasia appeared the predominating lesion in fourteen (Cases 2, 3, 5, 6, 7, 16, 17, 18, 19, 20, 21, 22, 23 and 24).

In six, the nasal examination was considered negative (Cases 2, 4, 5, 7, 9 and 10).

In seven, roentgen-ray examination was positive (Cases 1, 2, 3, 4, 11, 12 and 15). Negative plates, let me add, by no means contraindicate an operation. This is especially so in hyperplasia, as only two of the fourteen cases showed any roentgen-ray findings.

The middle turbinate was removed in all the cases in which operation was performed, and the sphenoid opened in all but one (Case 3).

The posterior ethmoids are at present opened as a matter of routine. Unless suspected of infection, the other accessory sinuses are not disturbed. The complete ethmoid exenteration does not in most cases seem necessary.

The accompanying table summarizes the individual findings in the cases studied.

390 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

DR. S. G. HIGGINS, Milwaukee: Be very sure of your diagnosis before you undertake an accessory sinus operation. I might possibly differ some with the essayist as to his technic in removing all of the middle turbinate, but something can still be learned as to the best technic in ethmoidal surgery. We have not the ideal operation as I understand it. We ought not to operate so frequently that the internist who refers our sinus cases has a larger series of negative results than he has positive results. As rhinologists we ought to require from the ophthalmologist a complete history which may aid us in making a diagnosis before we operate. If other things seem to be failing, operation is clearly indicated, and if you get a negative result it is to be hoped that no harm has been done.

DR. LEON E. WHITE, Boston: These cases were all rather extreme, and were referred by competent ophthalmologists after having been thoroughly investigated, as they felt that unless relief could be given at once, the eyes would be lost. I do not believe in operating on any patient that shows a tendency to improve; but it is very important to operate before it is too late. In the case I reported, of eleven days' duration, the woman declared there was nothing the matter with her nose. The eye men felt, as there were no other findings, that the trouble was probably in the accessory sinuses. There was a cyst in one of the posterior ethmoids and distinct pathologic conditions that were not evident on inspection. I want to emphasize the point that these cases cannot go too long, that we cannot waste too much time in investigating them. Dr. Stark made a good point in the discussion which he had prepared. In speaking of those cases which recover spontaneously, he said that when there

was a pressure sufficient to cause these symptoms there was probably some condition in the nose that needed attention; even though the patient recovers it is advisable to investigate thoroughly the condition, and if anything is found, it should be taken care of in order to prevent later complications, especially multiple sclerosis. An illustration of this occurred the day I left Boston.

NERVE BLOCKING FOR NASAL SURGERY *

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My object in this article is to give a brief description of nerve blocking by procain, as used in twenty-nine nasal operations, with complete anesthesia in all except two cases.

In order to produce anesthesia in either nasal chamber, one needs to inject only two points; namely, the exit of the nasal nerve from the orbit, and the region of Meckel's ganglion. In view of this fact, it will be of advantage to give a brief review of the anatomy concerned, according to Gray:

Meckel's (sphenopalatine) ganglion is deeply placed in the sphenopalatine fossa, close to the sphenopalatine foramen . . . and is situated just below the superior maxillary nerve. . . . Its sensory root is derived from the superior maxillary nerve. . . . Its motor root is derived from the facial nerve through the large superficial petrosal nerve, and its sympathetic, from the carotid plexus through the large deep petrosal nerve. These two nerves join together to form a single nerve—the vidian.

Branches of Distribution of the Sphenopalatine Ganglion.—These are divisible into four groups: . . . ascending, which pass to the orbit; descending, to the palate; internal, to the nose; and posterior branches, to the nasopharynx. . . . The descending or palatine branches . . . are three in number, anterior, middle and posterior. The anterior palatine nerve . . . gives off inferior nasal branches, which enter the nose through openings in the palate bone and ramify over the turbinated bone and middle and inferior meatuses. . . . The internal branches are distributed to the septum and outer wall of the nasal fossae. They are the superior nasal and the nasopalatine. The superior nasal branches, four or five in number, enter the back part of the nasal fossa by the sphenopalatine foramen. They supply the mucous membrane covering the superior and middle turbinated processes, and that lining the posterior ethmoidal cells, a few being prolonged to the upper and back part of the septum. The nasopalatine nerve also enters the nasal fossa through the sphenopalatine foramen; it passes inward across the roof of the nose, below the orifice of the sphenoidal sinus, to reach the septum, and then runs obliquely downward and forward along the lower part of the septum, to the anterior palatine foramen, lying between the periosteum and mucous membrane. It descends to the roof of the mouth through the anterior palatine canal.

The nasal nerve enters the orbit by way of the sphenoidal fissure between the two heads of the external rectus, and passes obliquely inward across the optic nerve beneath the superior rectus and superior oblique muscles, to the inner wall of the orbit. Here it passes through the anterior ethmoidal foramen, and, entering the cavity of the cranium, traverses a shallow groove on the front of the cribriform plate of the ethmoid bone, and passes down through a slit by the side of the crista galli into the nose, where it divides into two branches, an internal and an external branch. The internal branch supplies the mucous membrane near the fore part of the septum of the nose. The external branch descends

in a groove on the inner surface of the nasal bone and supplies a few filaments to the mucous membrane covering the fore part of the outer wall of the nares as far as the inferior turbinate process; it then leaves the cavity of the nose, between the lower border of the nasal bone and the upper lateral cartilage of the nose, and, passing down beneath the compressor nasi, supplies the integument of the ala and the tip of the nose, joining the facial nerve.

PROCEDURE OF INJECTIONS

A. Nasal Nerve.—1. Instil a few drops of 4 per cent. cocain into the conjunctival sac to prevent pain on inserting the needle.

2. Lift the upper lid upward and inward by placing the thumb at the inner and upper margin of the orbit and direct the patient to look outward. Insert the needle through the plica semilunaris just below the upper lacrimal puncta, directing it slightly inward and upward, at an angle of about 30 degrees. The needle will soon strike the os planum, and on moving the point of the needle up and down, when inserted about 2 cm. ($\frac{3}{4}$ inch) in depth; it will engage in a groove the anterior end of which terminates in the anterior ethmoidal foramen. Here the nasal nerve leaves the orbit. Inject about 1 c.c. of 1 per cent. solution of procain.

B. Meckel's Ganglion.—1. Brush the hard palate with a solution of cocain along the root of the molars.

2. Place the index finger on the hamular process of the internal pterygoid plate and bring it forward until a depression, the lower end of the posterior palatine canal, is palpated.

3. Place the needle at an angle of about 45 degrees with the upper teeth and along the second molar about $\frac{1}{8}$ inch from its root. This brings the needle near the canal, which it usually enters after three or four attempts. Pass the needle upward about 2.75 to 3.5 cm. (1 to $1\frac{1}{4}$ inches), when the point will be near Meckel's ganglion. Inject from 1 to 1.5 c.c. of 1 per cent. solution of procain.

The injection of the nasal nerve is a very easy procedure. One can readily tell by careful manipulation when the needle is engaged in the groove near the anterior ethmoidal foramen. The injection of the Meckel's ganglion is a little more difficult, as one has to locate the canal, but usually this is not hard to do. If the needle be placed a little too far back, it may pierce the soft palate, in which case the fluid may run down the nasopharynx. If it be placed forward, it may puncture a vessel on the hard palate and cause a little bleeding. The second molar is an excellent guide for the site of injection, if one remembers that the canal is close to the margin of the hard palate. I had considerable difficulty in one case, as I took the first for the second molar. The patient finally remarked: "My wisdom tooth was pulled." From this information I soon located the canal.

Force was not used in passing the needle through the canal, as the needle passes rather easily when properly manipulated.

The Luer's glass syringe (1.5 c.c.) was used and found very satisfactory. Straight needles $1\frac{1}{2}$ inches long, ranging in gage from 23 to 25, are very satisfactory for injecting Meckel's ganglion. They should be of good quality, and have neither a sharp nor blunt end, but rather a bevel point. A bevel point is easily obtained by filing off the sharp end of the ordinary needles. Any small needle about 1 inch long does well for the injecting of the nasal nerve.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

The following objections have been considered in regard to the foregoing injections: (a) Danger of carrying infection into the orbit. (b) Puncture of the roof of the orbit by undue force. (c) Injury to blood vessels in the posterior palatine canal. (d) Carrying infection into the region of Meckel's ganglion.

So far none of these objections have been encountered. Normally the conjunctival sac contains very few bacteria. If deemed advisable, one may use 4 per cent. protargol, as an antiseptic for the conjunctival sac. One could puncture the roof of the orbit with the needle, but such force is to be considered poor manipulation on the part of the operator. Chances of injuring the vessels in the posterior palatine canal seem small, as the needle with a bevel point is being passed parallel to the vessels. Even if the fluid is injected directly into the vessel, the amount is not sufficient to give any alarming toxic symptoms. If one is afraid of infection, alcohol may be rubbed over the site of injection.

Four of the patients had a little edema and discoloration of eyelids, which passed off in a day or so. A few had paralysis of the internal rectus, which passed off after the effect of the procain wore off. Sterile solutions of procain, varying in strength from 1 per cent. to 2 per cent., were used. One per cent. gave good anesthesia within about five minutes, and lasted thirty minutes or longer. Less than 2 grains were used in all but one case, in which 4 grains were used. In the majority of cases "Novocain and Suprarenin Tablets 'A,'" made by Farbwerke Hoechst Company, New York, were used. Each tablet contains novocain 0.125 gm., and 1-suprarenin, 0.00125 gm. (which equals about 2 minims of 1:1,000 epinephrin). L-suprarenin is a synthetic preparation made by the above named firm. In other cases, procain to which sterile epinephrin was added in proportion of from 6 to 10 minims to 10 c.c. of 1 per cent. solution was used. When epinephrin was added to procain the two were mixed (usually in the syringe) in the foregoing proportion, and injected almost immediately. If mixed and allowed to stand for a while, the procain loses a large part of its anesthetic power. At first no precaution was taken as to whether the physiologic sodium chlorid solution, the solvent, was alkaline or acid. After failing to get proper anesthesia in two cases, I wrote the company which made the tablets "A" and was informed by them that the solvent was alkaline, it would destroy the anesthetic property of the procain. After this the solvent was tested to be sure it was neutral or only slightly acid, and there was no more trouble in getting proper anesthesia. In order to obtain as little bleeding as possible, it is advisable to pack the nasal chamber with about equal parts of 5 per cent. cocain and epinephrin.

A semiupright position was used for the patients, and was found excellent both for the patient and the operator. It relaxes the patient and enables him to be comfortable. This position is objected to by some operators, but there is only one answer and that is: "I must see the field of operation before I operate in the posterior ethmoidal region."

Twenty-two of the twenty-nine operations were performed at the Massachusetts Charitable Eye and Ear Infirmary, Boston, during the summer and fall of 1917. They were of all varieties—ethmoid, sphenoid, intranasal frontal, intranasal antrum, submucous resection and turbinectomy. I was more impressed

with the anesthesia for sinus than for septal work, as good anesthesia of the septum is obtained by packing. The war interfered with this work, and very little has been done since 1917.

This article is offered more as a preliminary report, rather than a report of work completed. I hope to make a report later on, as to just which part of the nose is anesthetized by injecting Meckel's ganglion, and which part by injecting the nasal nerve separately.

ABSTRACT OF DISCUSSION

DR. H. H. MARTIN, Savannah, Ga.: Some time ago when Sluder first advocated the injection of Meckel's ganglion, I was visiting with Dr. Reaves and his brother, and they had for a year or more been injecting Meckel's ganglion through the posterior palatine canal. It is easily as effective as injecting through the nose, but in my hands it has not been done so easily. I prefer the Sluder method, that is, a long needle inserted through the posterior end of the middle turbinate, getting it in the right position, and giving it a slight tap with a hammer. Dr. Reaves' idea of injecting the exit of the nasal nerve is entirely new to me. I had not heard of it before, but in his hands it certainly seems perfectly practical. I do not see why it should not be used in a great many cases. Personally, however, I do not believe in injecting local anesthetics when you can apply them topically. The topical application is much safer, as a rule. However, a weak solution of procain injected into Meckel's ganglion will certainly produce an anesthesia of every ramification of that organ. Many men with whom I have been in correspondence inject the ganglion first, and then by placing a cotton pledget covered with cocain paste high up between the septum and the lateral wall of the nose anesthesia is produced. Sluder applies a strong solution of cocain directly over the sphenopalatine foramen.

DR. ROBERT G. REAVES, Greensboro, N. C.: This is simply my observation. In regard to the Sluder method, I have only tried it a few times, but I never was certain whether I was going into the cranial cavity or not. I was afraid. This way, with a needle one and one half-inches long, you would have to have a very small patient before you got into the cranial cavity.

EFFECTS PRODUCED ON BLOOD PICTURE BY OXYGEN INFLATION OF PERITONEAL CAVITY *

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NEW YORK

Our attention has been directed of late to roentgenograms of the abdominal organs in which the outlines were brought out by the use of oxygen inflation of the peritoneum. Last fall I decided to make use of this technic, and began by making several peritoneal inflations in my service at the Beth Israel Hospital. Credit for the original idea of the use of oxygen as an aid in roentgen-ray diagnosis of the abdomen must be given to Kelling. His views were published in 1902. The method received little or scant attention until Jacobaeus took it up eight years later, and he was followed by several others. Stewart and Stein again discussed the procedure. They state that if the peritoneum is distended with oxygen, the gas will be absorbed within twenty-four hours. This is contrary to my observations. Dr. Charles Gottlieb and I have

* Read before the Eastern Medical Society of New York, March 12, 1920.

observed that, while much of the gas may be absorbed within twenty-four hours, the presence of some of it can be demonstrated with the roentgen ray for two weeks after the injection. Before introducing the oxygen into the peritoneal cavity, I decided to observe what effect 1,000 or 2,000 c.c. of oxygen would produce on the blood picture of the subject when introduced into the closed cavity of the peritoneum. I had observed in five patients at the Beth Israel Hospital in whom the peritoneal cavities were inflated with 1 or 2 liters of oxygen that the number of erythrocytes was increased from 80,000 to several hundred thousand after the oxygen inflation. The oxygen was introduced into the peritoneal cavity through a cannula passed through the abdominal wall. I found that the injection of more than 1 or 2 liters caused unnecessary discomfort to the patient. Our first case was a postoperative empyema.

TABLE 1.—RESULTS OF INFLATIONS

Cases	Red Blood Cells		Net Increase in Red Blood Cells
	Before Injection of Oxygen	24 Hours After Inflation	
1. Postoperative empyema.....	4,000,000	4,080,000	80,000
2. Tumor of kidney.....	3,960,000	4,800,000	840,000
3. Suspected ulcer of stomach.....	4,000,000	5,600,000	1,600,000
4. Subphrenic abscess.....	3,680,000	4,160,000	480,000
5. Pelvic tumor.....	5,730,000	6,260,000	530,000

RESULTS OF FURTHER INVESTIGATIONS

As the results were so gratifying, I followed these observations with similar ones on some of the chronic invalids of the Montefiore Hospital. About 1,000 c.c. of oxygen were injected into the peritoneal cavity in two cases of splenomegaly and in a case of inoperable carcinoma of the stomach. The two cases of splenomegaly gave positive Wassermann reaction. The results of these inflations are shown in Table 2.

TABLE 2.—RESULTS OF INFLATIONS IN CHRONIC INVALIDS

Cases	Red Blood Cells		Net Increase in Red Blood Cells
	Before Injection of Oxygen	24 Hours After Inflation	
1. Splenomegaly.....	3,920,000	6,200,000	2,280,000
2. Splenomegaly.....	4,400,000	6,000,000	1,600,000
3. Inoperable carcinoma.....	6,280,000	6,600,000	320,000

EFFECT IN PERNICIOUS ANEMIA

We also observed results in a case of the fatal form of pernicious anemia. The patient's red blood cell count was only 480,000, and the count made twenty-four hours after the peritoneal cavity had been inflated showed a net increase of 1,680,000, or a total of 2,160,000. I have not been able to find similar reports by others.

POSSIBLE MECHANICAL EFFECT

I believe that the results of our observations may be due to the mechanical effect of the pressure of the gas on the larger abdominal venous trunks. Some support to this contention is given by the results obtained several weeks ago by Dr. Max Kahn, who performed some animal experiments for me in the laboratory of the Beth Israel Hospital. Pneumoperitoneum produced in six rabbits inflated with oxygen showed in each of the six rabbits injected a net increase of from 200,000 to 900,000 red blood cells. He then inflated the peritoneal cavity of three rabbits with nitrogen gas, and the results were similar. The blood taken from these

rabbits showed an increase in the red blood cell count of 200,000, 300,000 and 500,000, respectively.

THERAPEUTIC SIGNIFICANCE

I am not prepared at this time to make any statement as to the value of this procedure as a therapeutic measure. I have no direct evidence that oxygen introduced into the closed peritoneal cavity has any direct stimulating effect on the hematopoietic organs and therefore I am not prepared to suggest that the method might be utilized in the treatment of anemia. On the other hand, my observations lead me to believe that the gas acts as a splint by giving support and pressure to the larger venous trunks of the abdomen and thus might be utilized in the treatment of shock.

CONCLUSION

As far as I have gone, I have concluded that oxygen injected into the peritoneal cavity is followed by an appreciable increase in the number of red blood cells in the peripheral circulation, which is demonstrated by the blood count. Further experiments will be undertaken with a view to determine definitely the value of this measure.

969 Madison Avenue.

Clinical Notes, Suggestions, and
New Instruments

BILATERAL EMPYEMA; STAPHYLOCOCCUS PYEMIA *

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This rather unusual case presents many interesting and difficult problems arising in the course of an infection. Beginning as influenza, the infection ran a most profoundly severe and toxic course because of the presence of *Staphylococcus aureus* involving both middle ears, both parotid glands, both lungs, both pleurae and numerous other points of infection, and it terminated with a destructive inflammation of the crest of the right ilium. The disease processes encountered were influenza, bilateral otitis media, mastoiditis, bilateral septic parotitis, bilateral bronchopneumonia, bilateral pleurisy, bilateral empyema, pyemia, pressure necrosis, trophic neuritis, and osteomyelitis of the ilium. The patient, though recovery was many times despaired of, safely weathered these attacks for a period of six months or more, the heart never failing, the renal organs remaining undamaged, the gastrointestinal tract continuing to function, and final recovery being attained.

REPORT OF CASE

A boy, aged 14 years, became sick, March 1, 1919, and was referred to me by Dr. Hartwig Kandt, who directed the medical treatment of the case. The only facts pertinent to the disease are those of his present illness. The onset was sudden, with general body pains, chilly sensations, congestion of the nasopharynx, and prostration, pointing to the diagnosis of influenza. At the outset the type of toxemia was seen to be most severe, with a temperature range up to 105, pulse rate up to 140, and respirations of between 35 and 50. Blood pressure was subnormal, with a systolic reading of 100, and diastolic of from 50 to 60. Cough was present with mucus expectoration, several early attacks of epistaxis, sharp pain in the left chest, and increasing delirium.

The organism responsible for the sequence of pathologic conditions that followed was *Staphylococcus aureus*, and on the fifth day of the disease it was recovered from the sputum

* Read before the Medical Society of the County of Kings, Jan. 20, 1920.

in great preponderance. The leukocyte count was low, being 7,400, with 70 per cent. polymorphonuclears; the urine was normal except for a trace of albumin. On the eighth day a slight discharge was noted from the right ear, and both drums were later incised, the culture from the discharge showing in each case *Staphylococcus aureus*. Four days later a swelling was noted over the right parotid, which was painful, tender and red. Meanwhile signs of consolidation of the left lung had developed, and the condition of the patient was that of a tremendously severe type of toxemia. The following day the opposite parotid became tender and swollen, and an area of infection was noted on the outer aspect of the left arm. Delirium was constant, the patient was restless and talkative, urination was frequent and incontinent, and both ears discharged profusely.

On the sixteenth day of the disease, aspiration of the left chest gave 30 ounces of a clear serum, culture from which showed *Staphylococcus aureus*. The right parotid was also incised at this time, revealing a burrowing infection of the gland with extensive necrosis, the same organism being recovered in the culture. Next day the left parotid was incised, and a similar condition found, due to the same organism. On the eighteenth day the infection of the left arm was likewise opened and the same organism recovered. Blood cultures taken at this time and a week later were, however, sterile. The white cell count had increased to 44,000 and the polymorphonuclears to 92 per cent.

During this period, the second and third weeks of the disease, the condition of the patient continued to be most critical, with a temperature range of 102 to 104, a pulse rate of 110 to 120, respirations of 30 to 40, active delirium, involuntary urination, etc. But the intake of fluid was ample, the urine output being 45 or more ounces a day, with no evidence of a failing heart, and blood pressure near the normal.

On the twenty-fourth day, fluid aspirated from the left chest had the appearance of creamy pus, and the patient was removed to the hospital for the necessary thoracotomy. Under 2 per cent. procain, 2 inches of the left ninth rib, in the posterior axillary line, were resected, 16 ounces of pus evacuated, and drainage maintained by means of two large rubber tubes. The parotids, still discharging from several pockets, were more widely incised, and Dakin's tubes inserted. Hemanalysis revealed 4,496,000 red cells, 75 per cent. hemoglobin, 25,000 leukocytes, and 69 per cent. polymorphonuclears. The Wassermann test was negative, and the spinal fluid presented a normal count and sterile culture. The reaction to this operative procedure was not alarming, the primary rise of temperature to 105 and over being followed on the third day by a general fall to between 101 and 102, with no improvement in the mental condition, etc.

About this time the opposite lung became involved, progressing to complete consolidation of the entire lower lobe by the thirty-fourth day of the disease, accompanied by embarrassed respirations of from 60 to 70; but the patient's mind was clearer. The blood picture was less favorable, because of rather rapid type of hemolysis, showing 3,216,000 red cells, and 55 per cent. hemoglobin on the thirty-first day, and 2,936,000 red cells and 50 per cent. hemoglobin two days later. The increasing anemia was plainly apparent to the eye, all the wounds appearing pale and sluggish with profuse discharges, and showing a tendency to spread. Moreover, three areas of pressure necrosis had developed over the sacrum and the posterior spines of the ilium, as well as a spot of dry gangrene on the glans penis. The mastoid processes were very tender, and the overlying skin edematous. It was quite evident that the patient was losing ground, and the outlook appeared gloomy.

He had begun to yield to the added infection due to the involvement of the opposite lung, and the progressing pyemia. At this critical moment resort was had to blood transfusion, 1,010 c.c. being given after the Miller method. Next day the red cell count had jumped to 4,450,000, and the hemoglobin to 68 per cent., and with this the mind was clearer, the skin pink, the heart sounds good, the lungs unchanged. The change in the appearance of all the wounds was most noticeable, showing active, pink and healthy granulations, and a marked lessening of the discharge.

Flatness of the right lower lobe persisted, and on the thirty-seventh day 1,050 c.c. of cloudy fluid were withdrawn, culture from which yielded the staphylococcus. Favorable signs were the nearly healed parotid wounds, the improved condition of all bed sores, and a clearer condition of the mind.

The problem now was the procedure to be adopted for the treatment of the second empyema, in the presence of the opposite unexpanded lung with its unhealed thoracotomy wound. The dangers of a second thoracotomy at this time were obviously too great to be undertaken. The use of a suction apparatus, such as the Phillips, was out of the question, because of the other surgical conditions present, and also the unreliability that it had shown in my experience with it. Therefore, to maintain the capacity of the new cavity at a minimum and prevent lung compression, and at the same time to evacuate the pus accumulation and allow for the formation of lung adhesions, repeated and frequent aspirations of the pleural cavity were resorted to, by means of a Chapman water pump attached to a nearby faucet. In this way from 75 to 175 c.c. of pus were aspirated at intervals of from two to four days. During these days three more abscesses were incised and the staphylococcus recovered each time. Also an area of dry gangrene appeared over the left heel, and foot drop due to trophic neuritis was noted.

An effort to sterilize the fluid in the right chest was made by the use of 2 per cent. solution of formaldehyd in glycerin injected into the cavity after each aspiration; but the only result apparent was a change in the character of the discharge from a thick pus to a thin, reddish fluid. The culture still showed the causative organism.

Meanwhile the ear drums healed, the mastoids had cleared, and the parotids were nearly well. The management of the condition was maintained as described for more than three weeks, and some improvement was manifest in the general condition of the patient; but about the sixtieth day of disease a downward trend was noted. The patient was more irrational, having restless nights, and taking less nourishment. The temperature assumed the septic type. The cavity of the left chest measured at this time only 6 ounces. The red cell count showed a fall of one-third million, and the hemoglobin dropped from 78 to 65 and down to 60 per cent. in a few days. The leukocytes increased from 22,000 to 38,000, and the red cell count was slightly above 3,000,000. The temperature showed a sharp afternoon rise to 103, and the pulse and respiratory rates revealed an upward trend. A further abscess of the left sacral region was opened and the staphylococcus obtained.

It now became apparent that improvement had ceased in the general condition of the patient, and, on the contrary, there was a general retrogression, accompanied by a rather rapid degree of hemolysis. Further delay in undertaking the second thoracotomy seemed inadvisable, and on the sixty-sixth day of disease, following a blood transfusion of 436 c.c., the eighth right rib was resected, and about 200 c.c. of pus evacuated. This cavity was treated after the third day by the Dakin technic (as had been done in the case of the opposite chest). There was practically no unfavorable reaction to this procedure, and improvement promptly began. During the period of the following ten days the temperature, pulse and respiratory rate decreased measurably, the red blood cells increased one-half million, the leukocytosis decreased, the mind became clear at all times, and the patient began to evidence interest in events.

Progress continued favorable, the left chest healing on the one hundred and tenth day and the right on the one hundred and eighteenth, and the patient returned to his home on the one hundred and twenty-ninth day of his disease, where the rate of progress was maintained, and all wounds went on to complete healing.

At this time, four and one-half months from the onset, complaint was made of pain and tenderness over the crest of the right ilium, and all evidences of a localized osteomyelitis appeared. The patient was again removed to the hospital, and about 3 inches of the crest of the ilium to a depth of one-half inch was found to be necrosed, and was excised. The recovery from this operation was prompt. All

the wounds had healed by seven and one-half months, the foot drop had practically cleared, and the patient was restored to complete health.

322 Park Place.

AN APPARATUS FOR THE USE OF ETHYL CHLORID WITH OTHER AGENTS

A. F. ERDMANN, M.D., BROOKLYN

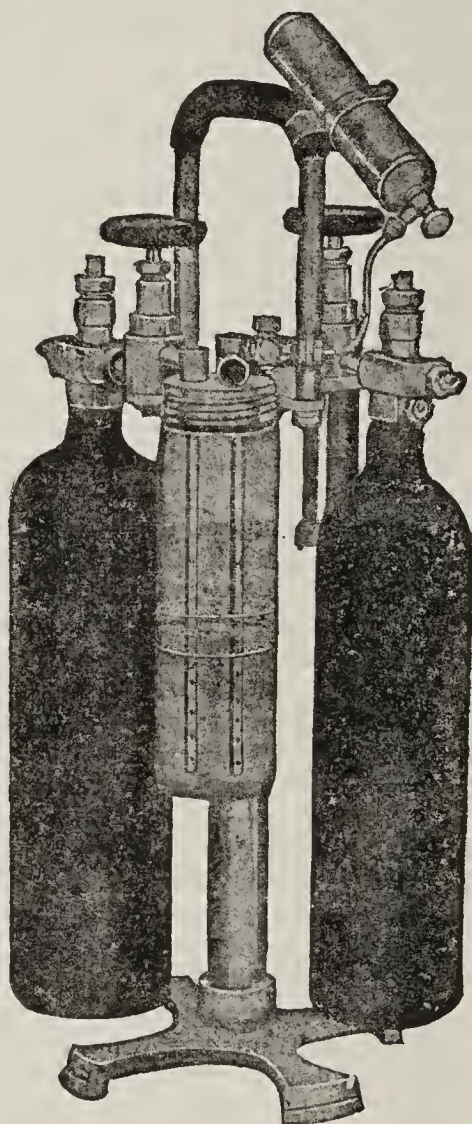
Lecturer on Anesthesia, Long Island College Hospital

In 1903, Hewitt¹ suggested that ethyl chlorid might be combined with nitrous oxid gas for surgical anesthesia. He states that this combination is useful only for induction or for very short periods. His method of employment was somewhat uncomfortable, for it necessitated the use of one hand to manipulate or hold the container. He recognized the value of the method, and his reasons are as good now as then, and his success can be easily duplicated.

The apparatus herewith illustrated obviates all the older difficulties, and because of its other parts makes it feasible to use ethyl chlorid with, before or after another anesthetic, or alone as the anesthesiologist chooses. Those who are familiar with the original apparatus will quickly notice that the change consists merely in providing an attachment to hold the Gebauer tube on the handle, and in utilizing the opening intended for the manometer to receive the tube from the ethyl chlorid container. Furthermore, one is now enabled to exhibit any number of combinations of agents by simply using a double reservoir tube holding both ether and chloroform; or the quadruple form, adding anesthetic and any other agent desired.

I am enjoying my modification particularly in the case of patients the contour of whose face makes it difficult to apply a mask air-tight; in nose and throat operations and in gas-oxygen anesthetics when I would otherwise use "a little ether," and in that type of patients who do not quickly succumb to gas alone. I would suggest its availability, however, not only for the short case to which Hewitt limited himself, but also for any length of time and for any operation.

458 Ninth Street.



Apparatus for ethyl chlorid with other agents.

DOUBLE TUBAL PREGNANCY: ONE TWINS *

J. H. CARSTENS, M.D., DETROIT

Tubal pregnancy is not so rare as it formerly was supposed to be, but double tubal pregnancy is quite rare, and comparatively few cases have been recorded. Quite a few cases have been reported of a simultaneous tubal and normal pregnancy. Having had a case of a double tubal pregnancy, and one of these twins, I certainly thought that it ought to

be put on record, as I have not been able to find a report of any case in a hasty glance through the literature.

REPORT OF CASE

Mrs. W. N., aged 23, married seven months, with a good family history, and no sickness herself except some of the diseases of childhood, had always menstruated regularly, with slight spasmodic pain. The last normal menstruation occurred, Oct. 25, 1919. November 23, she had some pains, cramps as she called them, and a slight showing. These continued, sometimes quite severe for an hour or two, and then not noticeable for the balance of the day. She consulted me to find out whether or not she was pregnant. She was a healthy looking woman, with a nice pink complexion. On examination, I could map out the uterus easily, apparently slightly enlarged, with soft cervix. To the right was a well marked swelling, not hard or fluctuating. On the left side, I could not detect anything abnormal.

This was evidently an extra-uterine pregnancy, and I urged a prompt operation; but it took several days before I could get her to the hospital. December 5, I operated, and found the uterus in the normal place, and the right tube enlarged very much and empty, so that the thumb could easily enter to the junction with the uterus. The culdesac was a mass of blood, coagulated and of various colors, showing that it had been deposited there on various days. There was comparatively little: I should say 3 or 4 ounces. No attention was paid to it then. The tube was removed, but an effort was made to keep it patulous by sewing the mucous membrane to the serous covering. The culdesac was now carefully cleansed. On looking at the left side, I found the tube absolutely closed, very dark and about 2½ inches long, and 1½ inches in diameter, evidently another tubal pregnancy. This was carefully removed, and also an effort made to keep the tube patulous by stitching the mucous membrane to the serous covering at the horn of the uterus. The abdomen was closed with plain sterilized catgut, and the woman made an uneventful recovery.

On opening up the left tube, we found two small fetuses about three-fourths inch long. I should judge that the right tube must have been a pregnancy of six weeks, and the left one, containing the two, of about three weeks.

NITROBENZENE POISONING WITH CYANOSIS

REPORT OF CASE

FRANK G. SANDERS, M.D., FORT WORTH, TEXAS

Several cases of methemoglobinemia due to some poisonous substance in shoe dye have been reported in the literature recently.¹ In the cases occurring at Camp Joseph E. Johnson and Camp Jackson, the cyanosis and symptoms of poisoning were found to be due to nitrobenzene, a constituent of the shoe dye used. In the former camp the cases occurred among recently commissioned officers who had had their puttees and shoes dyed and had worn them immediately. Recovery in these cases was prompt, taking place generally within twenty-four hours.

On the evening of Feb. 7, 1920, at about 6:30, a well dressed young man was brought into the Johnson and Beall Hospital. He was a railroad employee and had been in excellent health until the present afternoon. He had spent the afternoon at the theater and had gone to the interurban station to take the 6 o'clock car. The last thing he remembered was looking at his watch and noting that it was 3 minutes to 6. The person who brought him in stated that he had driven up to the mail box about 6 o'clock and had found the patient leaning over the package box apparently unconscious. He had brought the man directly to the hospital.

The patient was of good physique. He was conscious, but seemed confused, and said that he was dizzy and that his chest was full of something. He was markedly cyanosed

1. Hewitt, F. W.: Tr. Brit. Dental Assn., 1903.

* Read before the Detroit Surgical Society, April 9, 1920.

1. Stifel, R. E.: Methemoglobinemia Due to Poison by Shoe Dye, J. A. M. A. 72:395 (Feb. 8) 1919; Report of a Case of Cyanosis at Camp Jackson, S. C., Due to Poisoning from Shoe Dye, *ibid.* 72:592 (Feb. 22) 1919.

and gave the appearance of being intoxicated. The skin was cool and moist, the temperature normal. The heart and lungs were negative, as was the abdomen. During the examination a very decided odor of nitrobenzene became apparent, and this odor was traced to his shoes. Further questioning revealed the fact that the patient had had his shoes dyed immediately before going to the theater, and that he had sat in that poorly ventilated place all the afternoon breathing the fumes from his shoes. The shoes were very tight also, and direct absorption might have been a factor. The patient denied having a drink of any kind or any unusual food.

The man's shoes were removed and he was placed by the open window. Within an hour he was able to go home, with some assistance. He was advised to keep his shoes away from him and to stay by the open window. By the evening of the next day, his cyanosis had disappeared along with the subjective symptoms, and the patient was able to return to his work apparently none the worse for his experience.

GANGRENE OF LEG FROM THROMBOSIS OF POPLITEAL ARTERY FOLLOWING CORRECTION OF DEFORMITY*

JOHN JOSEPH NUTT, M.D., NEW YORK

This case is reported as bearing on the danger to which the popliteal vessels are exposed by forcible correction of deformities at the knee. Calot speaks of such an accident as "scarcely conceivable in spite of what is said in certain books. I have never observed it in my practice." Tubby says: "Others prefer sudden or complete reduction, although it must not be forgotten that such a procedure is accompanied by grave risks; these are rupture of the popliteal artery, which has occurred . . ."

REPORT OF CASE

W. B., aged 8 years, admitted to the State Hospital for Crippled and Deformed Children, Aug. 27, 1919, with a diagnosis of tuberculous disease of the knee, which had not been normal since the child was 2 years of age. Twice, for indefinite periods, the child had been in hospitals and some sort of operation had been done, as scars were present on the posterior surface. From the indefinite history, I assume that these operations were simply opening of abscesses. Discharging sinuses were said to have been present at different times.

The right knee was flexed, the thigh and leg much atrophied; the patient walked with a crutch, bearing no weight on the leg; there was no redness and no heat, the joint being immovable and in flexion of 135 degrees. Roentgenograms revealed that there had been an extensive rarefying osteitis, especially of the tuberosities of the tibia, followed apparently by a laying down of lime salts. The diagnosis from the examination was: arrested tuberculous disease of the knee.

September 14, the patient was placed under an anesthetic. Attempts made to straighten the knee were futile, no movement being possible. The knee was then opened and a resection performed. The tibia showed marked signs of previous activity of the infection, but fairly healthy bone was easily reached. The slice from the condyles exposed normal bone. Reduction of deformity was now accomplished but not without considerable force to overcome resistance in the posterior tissues. Plaster of Paris was applied from the toes to the groin. There was no complaint from the patient nor any signs of temperature until the sixth day, when the temperature shot up to 104, the pulse became correspondingly rapid, and discoloration of the toes appeared. Circulation in the toes had been examined twice daily and found to be excellent each time, so there is no question that it did not appear until the sixth day. The plaster of Paris was immediately removed, but gangrene extended up the leg and soon reached the junction of the upper and middle third, where it seemed to be arrested. The condition of the patient was so markedly septic that amputation was decided on.

October 1, this was performed at the junction of the middle and lower third of the femur. The femoral artery did not bleed and was found to be plugged. This part of the thrombus extended about one-half inch upward from the point of division. The recovery of the patient was satisfactory in every way. Careful dissection of the popliteal artery with slides of sections, by Dr. Alexander Frazer, showed the existence of the thrombus originating at the beginning of the posterior tibial artery and extending upward, as pointed out above, to the point of amputation. Dr. Fraser considers it without doubt thrombus of septic origin, and not traumatic. As the wound, from the day of resection, at no time showed signs of infection, I believe the infection must have arisen from an old nidus, which was aroused to activity by the traumatism at the time of operation. If this is correct, we may consider this case an evidence of the danger of forcibly overcoming a deformity when scar tissue is present; but it should not be considered as one of thrombosis arising from a traumatic injury to the vessel's walls from the correction of the deformity.

853 Seventh Avenue.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

STREPTOCOCCUS VACCINE (See New and Nonofficial Remedies, 1920, p. 290).

Gilliland Laboratories, Ambler, Pa.

Streptococcus Vaccine.—Made from hemolytic streptococci, 50 per cent., viridans (green-producing) streptococci, 40 per cent., and non-hemolytic streptococci, 10 per cent. (a number of strains of each type are included), and suspended in physiological solution of sodium chloride; three cresols, 0.25 per cent. is used as a preservative. Marketed in packages of four syringes containing, respectively, 125, 250, 500 and 1,000 million killed bacteria; in packages of four 1 Cc. ampules containing, respectively, 125, 250, 500 and 1,000 million killed bacteria; also in vials of 5, 10 or 20 Cc. containing 1,000 million killed streptococci per Cc.

Dichloramine-T-Abbott (See New and Nonofficial Remedies, 1920, p. 139).

The following dosage form has been accepted:

Tablets Dichloramine-T-Abbott, 4.6 grains.—Each tablet contains dichloramine-T-Abbott 4.6 grains.

SOLUTION ARSPHENAMINE-LOWY.—An aqueous 0.5 per cent. solution of arspenamine, possessing the proper degree of alkalinity.

Actions and Uses.—The same as those of arspenamine (see New and Nonofficial Remedies, 1920, p. 36).

Dosage.—Solution Arspenamine-Lowy is supplied in ampules of 80 c.c. and 120 c.c. These ampules should not be used after the date stamped on the label of each package or if the degree of coloration of the solution is greater than that of a control tube which accompanies the package.

Prepared by the Lowy Laboratory, Inc., Newark, N. J. U. S. patent and trademark applied for. Licensed for interstate sale by the U. S. Treasury Department under the "act to regulate the sale of viruses, serums, toxins and analogous products" as conforming to the regulations for the control, sale and manufacture of arspenamine, issued June 30, 1919.

Ampules Solution Arspenamine-Lowy 80 Cc.—Each ampule contains solution arspenamine-Lowy 80 Cc. (representing arspenamine 0.4 Gm.): a sterile needle for intravenous injection and sterile rubber tubing are supplied with each ampule.

Ampules Solution Arspenamine-Lowy 120 Cc.—Each ampule contains solution arspenamine-Lowy 120 Cc. (representing arspenamine 0.6 Gm.): a sterile needle for intravenous injection and sterile rubber tubing are supplied with each ampule.

Solution Arspenamine-Lowy is prepared by dissolving arspenamine (using the particular brand desired by the purchaser) in fresh, distilled water, carefully neutralizing with sodium hydroxide solution and scaling in ampules under a partial vacuum, the concentration being adjusted so that 100 Cc. of solution represents 0.5 Gm. of arspenamine.

Solution Arspenamine-Lowy is a clear yellow liquid which, depending on the brand of arspenamine used, varies from a canary yellow to a greenish yellow.

* Read before the Section on Orthopaedic Surgery, Academy of Medicine, Jan. 23, 1920.

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SATURDAY, MAY 29, 1920

PELLAGRA

The etiology of pellagra has attracted the consideration of a number of investigators who have been able to study it on an unusually large scale and with exceptional facilities. In this country the zeist theory, which related pellagra in some way to the dietary use of maize and maize products, has been finally abandoned. An exclusive diet of corn is unquestionably inadequate; and corn damaged by microbotic changes may well be harmful at times to persons ingesting it. But no adequate review of the actual incidence of pellagra, as it has occurred in different places and among different peoples, will any longer justify the assumption that the pathogenesis of the disease is concerned primarily with a corn factor. Pellagra may occur without the use of corn.

Epidemiologic studies showing peculiar localized occurrences of pellagra have fostered the natural conclusion that infection takes a part in its appearance. In a noteworthy contribution published in 1914, Goldberger¹ of the U. S. Public Health Service presented striking facts antagonistic to the theory of a pellagra infection but favorable to the long alleged relationship between diet and the disease. He pointed out that in some institutions, among the inmates of which pellagra was either epidemic or had long been endemic, the nurses and attendants, drawn from the class economically identical with that most affected in the population at large, appeared uniformly to be immune, although living in the same environment and under the same conditions as did the inmates, and many of them, also in frequent and intimate contact with cases of the disease. Neither contact nor insect transmission seemed capable of explaining this remarkable exemption of one of the two classes of residents. The suggestion was made that the explanation was to be found in a difference in the diet of the two groups; for it was observed that although the nurses and attendants appeared to receive exactly the same food as did the inmates, there was, nevertheless, a difference in the diet of the two groups, in that the nurses and

attendants, being in a favorable position to choose from what was provided, selected the best for themselves. They were also free to supplement the institution diet in any manner they pleased.

Since 1914, the study of the pellagra problem has been vigorously prosecuted by the U. S. Public Health Service. The continued investigations conducted by Goldberger and his co-workers² have not altered the original suggestion that pellagra can be eliminated by attention to the dietary factor. The trend of the latest evidence³ is to show that basically the diets of the nonpellagrous and of the pellagrous households (of comparable economic status) in the communities and at the season studied are much the same, the only outstanding difference being a more liberal supply of the foods of the animal protein group in the diet of the nonpellagrous households. The difference between these diets seems to be one of degree, not of kind.

In practical experience, then, the preventive value of milk and of fresh meat seems to have been demonstrated. We are now assured by the latest government report that the total fuel supply—the calories of the diet—is not an essential factor in the production of pellagra. It is admitted that the total intake of protein in pellagrous households is apparently somewhat smaller than is the case in the nonpellagrous homes, but the minimum of safety is not believed to be reached in the region investigated. There is no overconsumption of carbohydrates, on which some stress has been placed in certain quarters. Goldberger therefore believes that meat and milk function advantageously by improving the quality of the protein in diets that have only a "narrow margin of safety." A deficiency of some essential amino-acid or acids is thereby prevented. This is in harmony with the recent report of a committee of inquiry regarding the prevalence of pellagra among Turkish prisoners of war in Egypt, which denies evidence of special infection in pellagra and ascribes it to a deficiency in protein, as gaged by its biologic value.

Goldberger's review admits, further, that the diets of the pellagrous households have a smaller average supply of the recognized vitamins than do those of the nonpellagrous, the disparity in supply being particularly marked with respect to the fat-soluble A factor. Furthermore, the mineral make-up of the diets of the nonpellagrous households will tend to be superior to that of the pellagrous households, or, at least, it is less likely to be deficient either as a whole or in any

2. Goldberger, Joseph: Pellagra—Causation and a Method of Prevention, J. A. M. A. **66**: 471 (Feb. 12) 1916. Goldberger, Joseph; Waring, C. H., and Willets, D. G.: The Prevention of Pellagra, Pub. Health Rep. **30**: 3117, 1915. Goldberger, Joseph, and Wheeler, G. A.: Experimental Pellagra in the Human Subject, *ibid.* **30**: 3336, 1915; The Experimental Production of Pellagra in the Human Subject by Means of Diet, Bull. 121, Hyg. Lab., U. S. P. H. S., February, 1920. Goldberger, Joseph; Wheeler, G. A., and Sydenstricker, Edgar: A Study of the Diet of Nonpellagrous and of Pellagrous Households, J. A. M. A. **71**: 944 (Sept. 21) 1918.

3. Goldberger, Joseph; Wheeler, G. A., and Sydenstricker, Edgar: A Study of the Relation of Diet to Pellagra Incidence in Seven Textile-Mill Communities of South Carolina in 1916, Pub. Health Rep. **35**: 648 (March 19) 1920.

1. Goldberger, Joseph: The Etiology of Pellagra, Pub. Health Rep. **29**: 1683, 1914.

of its elements. There is considerable evidence that lack of the so-called water-soluble or antineuritic vitamin is not the foremost dietary defect in the genesis of pellagra, if, indeed, it is of any significance whatever. Milk, and to a lesser degree meat, may remedy the inorganic deficiency, if any exists. It is not irrational to suspect a possible concurrence of conditions facilitating dietary deficiencies of more than one sort. As stated in *Public Health Reports*, the somewhat lower plane of supply, both of potential energy and of protein, in the diets of the pellagrous households, though apparently not an essential factor, may, nevertheless, be contributory by favoring the occurrence of a deficiency in intake of some one or more of the essential dietary factors, particularly with diets having only a narrow margin of safety.

Further research is almost certain to discover more specifically the precise shortcomings in the food supply which are responsible for pellagrous symptoms. In the affected regions of the South, however, it seems clear that an increase in the availability of milk—perhaps by increasing cow ownership, as Goldberger and his colleagues propose—and of fresh meat by all-year-round meat markets at present represents the important practical measure to prevent and control pellagra.

THE FUMES OF IODIN

One of the important factors connected with therapeutics as a science is the method of administration of medicinal substances. Drugs may be given by mouth, by hypodermic or intravenous injection, by inhalation, by inunction or, less frequently, by the use of other entrances into the body. In choosing a method, the physical characters of the substance to be administered and the immediate effects of the substance on the body issues with which it may come in contact must be especially taken into consideration.

These factors apply particularly in the case of substances like iodine, arsenic, mercury or the biologic products in which the mode of administration radically modifies the action. For some time manufacturers have urged substitutes for tincture of iodine, claiming that their substitutes were free from the undesirable properties of the tincture, and, at the same time, possessed special virtues which the tincture could not possess. More recently, attention has been directed to the administration of iodine in the form of vapor. The diffusing and penetrating powers of gases have particularly attracted the attention of therapists, since by this method drugs may be applied to rather inaccessible portions of the body, such as the lining of the lungs, the throat and the mucous membranes of the genito-urinary tract. Furthermore, it has been asserted that iodine in the form of fumes has increased combining powers, and is thus far more potent in effect than iodine administered by any other route. There do not seem to have been any adequate scientific investi-

gations of the subject, however, until the recently published results of Luckhardt and his collaborators¹ at the University of Chicago. In their experiments, both on man and on animals, accurately determined quantities of iodine were vaporized in a special device, and the fumes applied to the skin. At the same time, the tincture was applied to the skin of other persons as a control. Iodine was also applied to the skin of dogs with hyperplastic thyroid glands, and the effects on the gland, before and after administration, studied. Dogs were also used to determine whether iodine fumes were absorbed from the lungs. As a result of these investigations, which are reported in great detail, it was found that iodine, when deposited on the skin in the form of fumes, is absorbed. More iodine was recovered from the urine, following the application of the tincture, than was recovered following the use of the fumes. This result is explained by the authors on the ground that probably more iodine was actually applied, and that the iodine so deposited was held in combination with the protein during the process of coagulation of the latter by the alcohol of the tincture, leading to a state of continuous absorption. It is probable, furthermore, that the iodine deposited on the skin in the form of fumes is revaporized to some extent by the heat of the body.

Most important were the effects of iodine administered intratracheally in the form of fumes. Iodine given in this way seems to be rapidly and completely absorbed; but it was found that the administration of the fumes of iodine by inhalation through the respiratory passages, even in small quantities, is fraught with great danger. Such administration induces dyspnea; and when it is given in large quantities, acute and fatal pulmonary edema ensues within twenty-four hours. When respiratory disorders are present at the time of administration, the fatal edema supervenes very quickly. Thus far, no device designed to deliver fumes controls the dosage.

It is interesting to consider, as do the authors, the fact that the fumes of iodine have the same effect as those of two other halogens, bromine and chlorine. The results of these experiments with iodine fumes on the dog, as shown by necropsy findings, are practically identical with those reported by military surgeons as found in soldiers gassed with chlorine during the war.

The results of these researches are additional evidence as to how scientific research may confirm or deny conclusions based on empiric therapeutic observations. The work may well serve as a model for similar experiments, now being made, on the therapeutic use, intravenously, of such substances as nonspecific proteins or organic preparations of toxic drugs. The patient should at least have the chance that is afforded him by preliminary experiments, scientifically performed on animals in the research laboratory.

1. Luckhardt, A. B.; Koch, F. C.; Schroeder, W. F., and Weiland, A. H.: The Physiological Action of Fumes of Iodine. *J. Pharmacol. & Exper. Therap.* 15:1 (March) 1920.

FACTORS IN AVERTING BACTERIAL INVASION THROUGH THE UPPER AIR PASSAGES

The upper air passages, including the mouth and nose, form an important portal of entry for micro-organisms into the body. The protection of the body against the dangerous invaders is varied in type. The blood may contain components which have a germicidal character or render innocuous the toxic products of bacterial growths. Long before the bacteria have an opportunity to reach the circulation, however, they may be inhibited in growth or destroyed. Thus, as we have pointed out,¹ the nasal mucosa may sometimes function to prevent infection from the virus of poliomyelitis. In the dissemination of the hemolytic streptococci which are so commonly present in the throat and tonsils, they may find their way into the alimentary canal; indeed, there is reason to suppose that they are constantly passing beyond the pharynx in large numbers. Yet so long as a potent gastric secretion is available, this type of micro-organism fails to pass beyond the stomach.²

As an illustration of the opposition offered by the mouth and its secretion to the free development of certain micro-organisms that have found entrance orally into the body, investigations by Bloomfield³ at the Johns Hopkins Hospital may be cited. He swabbed *Sarcina lutea*, a species nonparasitic and nonpathogenic for human beings, in large amounts on the tongue or nasal septum, or introduced it into the tonsillar crypts. Within a short time, usually from one to two hours, the micro-organisms could no longer be recovered there. Bloomfield introduced such large numbers of *Sarcina*, in proportions vastly greater than would be brought in by any natural mode of infection, that their rapid disappearance attests the remarkable efficiency of the mechanism present in the upper air passages for disposing of at least the particular organism mentioned. His analysis of the possible factors active in effecting this disposal indicated that the reaction of mouth secretions, mechanical action and other mouth bacteria play little if any part, but that the saliva and mouth secretions exert a prompt and marked bactericidal effect.

That different bacteria may be disposed of in quite unlike manner is further indicated by Bloomfield's latest studies of the fate of *B. coli* and *Staphylococcus albus*. In contrast with *Sarcina*, these are parasitic in human beings; and though usually nonpathogenic, they may at times produce disease. When they were swabbed on the tongue or nasal septum they usually disappeared within twenty-four hours; but when they were introduced into tonsillar crypts they could still

be recovered after somewhat longer intervals. In no case was a permanent carrier state set up. In explanation of the disappearance of *B. coli* and *Staphylococcus albus*, it seems unlikely that the mouth secretions play the part of the destructive or inhibitive agent. Since, however, inert particles placed in the upper air passages also disappeared at about the same speed as the bacteria, it is probable that mechanical influences are here involved; that is, "the organisms probably disappear because they are mechanically removed more rapidly than they multiply."

Evidently, then, protection must no longer be thought of as constant or uniform in character. Different species or types of micro-organisms may be disposed of in quite unlike ways in the upper air passages. The mouth secretions, the normal mechanical flushing processes in the mouth, nose and lacrimal passages, the unexplained potencies of the mucosa, the gastric juice, have all been demonstrated to take part in certain cases. What other mechanisms, if any, may aid in removing invading bacteria remains to be seen.

FACTS AND FICTIONS REGARDING TUBERCULOSIS

Now and then the public press stirs up the people to the possible menace to health which some of our habits may entail. If the warnings are justified on the basis of evidence, they must be welcomed. At the present time the public is particularly receptive to the lessons of science. The war demonstrated that science is a potent factor in life and in the world's work. The scientist must therefore be on his guard lest fiction creep in where facts are wanted; in other words, in order to retain a respectful hearing he must seek to prevent unfounded statements and half-baked theories from gaining recognition.

Recently the danger of kissing has been heralded anew in connection with tuberculosis. Although Richard Cabot¹ has warned the layman that osculation might well be dispensed with, the practice has not yet been abandoned. Hence it may be worth while to refer to the latest bacteriologic facts established by convincing methods.² Patients with tubercle bacilli in the sputum and saliva kissed sterile Petri dishes at different times in the day. Viable tubercle bacilli were demonstrated to be present at certain times in the day, though by no means always. Soon after coughing, the danger of transmission by kissing seems to be particularly marked. The possibility of transference of the micro-organism of tuberculosis to eating utensils, and thence if not cleansed to a second person, has likewise been borne out. On the other hand, the studies of the experts at the Trudeau Sanatorium² suggest

1. Protection Against Poliomyelitis, editorial, J. A. M. A. 74: 952 (April 3) 1920.

2. Alimentary Protection Against Hemolytic Streptococci, editorial, J. A. M. A. 74: 1260 (May 1) 1920.

3. Bloomfield, A. L.: Bull. Johns Hopkins Hosp. 30: 317 (Nov.) 1919; The Fate of Bacteria Introduced into the Upper Air Passages, Am. Rev. Tuberc. 3: 553 (Nov.) 1919.

1. Cabot, R. C.: What Men Live By, Boston, Houghton Mifflin Company, 1914.

2. Brown, Lawrason; Petroff, S. A., and Pesquero, Gilberto: Etiological Studies in Tuberculosis, Am. Rev. Tuberc. 3: 621 (Dec.) 1919.

that the danger of the dust of rooms in a health resort has not yet been conclusively proved, and their experiments tend to belittle it. The same thing is true of the danger of eating utensils properly cleaned, of sanatorium telephone receivers, of door knobs handled by patients, and similar possibilities. Undue prejudice against the tuberculous would be a misfortune.

To the problem of laboratory diagnosis and prognosis of tuberculosis the Trudeau laboratories have also lately made contributions.³ It is pointed out that the number of tubercle bacilli present in a specimen as judged by the rough methods of examination usually employed does not give any definite information regarding pathologic activity that their mere presence does not afford. The same thing is true of such morphologic features as short bacilli, even in clumps. Much's granules and the presence of tubercle bacilli within certain cells in the sputum are likewise regarded as of no especial importance for the determination of pathologic activity, though elastic fibers in the sputum always are. Tubercle bacilli in the stools of adults have at least the same significance in respect to pathologic activity as when they occur in the urine. Of doubtful or negative value are various urine tests, namely, the diazo, urochromogen or methylene blue reactions. The mere figures of red and white blood cells are likewise without import.

Current Comment

THE MACROPHAGES IN BRAIN REPAIR

The rôle of the phagocytic cells that have of late been designated as macrophages, in some of the processes involving the repair and regeneration of injured bone, has recently been referred to in THE JOURNAL.⁴ By the preliminary use of so-called vital stains such as trypan blue and other azo dyes of the benzidiazine series—pigmentary substances which these phagocytic cells engulf and store with avidity—the location of the macrophages in various parts of the organism has become easier. Thus, Macklin⁵ found the dye-containing cells abundant in tissues immediately surrounding bone fractures. He concluded that their mobilization in this region was for the purpose of assisting in the removal of the waste material, the result of the injury." This type of response in damaged and inflamed tissues is not dependent on the presence of bacteria. The attraction of cells with potent phagocytic power is not due to the chemotropism of microorganisms. It occurs in aseptic tissues and in widely different parts of the body. Thus, what is true in the case of bone repair has been duplicated in instances

of brain traumatism in recent researches of the Macklins.⁶ When lesions occur in the cerebral nervous substances the defunct tissue is rapidly absorbed, and this is accomplished by a temporary cellular mechanism, made up of young blood vessels, phagocytes and connective tissue—in fact, a granulation tissue. Fully developed macrophages soon begin their activity, and remain in such healing lesions for long periods. The dye-stained phagocytes may ingest considerable lipoid material in the injured spots, and sometimes entire blood corpuscles are engulfed. According to Macklin, the macrophages seem to multiply by mitosis at the site of injury rather than to be transformed out of lymphocytes. They are apparently also recruited in part from the neuroglia, for hypertrophied neuroglia cells containing dye granules and other material may be found in the area of inflammation. Some also arise from the endothelium of the blood vessels; for endothelial cells in the injured region may become enlarged and filled with foreign material. They then behave like the other macrophages. Whether it is at the border of an infected abscess or in the midst of an aseptic area of defect, the function of the macrophages apparently is to ingest and transfer the products of tissue disintegration. Improved histologic technic has brought these beneficent scavengers into new and deserved prominence.

ORIGIN OF THE ACETONE SUBSTANCES IN THE BODY

The so-called acetone substances—acetone, acetoacetic acid and beta-oxybutyric acid—are excreted by the organism under conditions in which the metabolism, for some reason, is more or less deranged. That they are not derived in this way directly from sugar is made probable by the fact that the acetone substances are most likely to make their appearance when there is carbohydrate starvation; and the output may be checked in certain cases by carbohydrate administration. On the other hand, there is evidence for the belief that the acetone substances may be derived from both fats and proteins. In the case of the latter it is their amino-acid derivatives that are concerned in the ketogenesis. Not all of the amino-acids, however, are capable of contributing to an increased output of acetone substances under the determining conditions. Some of the amino-acids that are able to yield sugar in the organism doubtless may actually have an antiketogenic power. Current ideas as to the seat of formation of the acetone substances, which the clinician has come to look for so commonly in routine diagnostic procedures, have been derived from studies on surviving organs. Perfusion of these with blood containing various ketogenic substances in solution has shown that the liver may act as a place of formation.⁷ As experiments on the perfused muscles, kidneys and lungs, respectively, yielded negative results,

3. Brown, Lawrason; Heise, F. H.; Petroff, S. A., and Sampson, L. L.: A Preliminary Study of Clinical Activity, *Am. Rev. Tuberc.* 612 (Dec.) 1919.

4. Some Factors in Bone Repair, editorial, 74: 604 (Feb. 28) 1920.

5. Macklin, C. C.: Bone-Repair in the Rat Vitrally Stained with Trypan Blue, *Anat. Rec.* 14: 43, 1918; The Development and Function of Macrophages in the Repair of Experimental Bone Wounds in Rats Vitrally Stained with Trypan Blue, Publication 272, Carnegie Institution of Washington, Contributions to Embryology, No. 27, p. 1, 1919.

6. Macklin, C. C., and Macklin, M. T.: Study of Brain Repair in the Rat by the Use of Trypan Blue, *Arch. Neurol. and Psychiat.* 3: 353 (April) 1920.

7. Embden and Kalberlah: Ueber die Acetonbildung in der Leber, I, *Hofmeister Beitr.* 8: 121, 1906. Embden, Salomon and Schmidt: Ueber Acetonbildung in der Leber, *Hofmeister Beitr.* 8, 1906. Magnus-Levy: Die Acetonkörper, *Ergebn. d. inn. Med.* 1: 352, 1908.

attention has become more directly focused on the liver as the chief organ involved in the perverted metabolism exhibiting ketogenesis. It has been known for some time, in corroboration of the presumable importance of the liver in this function, that the output of acetone substances is lower in dogs bearing an Eck fistula than in normal animals of the same species. This surgical device shunts the portal blood directly into the venous circulation without first passing through the liver, the blood supply of the latter being limited to that of the hepatic artery.⁸ Kertess⁹ has verified this, particularly under conditions favorable to the exhibition of ketogenesis under the usual circumstances. When, however, a reversed Eck fistula operation was done whereby the blood supply of the vena cava was entirely sent through the liver before it returned to the heart for redistribution, acetonuria was greatly augmented. Hence, the dependence of the intensity of the output of acetone substances on the degree of participation of the liver in the circulation of acetone precursors—of the amino-acid leucin in the experiments of Kertess⁹—places this organ in the forefront of importance as the seat of ketogenesis more emphatically than ever.

THE SHORT AND CATCHY PROPRIETARY NAME

A laborer went to a Brooklyn physician for treatment and was given three prescriptions. One of the prescriptions, according to the *Food and Drug Bulletin* of the Department of Health, City of New York, called for "Laxol," the word being written on a piece of blank paper without directions. The drug clerk misread the prescription and dispensed an "original" bottle of "Lysol" which bore the usual poison label with skull and cross bones. The man drank the entire three ounces of Lysol and died half an hour later. The case is now in the hands of the District Attorney, the drug clerk being held under \$10,000 bail. "Laxol," as our readers know, is castor oil sweetened with saccharin and flavored with peppermint. There is no excuse for prescribing the product. The official Aromatic Castor Oil (Ol. Ricin. Arom.) of the National Formulary would answer every purpose served by the proprietary preparation.

A RECIPE FOR OLD AGE

In the memoirs of Baron de Grimm, written between the years 1753 and 1790, appears an account of the death of a member of the French Academy, a physician of eminence, one John J. de Mairan, at the age of 93. "He had arrived at this great age," say the memoirs, "without any infirmity, and preserved his good looks, his activity, as well as the entire use of his faculties to the last moment of his life." Until his last illness he scarcely missed going out a single day; he lived in the best society, dined out almost every

day, and passed the afternoon in making visits and the evening among his books. "He was exactly the kind of a person to live to a great age," says de Grimm; "his head was well formed, he had great equanimity of temper, great moderation in his passions, or rather he was destitute of passions; he had sensibility enough to engage the regard of those with whom he associated, and to contract those ties of intimacy which were sufficient for him, which have not indeed the charms of friendship, but which do not draw after them the same obligations. He had not warmth of heart enough to feel the necessity of an attachment which rules despotically; of a friend who disposes of us at pleasure, who forms the happiness or the misery of our lives: he had much prudence and foresight, paid great attention to himself, and was very methodical in whatever he did." Is this a text on geriatrics?

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Personal.—Dr. Arthur F. Stotts, Galesburg, who was shot, May 8, is reported to be improving slowly.—Dr. Elmer L. Crouch, Jacksonville, has become medical director of the Sanatorium for Nervous and Mental Diseases at Stamford, Conn.

Secretaries' Conference.—The annual meeting of the Secretaries' Conference was held in Rockford, May 18, and Dr. Henry A. Chapin, Jacksonville, was elected president; Dr. Lee O. Frech, White Hall, vice president, and Dr. Thomas D. Doan, Scottsville, secretary (reelected).

Hospital Notes.—The Moultrie County Red Cross and Tuberculosis Association have accepted the offer by W. A. Steele of a cottage in Sullivan to be used for a county hospital.—A site for the McDonough County Tuberculosis Sanitarium has been purchased at Bushnell, the consideration being \$2,000. Ground has been broken for a new nurses' home, which is being erected at a cost of \$125,000. The plan calls for a three-story brick building which is to be thoroughly modern.

Public Health Nursing Experiment.—The Illinois State Tuberculosis Association and Chicago School of Civics are cooperating in an interesting nursing experiment. Fourteen nurses from the class of public health nursing have been assigned for the month of May to make an extensive health and sickness survey in fourteen counties of the state. By this plan it is hoped to develop a knowledge of the tuberculosis situation and to induce the counties to support permanent public health nurses.

State Chapter of World War Medical Veterans Organized.—More than 100 medical officers who had served during the World War assembled in Rockford, May 19, at the call of Dr. John M. Dodson, Chicago, and organized the Illinois Chapter of the Medical Veterans of the World War, electing Dr. Joseph R. Hollowbush, Rock Island, as vice president for Illinois of the national organization and chairman of the state chapter; Dr. Wilbur H. Gilmore, Mount Vernon, secretary-treasurer, and Drs. Malcolm L. Harris, Chicago, and Samuel M. Wylie, Paxton, councilors.

State Medical Society Meeting.—The seventieth annual meeting of the Illinois State Medical Society was held in Rockford, May 18 to 20, under the presidency of Dr. James W. Van Derslice, Oak Park. On the second day, the president delivered his annual address; Dr. George W. Crile, Cleveland, the oration on surgery, entitled "Surgery of the Gallbladder and Ducts," and Dr. William Engelbach, St. Louis, the oration on medicine, entitled "Disease of the Pituitary Gland." Both of the orations were illustrated by stereopticon views. The following officers were elected: president, Dr. William F. Grinstead, Cairo; president-elect,

8. Fischler and Kossow: Vorläufige Mitteilung über den Ort der Acetonkörperbildung, *Deutsch. Arch. f. klin. Med.* **111**: 479, 1913. Kossow: Leber und Acetonkörperbildung, *ibid.* **112**: 539, 1913.

9. Kertess, E.: Zur Frage des Entstehungsortes und der Entstehungsart der Acetonkörper, *Ztschr. f. physiol. Chem.* **106**: 258 (July) 1919.

Charles E. Huniston, Chicago; secretary, Dr. Wilbur H. more, Mount Vernon (reelected); treasurer, Dr. Andrew Markley, Belvidere (reelected). Springfield was selected the place for the next meeting.

Chicago

Joint Meeting.—May 26, the Chicago Medical Society and Chicago Ophthalmological Society held a joint meeting at which Dr. Dwight C. Orcutt read a paper on "The Importance of Early Treatment for Strabismus," and Dr. Richard Twinen, one on "Preventable Blindness," illustrated by lantern slides.

Personal.—Dr. Wesley Hamilton Peck, formerly president of the ophthalmologic section of the Illinois State Medical Society, was presented with a silver loving cup at the Rockwell meeting, May 19, as an appreciation of his efforts in behalf of the section. Dr. Willis O. Nance made the presentation address.—William Gardner Cottrell, Ph.D., was awarded the tenth William Gibbs Medal at a dinner tendered by the Chicago Section of the American Chemical Society at the City Club, April 21.

INDIANA

New Hospital.—The Northwestern Indiana conference of Christian church plans to build a hospital on the banks of the Tippecanoe River near Ora. The proposed institution will be maintained by the proceeds from a large endowment fund.

Fraudulent Eye Specialists.—The state board of health has received information from people living in Charlestown, that two men giving their names as Dr. Harper and Dr. Van Hook are touring the country representing themselves as agents of the state board of health, and as eye specialists who carry instruments for testing the eyes of patients, whom they secure in the name of the state board of health. It is noted that their practice is for the most part on the eyes of children. According to Dr. John N. Hurty, secretary of the state board of health, neither of the men is a representative of the state board and a warning is issued against them.

IOWA

Personal.—Dr. Peter G. Grimm, Spirit Lake, has been appointed local surgeon of the Chicago, Milwaukee and St. Paul Railway.—Dr. Jeannette F. Throckmorton, Mason City, sailed for Europe, May 1.

Health Center Organized.—On May 12, Sioux City Health Center was formally organized and the building was opened for inspection. The principal address was given by Dr. Herman M. Adler, Chicago, state criminologist of Illinois, and the opening day was known as Florence Nightingale day.

Medical Women Elect Officers.—At the annual meeting of the State Society of Iowa Medical Women, held May 11, Dr. Anna A. Beach, Rockwell City, was elected president; Dr. Annie M. Coleman, Des Moines, vice president; Dr. Mary K. Ward, Iowa City, secretary, and Dr. Eleanor M. Hutchinson, Des Moines, treasurer.

KANSAS

State Board Appointments.—Drs. William M. Earnest, Washington; Charles H. Ewing, Larned, and Clay E. Coburn, Kansas City, have been appointed to succeed themselves as members of the state board of health, for a period of three years.

State Medical Society Meeting.—The fifty-fourth annual meeting of the Kansas Medical Society was held in Hutchinson, under the presidency of Dr. Elmer E. Liggett, Oswego. Topeka was chosen as the place of next meeting and the following officers were elected: president, Dr. Clemens Appel, Hutchinson; vice presidents, Drs. John R. Scott, Topeka (reelected), Jacob L. Everhardy, Leavenworth, and Albert Randles, White City; secretary, Dr. John F. Hassig, Kansas City (reelected); treasurer, Dr. Lewis H. Munn, Topeka (reelected).

MARYLAND

Gift to Johns Hopkins.—Instead of \$2,000,000, the Johns Hopkins University will receive \$5,541,401, under the terms of the will of the late Capt. Joseph Raphael de Lamar of New York. According to the terms of the will, the residuary estate is to be divided equally among the medical schools of Harvard, Columbia and Johns Hopkins universities, for the

advancement of preventive medicine and the study of dietetics.

State Medical Association's New Officers.—At the annual meeting of the Medical and Chirurgical Faculty of Maryland, held in Baltimore, May 11, 12 and 13, the following officers were elected: Dr. William S. Gardner, Baltimore, president; Drs. James H. Mason Knox, Jr., Baltimore, Arthur H. Hawkins, Cumberland, and Charles F. Davidson, Easton, vice presidents; Dr. Joseph Albert Chatard, Baltimore, secretary, and Dr. Charles E. Brack, Jr., Baltimore, treasurer.

Japanese Physicians Visit Baltimore.—The first of a large contingent of Japanese physicians, professors and students who are leaving shortly for Europe to begin their studies of European methods arrived in Baltimore recently. They are Dr. T. Hayao, assistant professor of medicine, Imperial University of Tokyo; Dr. B. Kure, a graduate of Columbia University, New York; Prof. B. Senju of Tokyo; Dr. C. Ookuni of Osaka, a graduate of Philadelphia and Boston dental colleges, and Dr. Shimade of Tokyo.

Praise for School for Blind.—The Red Cross Institute for the Blind at Evergreen, Baltimore, is the most advanced school for the war blind that has been established by any allied country, in the opinion of Capt. George Delvaux, head of Queen Elizabeth's Institute for the War Blind in Belgium. Captain Delvaux, who is studying methods at Evergreen, has visited schools for civilian and war blind in Italy, France and England. He came to Evergreen at the suggestion of Queen Elizabeth to whom he is directly responsible for the administration of the school for the blind established by her several months ago.

Final Transfer of Soldiers at Fort McHenry Hospital.—The transfer of 219 patients from U. S. Army General Hospital No. 2, Fort McHenry, to the Walter Reed General Hospital at Washington, May 18, marked the closing days of the fort as a United States Army hospital. The detachment, consisting of thirty-one "litter patients" and 188 "sitting patients," were taken to Washington, D. C., on a special hospital train. The patients transferred included twenty-six officers, 191 enlisted men and two civilians, and represented 177 surgical and forty-two medical cases. The U. S. Public Health Service will take over the fort, May 31.

Personal.—Dr. Henry R. Carter, assistant surgeon-general, U. S. P. H. S., has returned to Baltimore after spending two and one-half months with the Rockefeller Foundation party fighting yellow fever in the Piura district of northern Peru. He hopes to return to Peru within a month, if his health permit, to take charge of the work, succeeding Gen. William C. Gorgas, adviser in sanitation for Peru, who has been called to South Africa.—Dr. Robert M. Lewis recently flew from Baltimore to Cambridge, Md., in a hydroplane in response to a request to hurry to the Cambridge Hospital where many surgical cases had accumulated. The trip consumed fifty-five minutes, while by boat it would have taken four hours.—Surg. James A. Nydegger, U. S. P. H. S., on duty at Baltimore has been transferred to Quebec for duty, and after a thirty-day leave of absence, will assume his new duties. Senior Surg. Thomas R. Payne will come to Baltimore to take charge of the hospital and other public health matters in this city.

MASSACHUSETTS

Healer Sentenced to Imprisonment.—"Prof." Fred Laplante, Worcester, on May 3, is said to have been sentenced to the house of correction for a term of six months on three charges of larceny, all three sentences to run concurrently. Three other charges alleging practice of medicine without a certificate or registration were placed on file.

Qualification Vaccination of All Schoolchildren.—The Somerville Medical Society has placed itself on record as advocating without qualification vaccination of all schoolchildren as a protection to the community against the ravages of smallpox, and as expressing its condemnation of Senator Joseph O. Knox, Somerville, who allowed his personal feelings to influence him on public measures, as a betrayer of public trust. The bill extending the law regarding the vaccination of children of public schools to children who attend private schools was defeated. Senator Knox is said to have been active in the defeat of this bill and also in the support of a bill to repeal the existing laws regarding vaccination.

Personal.—Dr. Robert B. Greenough, Boston, has accepted the chairmanship of the New England Committee on the Control of Cancer, and has already taken steps to effect a district organization.—William J. Brickley, Boston, has

been appointed medical examiner (coroner) for Sussex County succeeding Dr. Oscar Richardson, Boston, resigned. —Dr. Theobald Smith has been given the M. Douglas Flattery medal and \$500 in gold by the Harvard corporation. The reason of the award is given as follows: "Theobald Smith, working on Texas fever in cattle, demonstrated for the first time that the micro-organism of an infectious disease could be transmitted through the agency of an invertebrate host." —Dr. Milton J. Rosenau has been elected to the Charles Wilder professorship in preventive medicine and hygiene, founded by Charles Wilder and Miss T. E. Wilder, Cambridge.

Report of Communicable Diseases.—The department of public health has sent an appeal to the physicians of the state calling attention to the fact that a few physicians have failed conspicuously to fulfil their obligations regarding the reporting of communicable disease. For this reason the division of registration in medicine of the department of civil service and registration and the department of public health are cooperating in the following manner: Names of physicians who do not report cases of diseases dangerous to the public health to their local boards of health shall be furnished to the department of public health. The department of public health will present to the division of registration in medicine of the department of civil service and registration these names with the proper evidence of neglect to report such diseases. Where it is positively known that the physicians persistently neglect and refuse to report such diseases, a hearing will be granted by the division of registration in medicine of the department of civil service and registration to the offending physician, giving him the opportunity to show why his license to practice medicine should not be suspended.

MICHIGAN

Society Organized.—At the meeting of the physicians of the medical societies of Antrim, Charlevoix, Emmet, Grand Traverse, Leelanau and Wexford counties held in Charlevoix, the Northwestern Michigan Medical Society was organized with the following officers: president, Dr. Robert B. Armstrong, Charlevoix; vice president, Dr. George W. Fralick, Maple City, and secretary-treasurer, Dr. Buell H. Van Leuven, Petoskey. Arrangements were made to hold a clinic in Petoskey in September and another at Cadillac later in the year.

MISSISSIPPI

Personal.—Dr. Theodore P. Barnes has been elected superintendent of the state colony for feeble-minded. —Dr. Hiram Byrd, director of the department of hygiene of the University of Mississippi, has resigned to accept the position of director of the department of hygiene of the University of Alabama. —Dr. Francis M. Sheppard, Richton, has been appointed assistant superintendent of the Mississippi State Charity Hospital, Jackson.

New State Officers.—At the thirty-third annual meeting of the Mississippi State Medical Association held in Jackson, May 11 and 12, under the presidency of Dr. Felix J. Underwood, Aberdeen, Laurel was chosen as the next place of meeting, and the following officers were elected: president, Dr. John W. Barksdale, Winona; vice presidents, Drs. Horace H. Kinney, Okolona, William A. Johns, Corinth, and Lawrence B. Hudson, Hattiesburg; Dr. Thomas M. Dye, Clarksdale, secretary (reelected), and Dr. James M. Buchanan, Meridian, treasurer (reelected). The annual address was delivered by Dr. Seale Harris, Birmingham, Ala., on "Food Poisoning."

MISSOURI

Health Officers to Meet.—The week from June 14 to 19, inclusive, has been designated as public health week, and at this time the first formal conference of health officers ever held in the state will convene under the auspices of the University of Missouri School of Medicine and the state board of health.

New Officers.—At the annual meeting of the Southeastern Missouri Medical Association held in Farmington, Dr. Warren C. Patton, Cape Girardeau, was elected president; Dr. John A. Van Amburgh, Burfordville, vice president; Dr. Elam J. Nienstedt, Blodgett, recording secretary; Dr. William S. Hutton, Fomfelt, corresponding secretary, and Dr. William R. Goodykoontz, Caledonia, treasurer.

Occupational Therapy School.—A school for occupational therapy has been opened in the City Hospital at St. Louis under the direction of the Missouri Association for Occupa-

tional Therapy. A large room has been assigned for the workshop, fitted up with work benches and work tables some of which are specially designed for patients in wheel chair. Miss Cora Ault is superintendent of occupational therapy for the hospital, and with two assistants teaches handicraft to the patients. Similar schools have been in operation for some time in the City Sanatorium and the Barnes Hospital.

NEW JERSEY

"Christian Scientist" Fined.—Andrew Walker, a "Christian scientist" of Bloomfield, is said to have been convicted of manslaughter in connection with the death from diphtheria of his 9 year old daughter and sentenced, on May 10, to pay a fine of \$1,000. Walker failed to summon a physician and had the child treated by three Christian science practitioners.

Progressive Legislation.—During the present session of the New Jersey legislature, four bills of interest to physicians have been considered. Two of these providing for delaying the issuance of marriage licenses to sufferers from venereal disease have already been passed unanimously by both houses. The other two deal with the reporting by physicians of syphilis and gonorrhea and are drawn to provide state laws conforming to federal recommendations on the subject.

NEW YORK

New Public Health Centers.—Public health centers, including tuberculosis, venereal disease and dental clinics, and child welfare station have been established at Olean, Geneva and Fredonia.

Bill for Purchase of Radium.—There is at present before the New York State Legislature a bill known as "a bill appropriating \$250,000 for the state institute for the study of malignant disease, for the purchase and use of radium, introduced by Senator Gibbs and Assemblyman Seelbach on behalf of Dr. Harvey R. Gaylord, director of the state institute, Buffalo.

Amendment of Law Governing Employment of Town Physicians.—The law relating to the employment of town physicians has been amended by an act of legislature so that a town may now combine with an adjoining town in the employment of a town physician who may reside in either of the two places. The amended law strikes out the clause limiting residence within a radius of 8 miles of the town boundary and also the one limiting the salary to \$1,000 per annum.

Governor Urged to Veto Chiropractic Bill.—The board of managers of the state charities aid association has passed resolutions urging the governor to withhold his approval of the bill recently passed by the legislature to "define and regulate the practice of chiropractic" on the ground that approval of the bill would constitute a real and serious danger to the health of the people of the state by giving public recognition and official license to persons claiming to be able "to locate and adjust by hands misplaced or displaced vertebrae of the human spine for the purpose of relieving the nervous pressure caused thereby." This recognition and license, it is held, would be interpreted by large numbers of people as being equivalent to the giving of authority to practice medicine.

Endorsement of Health Center Plan by Dental Society.—The New York State Dental Society, at its recent meeting in Albany, unanimously adopted a resolution approving the provisions of the health center bill which was introduced into the last legislature by Senator Sage and Assemblyman Machold. The resolutions lay particular stress on the great need for provision for proper care of the mouth and teeth of the rural population, and for instruction in the disastrous physical results of neglect to provide such measures. These resolutions provide for the appointment of a committee from the State Dental Association for the purpose of cooperating with other organizations concerned with or interested in the public health of the state, with a view of securing favorable action on the health center bill at the next session of the legislature.

Typhoid Death Rate Decreases.—During 1919, the typhoid fever death rate in this state decreased to the lowest figure yet recorded, namely, 3.3 per hundred thousand. In 1906 the rate was 19 per hundred thousand. In commenting on these figures, a recent bulletin of the New York State Department of Health compares the condition of the water supplies of the state in 1906 with that of the present time. In 1906, there were about 400 public water supplies which served a population of about 6,100,000. Nearly fifty of these sup-

plies received some purification and served a population of about 700,000. In 1919, there were 510 public water supplies serving a total population of about 8,700,000. Of these water supplies 125 were purified either by filtration, chlorination or both, and served a population of approximately 7,000,000. In other words, the number of people receiving pure water increased 1,000 per cent. during this period.

Intensive Course in Syphilis.—Two intensive courses in syphilis under the auspices of the Rochester Health Bureau will be held in the state hospital and the general hospitals and dispensaries, June 14 to 19 and June 21 to 26, inclusive. They will be in charge of Dr. George W. Goler, health officer of Rochester. The courses include: first, the history and municipal control of syphilis, and second, clinical lectures and demonstrations of, and participation in darkfield work with the living treponema; the technic of Wassermann tests and reactions; the preparation of arsphenamin, technic of its administration in the arm, femoral, jugular and scalp veins, and the superior longitudinal sinus; methods of giving mercury; spinal punctures, and cytology and chemistry of spinal fluid. The course will be free. Each course is limited to fifteen students, and applications must be sent in to the Health Bureau, Chestnut and James Streets, Rochester, for the first course before June 12, and for the second course, before June 19.

New York City

Endowment Fund Increased.—The president of the New York Post-Graduate Medical School and Hospital announces that up to May 20, \$1,264,801.57 had been subscribed toward the \$2,000,000 endowment fund of the institution.

Flatbush Society Election.—At the annual meeting of the Flatbush Medical Society held in Brooklyn, May 12, Dr. Harold A. Morris was elected president; Dr. Richard M. Mills, vice president; Dr. William F. C. Steinbugler, secretary, and Dr. George A. Merrill, treasurer.

Fund in Memory of Dr. Cragin.—The trustees of Columbia University announce that former patients of the late Dr. Edwin B. Cragin have raised a fund of \$3,500 in his memory to be used in social service work at the Sloane Hospital for Women. They also announce a scholarship in the College of Physicians and Surgeons through a gift of \$6,000, by Wallis S. Turner in memory of his father, Charles W. Turner.

New Officers.—At the annual meeting of the Women's Medical Association of New York City, held May 19, under the presidency of Dr. Emily Dunning Barringer, the following officers were elected: president, Dr. Ethel D. Brown; vice presidents, Drs. Eleanor Parry and Mary Alice Asserson; corresponding secretary, Dr. Isabel Taylor MacMillan (reelected); recording secretary, Dr. Frances Cohen, and treasurer, Dr. Allis E. Hascall (reelected).

Reeducation of Hospital Patients.—An effort to reeducate a group of women who remain for a considerable time in hospital wards because of venereal disease is being carried on at the Kingston Avenue Hospital, Brooklyn. The New York City Visiting Committee in cooperation with Mrs. Wilcox of the board of education and Miss Marshall of the Manhattan School Board has sent a well-trained teacher to these women. A similar class has been carried on at the city hospital with excellent results.

Personal.—Dr. William T. Doran has received \$15,000 in settlement of a bequest of \$25,000 under the will of Margaret A. Howard, which was contested by other heirs.—Dr. Adolphus Monac-Lesser has received a bequest of \$80,000 under the will of Joseph Auditore. It is reported that the will will be contested.—Dr. John M. Wheeler was elected secretary of the board of surgeons of the New York Eye and Ear Infirmary, May 18.—Dr. Harry Feldman, Brooklyn, has been appointed assistant to the chief surgeon of the Greenpoint Hospital.—Dr. Israel S. Wechsler has been appointed adjunct in neurology in Mount Sinai Hospital, New York City.—Dr. John A. Ferguson, Brooklyn, has been appointed a member of the board of education of New York City.

First Aid to the Industrial Worker.—The Bureau of Public Health Education of the Department of Health in the City of New York has issued Keep Well Leaflet No. 19, entitled "First Aid to the Industrial Worker," prepared by Dr. Samuel Dana Hubbard, superintendent of the division of industrial hygiene. About 350,000 industrial injuries are reported each year in New York state, the majority of which are in New York City, and in about 15 per cent. of these, infections have increased the serious nature of the injury.

This percentage would have been reduced materially by proper application of first aid. The leaflet first considers why overhauling the human machine is necessary, gives rules for the avoidance of accidents, suggestions for first aid, information for the employer, and then devotes sixteen pages to concise and well-considered instructions to laymen for first-aid treatment of common injuries and disorders, advising the laymen what to do and what not to do.

OKLAHOMA

New Hospital.—The Southern Baptist Convention has under construction a new fifty-bed hospital at Cushing. This hospital will care for a large district in the oil field section of the state.

Personal.—Dr. Finis W. Ewing, Muskogee, has been appointed superintendent of health for Muskogee and Muskogee County.—Dr. Virgil Berry, Okmulgee, announces his retirement after more than thirty years of practice.

Medical Society Notes.—An organization known as the Oil Field Medical Association has recently been organized in Oklahoma, its membership includes all the active medical men of Cushing, Yale, Oilton, Quay, Shamrock and Drumright. Dr. William J. Neal, Drumright, is president, and Dr. J. Walter Hough, Jr., Cushing, secretary-treasurer.—At the meeting of the Logan County Medical Society held in Guthrie, April 22, Dr. Pauline Q. Barker was elected president.—At the annual meeting of the Quay County Medical Association held in Parker City, Dr. James C. Hawkins, Blackwell, was elected president, and Dr. William A. T. Robertson, Ponca City, vice president.

PENNSYLVANIA

Commission to Revise State Laws Named.—On the commission to revise and codify the laws relative to the insane and the feeble-minded were named Judge Isaac Johnson, Media, chairman of the state board of public charities; Dr. Theodore Diller, Pittsburgh, Drs. Owen Copp and Charles H. Frazier, Philadelphia, and C. Herr, Harrisburg.

Barber Shop Inspection.—Medical inspection of barber shops in the central part of the city was started, May 19, under the direction of the health department and the survey is to extend to barber shops all over the city. After inspections are completed, Dr. Furbush, director of public health and charities, will issue certificates to each barber shop found in a sanitary condition. A centralized medical clinic where all barber journeymen will be examined is one of the chief things for the future, according to Dr. Furbush. While there is no ordinance to supervise the work there are enough health laws to compel barber shops to clean up. The inspection was started through the request of proprietors of large barber shops who desired a certificate for their places.

Personal.—Dr. Iden M. Porster, Greensburg, has resigned as a member of the state board of health.—Dr. Joseph J. Meyer, Johnstown, has been appointed chief of the genito-urinary dispensary at Johnstown.—Dr. Patrick H. Weeks, Warren, has been appointed physician to the Northern Indiana Penitentiary, Michigan City.—Dr. Hugh J. Coll, Connellsville, has been elected local surgeon of the Baltimore and Ohio Railway, succeeding Dr. Elliott B. Edie, resigned.—Dr. Frank D. Glenn, Erie, who was a member of the Montour County Medical Society in 1912, has returned to the State Hospital for the Insane at Danville, as a member of the staff.—Dr. G. Roberta Fleagle, Hanover, will soon leave for Colgan, China, as a medical missionary under the Methodist board. She will have charge of hospital work, paying particular attention to diseases of women and children, and will be the only woman physician among 125,000 Chinese people.—Dr. Roland Jessop, York, assistant county medical director of York County, has resigned.

WEST VIRGINIA

Personal.—Dr. Frank Lemoyne Hupp, Wheeling, has accepted the chairmanship of the West Virginia Cancer Committee and has appointed the following division chairmen: Drs. John E. Cannady, Charleston division; Wade H. St. Clair, Bluefield division; Chester R. Ogden, Clarksburg division; William W. Golden, Elkins division; Carter S. Fleming, Fairmount division; J. Ross Hunter, Huntington division; Charles S. Hoffman, Keyser division; John N. Simpson, Morgantown division; J. Howard Anderson, Marytown division, and Mary V. McCune Rossa, Martinsburg division.

WISCONSIN

Hospital Enlarged.—Plans are completed which will double the size of the Deaconess Hospital, Green Bay. A new unit is to be built which will give the hospital a capacity of 120 beds.—Dr. Daniel W. Lynch has reopened his hospital at West Bend which he closed when he went into military service.

Resign from Medical Faculty.—Ten members are reported to have resigned from the faculty of the Marquette University School of Medicine on account of a disagreement between them and the president of Marquette University over several ethical questions, one of which is that of sacrificing an unborn infant when necessary to save the life of the mother. Those who have resigned are:

Drs. Louis M. Warfield, Professor of Clinical Medicine; John L. Yates, Professor of Clinical Surgery; Emerson A. Fletcher, Director and Professor of Genito-Urinary Surgery; Carl Henry Davis, Associate Professor of Obstetrics and Gynecology; Chester M. Echols, Associate Professor of Obstetrics and Gynecology; Frederick J. Gaenslen, Director and Associate Professor of Orthopedic Surgery; James D. Madison, Associate Professor of Medicine; Arthur J. Patek, Associate Professor of Medicine; Arthur W. Rogers, Associate Professor of Neurology; Charles H. Stoddard, Associate Professor of Medicine.

CANADA

Personal.—Sir Adam Beck was elected president of the London Health Association, April 10, after a ninth term.—Dr. Ira De La Matter, Mono Road Station, Ont., was presented with the Royal Humane Society Medal at the reception of the returned soldiers of the County of Hastings. Dr. De La Matter saved two persons from drowning in the Trent Canal.—Dr. Edgar C. Barnes, assistant superintendent of the Homewood Sanitarium, Guelph, has been appointed medical superintendent of the Hospital for Mental Diseases, Selkirk, Manitoba.

GENERAL

Thoracic Surgeons Hold Meeting.—At the third annual meeting of the American Association of Thoracic Surgeons held in New Orleans, May 1, Dr. Rudolph Matas, New Orleans, was elected president; Dr. Walton Martin, New York City, vice president, and Dr. Nathan W. Green, New York City, secretary-treasurer.

American Physicians' Association Election.—At the annual meeting of the Association of American Physicians held in Atlantic City, N. J., May 4 and 5, Dr. William S. Thayer, Baltimore, was elected president; Dr. Herbert C. Moffitt, San Francisco, vice president; Dr. Thomas McCrae, Philadelphia, secretary; Dr. Thomas R. Boggs, Baltimore, recorder, and Dr. Joseph A. Capps, Chicago, treasurer.

Coming Meetings.—The thirty-seventh annual meeting of the American Climatological and Clinical Association will be held in Philadelphia, June 17 to 19, under the presidency of Dr. Lawrason Brown, Saranac Lake, N. Y., with headquarters at the Bellevue-Stratford Hotel.—The thirty-second annual meeting of the American Pediatric Society will be held at the Moraine Hotel, Highland Park, Ill., May 31 to June 2, under the presidency of Dr. Thomas S. Southworth, New York City.

Conference of Health Authorities.—The eighteenth annual conference of state and territorial health authorities was held in Washington, D. C., on May 26 and 27. This conference was called at the instance of Dr. Hugh Cumming, Surgeon-General of the Public Health Service. A program for the two days' conference included discussions on "Rural Sanitation," "Public Health Administration," "Endemic Index and Communicable Disease Control," "Better Morbidity Reports," "Initiation of a Nation-Wide Health Campaign," "Coordination of Effort and Promotion of Efficiency in Field of Sanitary Engineering," "Framing of a National and State Policy for the Production of Clean Milk in Adequate Quantities," "Migration of Tuberculous Persons," "Provisions for Lepers," "Child Hygiene," and "Malaria."

Home Economics Association.—The thirteenth annual meeting of the American Home Economics Association will be held at Colorado Springs, Colo., June 24 to 29, inclusive, with headquarters at the Antlers Hotel, under the presidency of Edna N. White of Detroit. The science section, which is naturally of most interest to physicians, holds its sessions on June 28, when papers will be presented by Mrs. Agnes Fay Morgan of the University of California, on "The Contribution of European Experience on Low Diets to Our Teaching of Dietetics," and by Helen R. Thompson of the Kansas Agricultural College, on "Effect on Young of Alternate Periods of Suppression of Growth and Refeeding: Experi-

mental Data on Albino Mouse," and by Major David Klein, Chicago, on "Scientific Preparation of Gland Extracts and Their Use in Feeding in Cases of Malnutrition."

Senate Committee Restore Appropriation to Combat Venereal Diseases.—Fears entertained by physicians and social workers that the national government's campaign against venereal diseases would be stopped because of lack of funds will be allayed by the action of the Senate Committee on Appropriations. This committee has restored to the Sundry Civil Bill appropriations amounting to \$785,000 which were heretofore stricken out of that bill on the floor of the House of Representatives. Within the past week Senators have received hundreds of telegrams and letters from mayors of cities, church federations, officials of the Y. M. C. A. and city health authorities approving of the splendid work accomplished by the Bureau of Venereal Diseases of the national government and asserting that it would be a national calamity if this salutary work were not continued.

Anesthetists Meet.—At the annual meeting of the American Association of Anesthetists held in New Orleans, last month, resolutions were adopted that the association place itself on record as unalterably opposed to the employment of lay anesthetists, nurse anesthetists, who have not been graduated from recognized medical and dental colleges and have not been licensed to practice medicine or dentistry; and agree to inaugurate and prosecute legislation to protect the medical and dental professions and the public from such inadequately educated and trained anesthetists whenever such action is necessary and pledged its cooperation with the government in securing specialists in several branches of medicine in the medical department of the Navy and the medical department of the Army. The following officers were elected: president, Dr. Joseph E. Lumbard, New York City; vice presidents, Drs. Frank L. Richardson, Boston, and Eleanor C. Seymour, Los Angeles, and secretary-treasurer, Dr. F. Hoeffer McMechan, Avon Lake, Ohio.

Bequests and Donations.—The following bequests and donations have recently been announced:

Cambridge, Mass., Hospital, a bequest of \$70,000 by the will of Mrs. James A. Wollson.

Children's Home Society, Jackson, Miss., for the erection of an annex for housing children having contagious or communicable diseases, a donation of \$10,000, by Mrs. S. W. Johnson.

Home for Incurables, Philadelphia, \$10,000, Methodist Hospital, \$5,000 and Frankfort Hospital, \$500, by the will of Mary Anne Elliott.

Episcopal Hospital, Philadelphia, \$500, by the will of Florence W. Holbrook.

Lankenau Hospital, Philadelphia, \$5,000, by the will of Gustav A. Schwartz.

St. Vincent's Home, Maternity Hospital, Philadelphia, and one other institution, \$4,000, by the will of Michael Corrigan.

Children's Home, York, Pa., York Hospital and Tressler's Home, York, each \$1,000, and Society to Protect Children and Aged Persons, \$500, by the will of Miss Amanda Smyser, York, Pa.

Servants' Relief and Incurable Cancer, New York City, \$1,000, by the will of Ann Hogan.

For a new hospital at Denison University, Newark, Ohio, a donation of \$25,000, by Mrs. F. C. Whistler, Hillsboro.

Association for Research in Nervous and Mental Diseases.—On the initiative of the New York Neurological Society, an association has been organized to foster research in neuropsychiatric diseases. Meetings are to be held yearly. At each meeting only one subject will be discussed. The meetings will be conducted by a commission whose members will act as an investigating body on the presentations and theses submitted at each annual meeting; and at the conclusion of the meeting the commission will prepare and publish such material as it deems fit. Subjects will be given out from one to three years in advance of the meeting. The commission has decided on New York for the first meeting late in December, 1920. The subject for discussion is "The Acute Nonsuppurative Infections of the Nervous System." Each member is to pay a fee of \$5 yearly to the secretary-treasurer of his local neurologic society, who will transmit all funds to the secretary-treasurer of the research association, Dr. Foster Kennedy. The neurologic societies of Baltimore, Boston, Brooklyn, Chicago, New York City, Philadelphia, Pittsburgh, San Francisco and Washington, D. C., have thus far been extended invitations to membership. The chairman of the organization committee is Dr. Walter Timme, New York City; Dr. Frederick Tilney, New York City, is chairman of the committee on arrangements for the first annual meeting.

FOREIGN

Physicians Wanted for the Dutch Colonies.—A German exchange quotes the *Nederlandsch Staatscourant* of Jan. 1, 1920, to the effect that positions are open to fifteen foreign

physicians in the Netherlands colonial medical service and fifteen more are to be open later. The contract calls for three or five years' service, with salary of 3,000 and 5,000 gulden and free transportation to and from the Dutch East Indies. Applicants must state whether they wish the shorter or longer contract or will serve in combating the plague, and enclose credentials. Address Departement van Kolonien.

British Medical Association Meeting.—The eighty-eighth meeting of the British Medical Association will be held at Cambridge, from June 29 to July 2, under the presidency of Sir Clifford Allbutt, who will deliver the president's address, Tuesday evening, June 29. The scientific and clinical work will be divided into twelve sections, and sessions will be held Wednesday, Thursday and Friday. The scientific discussions are scheduled for the morning sessions, while the afternoons will be taken up by clinical and laboratory demonstrations. A popular lecture by Dr. G. S. Graham-Smith on the evening of July 2 will mark the close of the meeting.

Professor Pawlow.—Part of a letter from the Russian physiologist, Prof. J. P. Pawlow, of Petrograd, dated August, 1919, was republished in *Science* March 5, 1920. The letter was alleged to be an appeal to his friends in Kieff to send him some provisions as he was starving. The quoted sentence was: "Instead of science, I am busy peeling potatoes." This appeal has been copied the world around, but protests have also been published, expressing doubts as to its authenticity, as the two statements conflict. If he has potatoes to pare, he cannot be starving. It is also pointed that owing to the scarcity of servants, many professors now are engaged at times in peeling potatoes. No further news has been received direct from Petrograd regarding the matter.

Congress of Physiology.—A Congress of Physiology will be held at Paris, July 16-20, under the presidency of Prof. Charles Richet, and physiologists of allied and neutral countries are invited to attend. Titles and abstracts of papers to be read before the congress should be in the hands of the secretary not later than June 1. The abstracts should not exceed twenty-five lines. Information is also requested whether animal demonstrations or lantern slides will be used to illustrate the papers, and what animals and apparatus will be required. In connection with the congress, there will be an exhibition of laboratory apparatus and instruments. The fees for affiliation (35 francs) should be sent to M. Lucien Bull, at the office of the congress, Sorbonne, 1 rue Victor Cousin, Paris V.

Repeal of Extension of Health Insurance in Germany.—THE JOURNAL mentioned recently, page 1411, the new law whereby benefits of state health insurance were extended to all persons with incomes up to 20,000 marks. The *Deutsche medizinische Wochenschrift* now brings word that the National Assembly has yielded to the influence brought to bear by the profession, and has repealed this law, reducing the income limit to the old figure 12,000 marks. "By the vigorous and concerted action of the medical men of the country," the editorial states, "the profession has won an extraordinary victory. With amazing promptness the government submitted a new bill to the assembly; it was adopted and goes into effect May 3. The profession can see from this what can be accomplished by purposeful action, and that it is impossible for physicians' just demands to be ignored. It is to be hoped that they will proceed henceforth in this same united manner when it is a question of their vital interests."

Victory for the United Profession in Spain.—The health officers in Spain, the *médicos titulares*, have always been in the pay of the local municipal authorities, and this has led to numerous abuses. In many towns the local authorities have put off paying the *titulares* until they are years in arrears, and the health officials have suffered from actual want. A concerted movement has been on foot for some months to have the officially appointed health officers, prison physicians and veterinarians paid by the state, like the post-office employees. This has finally been secured, both houses having voted favorably on it after two all-night sessions of discussion. The victory was won at last by a single vote, the *Siglo Médico* relates. Cortezo, director of the *Siglo Médico*, was the leader of the forces in the senate. In an editorial commenting on the victory the appeal is made anew for "all physicians, health officers and others, high and low, to make their influence felt in the elections, refusing their support to every candidate, whatever his politics, who will not promise to aid and promote the wishes of the medical profession and sanitary reforms. Legislators who will work for the betterment of the race are good, whatever their

political beliefs. . . . Health is the first thing; living comes before theorizing."

Deaths in the Profession in Other Countries

Dr. C. Esmein of Paris, on the editorial staff of the *Archives des maladies du cœur*, aged 38.—Dr. A. Lapuente of Buenos Aires.—Dr. J. Veranes of Madrid.—Dr. Herculano Penna Jr. of Florianópolis, Dr. B. dos Anjos of Bahia, and Dr. Climerio de Oliveira, professor of gynecology in the medical school at Bahia, all of Brazil.—Dr. Alejandro García Aragón of Turrialba, Costa Rica, a graduate of Yale, aged 48.—Dr. G. T. Chalybaeus of Dresden, aged 82.—Dr. J. H. Spiegelberg of the Ebenhausen Sanatorium for children, near Munich.—Dr. W. Merkel, Hofrat, of Nuremberg, aged 87.—Dr. Rauzier, professor of clinical medicine at the University of Montpellier, one of the founders of the Société neurologique and author of numerous works, including a treatise on the pathology of the elderly, aged 58.

LATIN AMERICA

New Home of the S. Paulo Medical Society.—The Sociedade de Medicina e Cirurgia of S. Paulo, Brazil, recently celebrated its twenty-fifth anniversary and at the same time took possession of its new home, rua do Carmo, 6.

Antirabies Institute in Nicaragua.—The *Brazil Medico* states that an antirabies institute was recently organized at Managua in Nicaragua. It is said to have been made possible by the generosity of the late president of Mexico, and is to be called by his name, Carranza Institute.

Chair of Physiology in Paraguay.—The medical faculty of the University of Paraguay at Asunción asked the minister of foreign affairs of Brazil to select an incumbent for the chair of physiology for a term of three years. He referred the matter to the Rio de Janeiro medical faculty, and they submitted the names of four candidates. The one selected, Dr. Roquette Pinto, has been livre docente of physiology at Rio for some time.

CORRECTION

Section on Laryngology.—In the minutes of the Section of Laryngology, Otology and Rhinology of April 30, which appeared in THE JOURNAL of May 15, page 1393, it is said, "Dr. Joseph L. Goodwin, Tazewell, Tenn., presented combined forceps and bronchoscope." This is an error, as this instrument was presented by Dr. A. Ellis Goodloe of Chattanooga, Tenn.

Government Services

Appropriation for History of War Approved in Senate

The efforts in behalf of a medical and surgical history of the World War now promise to be successful. The Senate Committee on Appropriations has made provision for the publication of such history by the insertion of an amendment in the Sundry Civil Bill that \$75,000 be expended for this purpose. It is generally understood that the Senate will adopt this amendment which was approved by formal resolutions of the American Medical Association at its annual session in New Orleans this year. Surg.-Gen. M. W. Ireland made a special appeal to the Senate Committee in behalf of this appropriation.

Health Conditions of the Army.

Health conditions among the troops in the United States continue excellent. The admission and noneffective rates, while showing a slight increase over last week, are still unusually low; and only a few cases of communicable diseases are reported from the various camps and stations, but nowhere have they assumed epidemic proportions. There were thirty-eight cases of measles reported against fifty-one the preceding week. The Western Department reports six admissions for diphtheria and Brooks Field, Texas, reports eight diphtheria carriers. Camp Taylor and the Western Department each report two new cases of pneumonia, and Camps Dix, Grant, Sherman and Fort Logan each report one. The death rate for disease, 1.5, is the lowest since September, 1917. There were only four deaths from disease, one each from pneumonia, empyema, cardiac dilatation, and surgical shock. Excellent health conditions prevail among the American Forces in Germany. There was but one death among these forces, the cause of which is not given.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 1, 1920.

Criticisms of American Universities

At a meeting of the Royal Colonial Institute, Sir A. E. Shipley read a paper on "Universities in Canada and the United States." He pointed out that Canada was better provided in proportion to population with universities and seats of education than these islands. London, with its population of 8,000,000, was content with one university, while Canada, with not much more than half that number of persons, had a larger number of universities than the United Kingdom. The cost of university training in Canada was considerably less than in the United Kingdom. Unlike the American universities, the Canadian had retained the British system of honors. In Toronto and McGill, the training in medicine was abreast of the best on the European continent. In the universities of the United States, the number of students was amazing. In the discussion that followed, Sir George Parkin said that in the American universities education was given on a democratic scale to great crowds, while Cambridge tried to educate men individually. One of the greatest results of the Rhodes scholarship would be that American students would be taught to realize that no teaching could be more efficient and inspiring than the individual system. Sir Gilbert Parker said that the mass method of teaching was wrong, and that the individual system of the English universities was by far the best.

The Place of Public Opinion in Preventive Medicine

Lecturing on this subject, Sir George Newman, chief medical officer of the ministry of health, said that we now knew that the causes of disease were not something arbitrary, capricious, occult or accidental, but an effect of causes in large and increasing measure controllable. For the first time public and personal health were purchasable. The problem could be stated in a word. The English people were suffering from impaired physique. Ten years of medical inspection in elementary schools had shown that no fewer than 1,000,000 children were so defective that they could not derive reasonable benefit from their schooling. The returns for 1914-1916 disclosed that more than half the insured persons in England and Wales received medical treatment every year and that there were upward of 14,000,000 weeks of sickness a year, most of which was due to preventable disease. In the year following Nov. 1, 1917, there were 2,425,184 examinations of recruits. Of this number only 36 per cent. were found to be of full normal health and strength, and 40 per cent. presented marked physical disabilities. The coming of the ministry of health meant a new sort of attack on the strongholds of disease. It meant increased intervention by the state, improved organization, central and local, and a bolder policy. But a factor in reform in some ways more important than all these was an educated community. We should never win through to a high physical standard until the great mass of the people were educated sufficiently to be able to choose the way of health. The dietary of the great mass of workers consisted of bread, beer, tea, pickles, canned meat, a bit of bacon and a piece of cheese. Appetizing cookery, freshly prepared food, healthy conditions and sound digestion were often absent. The reason was not poverty, but lack of knowledge. Sir George Newman emphasized the value of games and recreation. The nation ought to have available a complete scheme of educational and recreative gymnastics to train body and brain, combined with games,

swimming, field sports and tennis. Invalidism, diseases and premature death were due to a relatively small number of morbid conditions, of which a large proportion were preventable. Thus, four principal diseases—pulmonary tuberculosis, influenza, poliomyelitis and cerebrospinal fever—were now known to be conveyed from person to person by inhalation of the causal microbe. Protection could be secured only by safeguarding one person from another on the individual scale. A clean mouth, clear breathing passages, abstinence from spitting, sneezing, coughing or shouting or breathing at other people would go a long way toward prevention. Other groups of maladies, such as dyspepsia, septic wounds and disease contracted by infection, could be considerably lessened by dissemination of simple knowledge as to their causation. The prevalence of venereal disease was a stain on our civilization. A further purpose of enlightened public opinion in regard to preventive medicine was that the assent of the community might be won for sanitary reform and its consent secured for sanitary government, imperial and local. Mere legislation would prove abortive if not supported by intelligent public opinion. The admirable work of the voluntary health societies could hardly be overestimated, and such a campaign as the national health week was particularly valuable.

The Medical Examination of Aeronauts

The air ministry has issued a schedule for the medical examination of civilian pilots, navigators and engineers. The candidate must be at least 19 years of age, of good heredity in respect to nervous stability, and free from any disease, injury or abnormality likely to interfere with efficiency. In addition to the general medical examination there are special flying tests. Among these is one for "expiratory force," as shown by readings on a U tube manometer. When the expiratory force is under 80 mm. of mercury, the subject will probably be incapable of sustained effort in routine aerial work. The special mental tests, such as the reaction time tests, to which the Italians and others have paid special attention, have not been adopted to any large extent, because we feel that a history of aptitude for various sports requiring eye is of equal value, as compared with a somewhat elaborate experiment on a special occasion under circumstances frequently trying to the applicant.

The Leper Problem

An important congress, summoned by the mission to lepers, of missionaries and physicians has been held at Calcutta under government auspices. The conference recognized that leprosy is a slowly contagious disease, in which the nasal discharge is frequently infectious before the stage of ulceration is reached; that, though the disease is not hereditary, children are peculiarly susceptible to infection, and that segregation is the most effective measure for reducing the prevalence of the disease. It was recommended that voluntary segregation should be encouraged except in the case of pauper lepers, in respect to whom compulsory powers should be obtained and settlements established. In view of the considerable fecundity of lepers, especially of females, separation of the sexes was advised. When this was not practicable, married lepers should be allowed to live together only on the understanding that any children born to them should be taken away at the earliest possible age. A bill has been introduced into the imperial legislative council following closely these recommendations.

Class Fertility

The declining birth rate seems to be an inexhaustible topic, always presenting new phases for discussion. At the Statistical Society, Dr. T. H. C. Stevenson, superintendent of statistics in the general register office, read a paper on the

fertility of the various social classes from the middle of the nineteenth century to 1911, based on information obtained in the last census as to the duration of marriages and the number of children born and surviving. He pointed out that in considering the differences in fertility between the various sections of the population it was necessary to bear in mind the differences in their child mortality. Taking the population as a whole, large families implied high, and small families low child mortality. It was possible, therefore, that the small families of the middle classes were in part due to the low mortality of their children, as well as the latter to the smallness of their families. In a typical case—wives married at 20 to 25 whose marriages had lasted from fifteen to twenty years—child mortality rose from 102 per thousand born in one-child families to 339 in twelve-child families and 407 in those of more than twelve children. This was due to the rapidity of births implied as well as to their number. At the same time, high fertility did not necessarily involve high mortality. Agricultural laborers were 37 per cent. more fertile than textile workers, but the mortality of their children was 35 per cent. less. The census figures not only showed that fertility increases downward in the social scale, but also suggested that this difference is of comparatively recent origin—in other words, that the defective fertility of the classes which are presumably the most successful and efficient is a new fact, the consequences of which are not yet apparent and will have to be faced. Comparatively little class variation in fertility is observed in marriages contracted before 1861. More recent marriages have been subject to the influences, whatever they may be, that have led to the fall in the birth rate from 1877 onward. Their fertility has rapidly declined, and at the same time the class variation has greatly increased, which suggests that artificial restraint is the main cause of the decline. This is confirmed by several other facts. The decline began in higher social strata and spread gradually downward; occupied mothers show a very low fertility, and infertility increases in the higher classes with increase of marriage duration up to twenty-five years. The comparatively low infant mortality in the less fertile classes goes very little way toward compensating for their low fertility. The least fertile classes are those that marry late in life. The fertility of occupied wives was found to be considerably lower than that of wives whose husbands had the same occupation. Thus, the fertility of male teachers was 70 per cent. of the average of all classes, but that of female teachers was only 52 per cent.

Osler's Will

Sir William Osler left an estate of the gross value of \$80,000 with a net personalty of \$58,000. He left his medical and scientific library (as cataloged) to the McGill University, Montreal, and all other property to his wife. At her death or earlier, if she should wish it, his residence, 13 Norham Gardens, Oxford, is to be given to the dean, canons and governing body of Christ Church as the residence of the regius professor of medicine.

The American Hospital in London

The plans for the American Hospital in London, already described in *THE JOURNAL*, are considerably advanced. Mr. Taft has accepted the office of president in America. Lord Reading is president in England, with Lord Bryce as vice president. American residents in London have formed themselves into a committee, which includes many prominent names, and steps are being taken to incorporate the institution according to the laws of the state of New York. It is hoped to open a temporary building this autumn. The hospital is intended to become the principal research center in Europe for American graduates. British physicians are in

sympathy with the work, the committee including several eminent names, such as Sir Arbuthnot Lane, Sir Humphry Rolleston and Sir Bland-Sutton. There is also a committee in the United States which includes Drs. W. J. and C. H. Mayo, George W. Crile, A. J. Ochsner and Franklin Martin. The two medical committees will work together. In July the authorities of the hospital will entertain Dr. C. H. Mayo at dinner.

PARIS

(From Our Regular Correspondent)

April 29, 1920.

A Substitute for Bismuth Subnitrate

Since the war it has become difficult to procure a suitable quality of bismuth subnitrate. Moreover, all of the salts of bismuth have increased in price to such an extent that their use has become prohibitive to a large class of patients. This state of affairs has led to a search for an efficient substitute. Some years ago, after several regrettable cases of poisoning from bismuth subnitrate, it was proposed to substitute the subcarbonate. This suggestion had no regard for the question of economy, for bismuth subcarbonate is as costly as the subnitrate. It is therefore interesting to call attention to a recent communication before the Academy of Medicine, by Doctor Georges Hayem, formerly professor of clinical medicine at the Faculté de Médecine de Paris. He suggests that in place of bismuth subnitrate, there be employed kaolin, a white clay used in the manufacture of crockery and porcelain. Kaolin, an amorphous powder composed of silica and oxides of aluminum, iron and magnesium is almost insoluble in water and organic fluids. Hayem first employed it in 1915 as a substitute for bismuth subnitrate in a case of gastric ulcer. Favorable results were obtained and he extended its use to all conditions for which he had usually prescribed bismuth subnitrate, especially for the relief of gastralgia. If thoroughly cleansed, kaolin has no pronounced taste, and it can be employed mixed with water without a corrective. Still, to avoid loathing or a disagreeable sensation of taste, the kaolin may be made aromatic by adding to each 40 gm. one drop of essence of anise or six drops of essence of mint. It should be noted that Prof. J. Stumpf of Würzburg once recommended finely powdered kaolin for the treatment of acute and chronic intestinal infections, especially cholera. According to him, the remedy acts in a purely mechanical fashion by encompassing the micro-organisms in some way and preventing their further multiplication.

Mouth Washes and the Tax on Pharmaceutic Specialties

By an act of Dec. 30, 1916, a tax was imposed on pharmaceutic specialties for which curative and prophylactic properties are claimed. This means that the tax in question does not apply to toilet preparations, such as mouth washes. But this is, however, not true if the manufacturer or merchant attributes therapeutic or prophylactic virtues to the mouth wash. Thus a perfumer was prosecuted in the court at Riom for selling a bottle of proprietary mouth wash without the tax stamp. The court had acquitted the merchant on the basis that as the product was a mouth wash, it came under the class of toilet specialties and not of pharmaceutic specialties. The representative of the bureau of indirect taxes carried the case to the court of appeals on the ground that the bottle was wrapped in a circular which announced that the mouth wash was a remedy for caries and toothache, whereupon the court ruled that the merchant had violated the law of 1916 by advertising the product as a therapeutic substance.

Honorable Distinction to the Faculty of Medicine of Nancy

The French government has recently directed public attention to the noble conduct of the personnel of the faculty of

medicine of Nancy (the teaching personnel, nurses and employees) who, for the entire duration of hostilities, at a short distance from the front, successfully continued its work with the limited resources left after military mobilization, united by a common spirit of solidarity for teaching as well as for the care of military and civil victims in the hospitals under its charge. Despite the repeated dangers to which Nancy was exposed, especially in 1918, at a time when by order of the government all universities should have been closed, the medical school remained open because of its obligations to the hospitals, thereby setting an example of constant energy, of cool courage and of the modest performance of daily duty.

The Evolution of Pathology and Medicine

In a series of books, "Les sciences d'aujourd'hui," under publication by Masson et Cie, there is a very interesting work on medicine by Prof. H. Roger, dean of the Paris medical faculty. The introductory paragraph contains a very accurate definition of medicine: "a science in its methods of study, an art in its applications." Both phases are the subjects of instructive discussion, touching on all that which might be called the philosophy of medicine and which may well merit the attention of all physicians.

Because of their originality, several chapters are worthy of special mention: those dealing with the evolution of pathology and with the evolution of medical science.

In his study of the evolution of pathology, Roger shows that certain diseases tend to decrease in frequency and to become confined to certain regions; it may be hoped that they will disappear entirely before long. Leprosy furnishes the most striking example: in the thirteenth century, there were 19,000 leprosariums in Europe, 2,000 in France alone. Today, leprosy is localized to a few countries, while in France only sporadic cases are found near Marseilles and Nice. On the other hand, there are diseases which appeared at a certain epoch and which do not seem destined to disappear so soon. The eruptive fevers, for instance, originated in the sixth century, and cerebrospinal meningitis was unknown until the nineteenth century. Devastating epidemics were preceded by cosmic disturbances, by great variations in temperature and pressure or by earthquakes. Virchow once hoped that a thorough study of these various causes would lead to reliable prediction of the imminence of epidemics, analogous to meteorologic forecasts. But what is even more interesting is the influence of social conditions on the change in pathology. Thus, industrial progress has greatly increased poisonings from adulteration; by extending its fields of activity, industry has also increased the varieties of occupational poisoning, although various prophylactic measures have succeeded in reestablishing the equilibrium by reducing the frequency of these accidents.

Proceeding from the point that the social condition of a country influences the morbid reactions and has a special effect on psychopathic manifestations, Roger wonders what influence the war will exercise on the insanities. It is probable, he says, that a profound change will be effected: the war has wiped out our old utopias and has developed the sense of realities. Men will no longer be solicitous for position and honor but they will pursue pleasure and riches with much greater brutality. The present agitations and the new difficulties of existence will certainly have their effect on us and they will lead to another evolution of the psychopathies.

On the other hand, after tracing the historic evolution of science, Roger arrives at the conclusion that this has profoundly modified the traditional methods of medicine. In times past, diagnosis was based on very simple methods of examination, and therapeutics consisted of pharmaceutic pre-

scriptions; today certain delicate diagnoses require complex procedures and explorations which demand special installations. Roger forecasts, therefore, that sooner or later diagnostic establishments will be organized where persons with chronic diseases, overworked and even well subjects will stay for several days, and on a case history card will be recorded the functional condition of each organ. It will also be easy to give such advice on diet and hygiene as is advisable and to point out prophylactic measures necessary to avoid menacing danger.

Exchange of Professors

Exchange of professors with foreign universities, for a long time practiced by the Faculté des lettres de Paris is gradually extending to the other faculties. Thus the council of the University of Paris has recently approved a course in the law school by M. André Mercier, dean of the faculty of Geneva. On this point the *Gazette des hôpitaux* says that there is every reason to hope that the medical faculty, under the active impulsion of the dean, Professor Roger, will soon enter into exchange relations with English and American universities.

Faculty Appointments

Doctor André Broca, agrégé, has been appointed professor of medical physics of the Paris medical faculty, succeeding Professor Weiss, recently appointed dean of the medical faculty of Strasbourg.

Student Welfare

The University Society for Student Welfare recently held a meeting at the Sorbonne under the presidency of M. Appel, rector of the University of Paris. The society is designed to give material and moral support to all students who may feel in need thereof. Various lines of activity have been proposed: the establishment of numerous student centers (foyers); the organization of a service of information, intelligence and medical assistance; the consolidation of extant associations and houses for students, and similar measures.

Consulting Medical Commission of the Aviation Service

There has recently been appointed by the undersecretary of the state for aviation a consulting medical commission, with instructions to publish a scientific program of research for the medical section of the technical service of aviation, to assure the necessary scientific authority to medical measures submitted for the approval of the undersecretary of state, and in a general way to decide all related questions such as the testing of physical fitness or the treatment of aviators. The commission under the presidency of Dr. Georges Guilain, includes Drs. Pierre Duval, André Broca, Camus, Crouzon and others.

Marriages

JOHN IGNATIUS WISEMAN, Baltimore, to Dr. Katherine Isabel Tate Slattery Fricka of Boston, April 24.

GUY MANNERING OWSLEY, Thorntown, Ind., to Miss Charlotte M. Smith of Columbus, Ind., April 6.

HILMAR GEORGE MARTIN, Milwaukee, to Miss Grace A. Waring of Washington, D. C., April 27.

THOMAS DUGAN BAXTER, Chilton, Texas, to Miss Eunice Lotridge of Nashville, Tenn., April 14.

HARRY JAY PITTOCK to Miss Maude Mae Burgoon, both of Hastings, Neb., May 12.

WALTER L. DREWRY to Miss Esse C. Morris, both of El Paso, Texas, April 18.

CHARLES KLAUS STULIK to Miss Zdenka Spatney, both of Chicago, May 10.

DANIEL LEONARD GOLANN to Miss Ethel Block, both of Brooklyn, May 8.

Deaths

Lindon Bulkley Cady, New York City; Columbia University, College of Physicians and Surgeons, New York City, 1914; aged 31; a member of the Medical Society of the State of New York; assistant surgeon, U. S. N. R. F., and relieved from active duty April 10, 1919; clinical assistant in the New York Skin and Cancer Hospital; died in St. Luke's Hospital, New York City, May 13, two days after a surgical operation.

Edward Sealy, Newark, N. J.; Bellevue Hospital College, 1884; aged 71; a member of the Medical Society of New Jersey; attending physician to the Home for the Friendless, Newark; attending surgeon, throat department, New York Eye and Ear Infirmary, and senior surgeon to the Hospital for Women and Children, Newark; died in that institution, May 11, from cerebral hemorrhage.

Charles Lee King † Pasadena, Calif.; Chicago Medical College, 1880; aged 66; once secretary of the Los Angeles County Medical Society, and president of the Pasadena Branch of the Los Angeles County Medical Society; for three years medical superintendent of the Alma (Mich.) Sanitarium; president of the Pasadena Y. M. C. A. from 1915 to 1918; died, May 5.

Arthur Ellison Midgley † Whitewater, Wis.; University of Illinois, Chicago, 1904; aged 41; lieutenant-colonel, M. C., U. S. Army, and discharged Sept. 23, 1919; cited for bravery by his divisional commander and General Pershing, April 19, 1918; died, May 20, from the effects of a gunshot wound of the heart, self-inflicted, it is believed, with suicidal intent.

James Lindsey Porteous † Yonkers, N. Y.; L.R.C.P. and S. (Edin.), 1867; M.R.C.P. (Edin.) 1878; F.R.C.S. (Edin.), 1879; consulting surgeon to St. Joseph's Hospital; a fellow of the New York Academy of Medicine, and formerly vice president of the Westchester County Medical Society; aged 78; died, May 13.

Rudolph R. Seidel, Bedford, Ohio; Western Reserve University, Cleveland, Ohio, 1893; aged 52; a member of the Ohio State Medical Association; who was struck by an interurban car in Bedford, April 21, suffering a fracture of the skull; died in St. Alexis Hospital, Cleveland, May 5.

William Joseph Dismuke † Ocilla, Ga.; University of Georgia, Augusta, 1901; aged 48; a member of the Georgia Surgeons Club; local surgeon for the Seaboard Air Line, and general surgeon for the Ocilla Southern Railroad; died, May 13, following an operation for appendiceal abscess.

Archibald Haas, Chicago; Bennett Medical College, Chicago, 1882; College of Physicians and Surgeons, Chicago, 1886; aged 70; died, May 22, from the effects of a gunshot wound, self-inflicted, it is believed, with suicidal intent, while despondent on account of ill health.

Charles Edwin Boddiger † Chicago; College of Physicians and Surgeons, Chicago, 1893; aged 52; captain, M. R. C., U. S. Army, and discharged Dec. 14, 1918; who was operated on for glioma of the brain, March 10, died in Wesley Memorial Hospital, Chicago, May 22.

Thomas Henry Landor † Canton, Ohio; McGill University, Montreal, 1884; aged 57; contract surgeon, and captain and assistant surgeon, U. S. V., from 1898 to 1908, with service in the Philippine Islands; died, May 6, from hypertrophy of the liver, and gastric ulcer.

Waldemar F. Lungerhausen, Mount Clemens, Mich.; University of Pennsylvania, Philadelphia, 1897; aged 42; a member of the Michigan State Medical Society and president of the Macomb County Medical Society; died, May 1, from cerebral hemorrhage.

William Addison Elrod, Albertville, Ala.; University of the South, Sewanee, Tenn., 1900; aged 50; a member of the Medical Association of the State of Alabama; died in Gadsden (Ala.) General Hospital, May 7, a week after a surgical operation.

Francis C. Maloney, Avilla, Ind.; Charity Hospital Medical College, Cleveland, 1866; aged 75; a member of the Indiana State Medical Association; died in Sacred Heart Hospital, Garrett, Ind., May 4, a few days after a surgical operation.

Jacob Prinzing † Nampa, Idaho; University of Minnesota College of Medicine, Minneapolis, 1901; aged 44; lieutenant, M. R. C., U. S. Army, with service at Camp Lewis, Wash.,

and discharged Jan. 23, 1919; died, May 7, from acute peritonitis following an operation for gastric ulcer.

Persis White, Winnetka, Ill.; Northwestern University Woman's Medical School, Chicago, 1894; for eight years resident physician at the North Shore Health Resort, Winnetka; died, May 20, in St. Mary's Hospital, Rochester, Minn.

Dewitt C. Joyner, Memphis, Tenn. (license, Arkansas); aged 71; a practitioner since 1861, and for more than half a century a practitioner of Mississippi County, Ark.; surgeon in the Confederate service during the Civil War; died, May 5.

Charles Milo Holcomb, Seattle; Jefferson Medical College, 1887; aged 60; a member of the Washington State Medical Association; died in the Seattle General Hospital, May 3, two days after a surgical operation.

Harvey Gilbert, Bay City, Mich.; New York Homeopathic Medical College, New York City, 1874; aged 73; at one time coroner of Bay County and health officer of Bay City; died, May 2, from cerebral hemorrhage.

Alzine M. Castlebury, Williamsport, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1892; a member of the Medical Society of the State of Pennsylvania, aged 61; died, April 24, from rheumatism.

Warren Randall Gilman † Worcester, Mass.; Harvard University Medical School, 1888; aged 58; for many years a member of the staff of the Worcester City and Worcester Memorial hospitals; died, May 2.

Alwin Hugo Schwab † Brooklyn; College of Physicians and Surgeons in the City of New York, 1890; aged 52; while making a professional call, May 15; died from heart disease in the home of the patient.

William Allen Stallworth, Beatrice, Ala.; Medical College of Alabama, Mobile, 1893; aged 52; a member of the Medical Association of the State of Alabama; died, April 3, from carcinoma of the throat.

Malin Burdett Shaw, Eden Center, N. Y.; University of Buffalo, 1866; Bellevue Hospital Medical College, 1874; aged 80; health physician of the town of Eden; died, May 2, from organic heart disease.

James B. Shaw, Sheridan, Ark.; University of Nashville, Tenn., 1882; aged 72; a member of the Arkansas Medical Society; president of the Grant County Medical Society in 1913; died, March 23.

Valentine Winters Anderson, Dayton, Ohio; Louisville (Ky.) National Medical College, 1900; Michigan College of Medicine and Surgery, Detroit, 1904; died, May 10, from cerebral hemorrhage.

John William Voss, Beverly, Mass.; University of Pennsylvania, Philadelphia, 1894; aged 53; captain, M. R. C., U. S. Army, and discharged Dec. 11, 1918; died, May 10, from heart disease.

Charles F. Cushing, Elyria, Ohio; Western Homeopathic College, Cleveland, 1861; aged 90; for many years a member of the staff of Elyria Memorial Hospital; died, May 3, from pneumonia.

Harl L. Gee, Mount Vernon, Ill.; Washington University, St. Louis, 1898; aged 45; a member of the Illinois State Medical Society; died, April 26, from pulmonary tuberculosis.

W. E. Newcombe, North Vancouver, B. C.; McGill University, Montreal, 1901; acting medical health officer of Vancouver; died, March 9, from pneumonia following influenza.

James Edward Earle Nelles, Oak Park, Ill.; University of Illinois, Chicago, 1907; aged 35; who served with the Canadian Army Medical Corps in England; died, March 12.

Herbert Harris, North Syracuse, N. Y.; Chicago Medical College, 1866; aged 80; for many years a practitioner of Hinsdale, Mich., and Skaneateles, N. Y.; died, May 1.

William H. Wells, Buckingham, Ill.; University of Louisville, Ky., 1883; aged 66; a member of the Illinois State Medical Society; died, April 30, from chronic bronchitis.

Horace M. White, Philadelphia; Jefferson Medical College, 1861; aged 82; a practitioner of dentistry since 1869; died, May 4, from septicemia following a carbuncle.

James B. Patterson, Rockford, Ill.; Jefferson Medical College, 1862; aged 80; who fell March 2, fracturing his hip, died from senile myocarditis, April 2.

Thomas G. McPherson, Beaver Falls, Pa.; Western Homeopathic College, Cleveland, 1864; aged 82; died, May 9.

Frank C. Seeley, Algona, Iowa; University of Michigan, Ann Arbor, 1874; aged 73; died, April 27.

† Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

HOSTETTER'S BITTERS

"Hostetter's Celebrated Stomach Bitters" contains 25 per cent. alcohol. So far as is shown by a careful investigation made by the A. M. A. Chemical Laboratory, the amount of this nostrum that can be taken is limited only by the individual's capacity for alcohol! The label, as the law requires, declares the presence of 25 per cent. alcohol; that is, "Hostetter's Bitters" is one half the strength of "straight" whisky. The recommended daily dose is six tablespoonfuls (3 ounces). This means that a person taking Hostetter's Bitters—strictly according to directions—gets as much alcohol daily as would be obtained from nearly two bottles of beer (alcohol strength $3\frac{1}{2}$ per cent. by volume) or from $1\frac{1}{2}$ ounces of "straight" whisky.

The alcohol content of Hostetter's Bitters seems to have been a variable quantity. As long ago as 1878 the question of the beverage use of this nostrum in Alaska was under consideration by the Internal Revenue Department. A letter from the Commissioner of Internal Revenue at that time stated that Hostetter's Bitters was sometimes sold by the glass by retail liquor dealers and also sold "by the drink" in saloons in Sitka. In January, 1883, the Treasury Department notified the Collector of Customs at Sitka that, in its opinion, Hostetter's Bitters "should be excluded from Alaska under the executive order of Feb. 4, 1870, forbidding the importation of distilled spirits into that territory."

In THE JOURNAL of Sept. 8, 1883, there was published in full a long communication from the Office of Internal Revenue addressed to the manufacturers of Hostetter's Bitters, in a reply to their question as to whether or not it was necessary for the retailers of the "Bitters" to take out a special license for its sale. The Internal Revenue officials declared that a chemist in the Department of Agriculture had analyzed Hostetter's Bitters and had reported finding 32 per cent. alcohol—whether by weight or volume was not stated—64 per cent. water and 4 per cent. of extracts. The chemist reported further that the stuff was "flavored with various essential oils, as oil of anise, coriander, etc., and contains some vegetable bitters, such as gentian, cinchona, etc." The chemist very naturally declared that Hostetter's Bitters contained much more alcohol than was necessary to hold the other ingredients in solution. Commenting on this analysis, the Commissioner of Internal Revenue said:

"Containing, as it does, no deleterious drugs and only 4 per cent. of anything like a drug, I should probably be entirely justified in deciding outright that one who sells it for any purpose is a retail liquor dealer. . . ."

The Commissioner admitted, however, that the case was complicated by the fact that for many years the government

had "classified the preparation as a proprietary medicine and collected stamp tax upon it." As a result, the Commissioner said that he would not decide at that time whether in the abstract Hostetter's Bitters was a medicine or not. For, said he:

"Should I hold it to be a medicine, I should probably do violence to an almost irresistible tendency of the mind to conclude that no genuine medicine needs so much whisky and so few drugs in it, unless under very unusual circumstances. On the other hand, should I decide that it is no medicine at all, I would be confronted by a ten-years' quasi recognition by this office to the contrary, as well as by the practice of many people who use it as such."

The upshot of this case was that the Commissioner decided to "let the use give character to it"; when the stuff was, apparently, sold as a *bona fide* medicine no action would be taken; when it was sold to be drunk as an intoxicating beverage the seller would be taxed accordingly. The Commissioner's letter closed with the statement:

"This seems to me to be the true rule, and an article containing so little that is even nominally medicinal as yours does ought and will be subject to very close scrutiny as to its use."

In 1906, the state chemists of North Dakota reported that their analysis showed Hostetter's Bitters to contain 43 per cent. of alcohol by volume, with only $4\frac{1}{2}$ per cent. of total solids, and the chemists reported that the principal portion of the total solids was sugar.

In 1907, after the Food and Drugs Act went into force, and the amount of alcohol had to be declared on the label, Hostetter's Bitters for a time contained 39 per cent. alcohol, the label reading in part:

"Averaging thirty-nine per cent. of alcohol by volume in finished product, being only sufficient to hold in solution the extracted medicinal properties of barks, roots, herbs and seeds contained therein."

Later, the amount of alcohol was reduced to 25 per cent. and the labels were changed to read, as they read today:

"Averaging twenty-five per cent. of alcohol by volume in finished product, being only sufficient to hold in solution the extracted medicinal properties of barks, roots, herbs and seeds contained therein."

In 1914, the state chemists of Connecticut analyzed the nostrum and reported finding nearly 25 per cent. of alcohol, a small amount of quinin and about $4\frac{1}{2}$ per cent. of solids "all but 0.8 per cent. of which is sugar."

The kind and quantities of drugs (other than alcohol) in Hostetter's Bitters have, so far as we know, never been divulged, to the consumers at least, by the manufacturers. Formulas purporting to represent the composition of this nostrum had variously given, as some of the ingredients, gentian root, blessed thistle, cinchona bark, calamus root, colombo root, orange peel, rhubarb, cinnamon and cloves.

In April, 1920, the A. M. A. Chemical Laboratory completed an analysis of Hostetter's Bitters. The complete details of analysis will, as usual, be published in the Annual Reports of the Laboratory. The essential part of the report follows:

LABORATORY REPORT

"The specimen of Hostetter's Stomach Bitters examined was a pale amber-colored liquid having a bitter taste, a neutral reaction and an odor resembling a mixture of anise and orange flavors. The label declared the presence of 25 per cent. of alcohol but gave no further information concerning the composition of the preparation. The preparation

SOME ALCOHOL EQUIVALENTS

HOSTETTER'S BITTERS CONTAINS 25% ALCOHOL, THE DAILY DOSE RECOMMENDED IS SIX TABLESPOONFULS OR THREE OUNCES!

The Daily Dose of Hostetter's Bitters contains as much Alcohol as does the Beer in these bottles or the "Straight" Whiskey in this glass.

Item	Alcohol Content (%)	Contents (Volume)
Hostetter's Bitters (Bottle)	25%	18 OZ.
Six Tablespoonfuls (Spoon)	-	3 OZ.
Beer (Bottle)	50%	1 OZ.
Whiskey (Bottle)	3 1/2%	2 1/2 OZ.

(The Chemical Editor for the National Medical Association, 1919)

Miniature reproduction of one of the educational posters prepared by the Propaganda Department of THE JOURNAL. In the originals, which measure 22 by 28 inches, the bottles and glass are reproduced natural size.

is described, among other things, as 'a corrective and mild cathartic.' Alcohol was determined and 24.72 per cent. by volume was found. On evaporation the preparation gave 4.8 gm. of residue per 100 c.c. of which about 80 per cent. was cane sugar. The ash amounted to about 0.045 gm. per 100 c.c. The small percentage of ash excluded the presence in medicinal quantities of such purgative salts as magnesium citrate, magnesium sulphate and potassium sodium tartrate. Extraction of the faintly acidified solution with ether gave 0.023 gm. of ether extract per 100 c.c. This residue was of a pale greenish color and had a bitter taste suggestive of gentian. No active medicinal substances could be identified in this residue.

"The ether extract from 100 c.c. of the preparation was mixed with milk sugar and swallowed by a healthy man without producing any symptoms. This demonstrated the absence of appreciable amounts of podophyllum, scammony and jalap.

"Iodids, bromids, heavy metals, emodin-bearing (laxative) drugs, and phenolphthalein were absent. Traces of tannin were found. A mixture of alkaloids was present in which quinin and cinchonidin were identified. This, together with the occurrence of tannin, suggested the probable presence in Hostetter's Stomach Bitters of extractives from cinchona. The total alkaloids amounted to 0.167 gm. per 100 c.c. or about $\frac{3}{4}$ grain per fluid ounce. With the exceptions of the alcohol and the cinchona alkaloids no other physiologically active ingredient was found.

"Six fluid ounces of the preparation (6 doses) were dealcoholized, the solution evaporated, the residue mixed with milk sugar, the mixture placed in capsules and the capsules swallowed at one dose by a healthy man. No effects were noted.

"From the results of the examination it is evident that alcohol is by far the most active ingredient in Hostetter's Stomach Bitters. The preparation is probably a hydro-alcoholic extract of small quantities of cinchona and possibly small amounts of other relatively inactive drugs. The analysis failed to reveal the presence of any drugs in quantities which would prevent the preparation being used as a beverage."

It is obvious from the analysis just given that, as stated at the outset of this article, the use of Hostetter's Bitters as a beverage is, apparently, limited only by the individual's tolerance for alcohol. One point is worth attention: Hostetter's Stomach Bitters has for a good many years been recommended for malaria among numerous other conditions. The A. M. A. chemists found small quantities of quinin and cinchonidin present. In order to get a daily dose of quinin equal to 15 grains, the minimum amount the Pharmacopeia recommends as an antimalarial, it would be necessary to take nearly twenty ounces of Hostetter's Bitters daily. This would necessitate swallowing an amount of alcohol equivalent to about 10 ounces daily of "straight" whisky.

Many of our readers will remember THE JOURNAL's reference to an episode that occurred three years ago. The Baltimore Sun of Feb. 24, 1917, carried a news item from Danville, Va., to the effect that the police in that town had had to deal with a large number of "drunks" each of whom admitted that he became intoxicated on "a certain proprietary medicine which contains 25 per cent. alcohol." A telegram from THE JOURNAL to the Chief of Police of Danville asking for the name of the proprietary medicine in question, brought the laconic reply "Hostetter's Bitters."

During the recent past several nostrums of the alcohol type have markedly modified their formulas. "Vinol," which used to contain 18 per cent. alcohol, now contains 10 per cent. "Manola," which used to contain 18 per cent., now contains 15 per cent.; "Peruna," which long contained 20 per cent. alcohol, now contains 12. "Wine of Cardui," which also for years contained what the manufacturers declared was the irreducible minimum of 20 per cent., now contains 10. "Warner's Safe Cure," put out by a concern that used to be what was practically a subsidiary company to a distilling concern, for years had 15.5 per cent. alcohol; it is now nonalcoholic. The motives that brought about these changes are unimportant; the facts are the vital elements. Whether some of these manufacturers have received hints from the Internal Revenue Department, whether the increased cost of alcohol or whether both have been responsible for the modifications, we do not know.

Whatever may have been the cause, or causes, of the changes in the case of the products just mentioned, they do not seem to have operated in the case of Hostetter's Bitters. To this fact we respectfully direct the attention of the Internal Revenue Department.

Correspondence

INDICATIONS FOR OPENING THE DRUM IN ACUTE MIDDLE EAR INFECTIONS

To the Editor:—In the main, I am in agreement with the views set forth by Dr. L. E. La Fétra in his article on "Acute Middle Ear Infection in Children" (THE JOURNAL, May 1, 1920, p. 1222). But I must question his judgment regarding the indications for incision of the membrana tympani. Dr. La Fétra states that when the temperature is high, pain acute and the bulging marked, he deems it best to incise the drum. Further, he says that the infrequency of mastoid involvement and other complications, and the very satisfactory results of conservative treatment are his justification for awaiting further indications than those of the day of onset. Again, he states that if tenderness elicited by pressure on the tragus increases, if there is tenderness of the tip of the mastoid and the temperature remains high after twenty-four hours and the bulging persists, incision is necessary.

The incision of the drum—especially in a young child—is indicated, according to my experience, which is not a small one both in public and in private practice, if there is bulging, notwithstanding the absence of pain or abnormal temperature. There is another indication besides the danger of the involvement of the mastoid, etc., for freeing the exudate from the drum cavity when the drum is bulging, namely, the preservation of the hearing function. I have seen rosy-cheeked children who were cheerful, took their food, were playful and slept well, with the drum cavity full of pus. In some cases the disease was discovered in the routine of a general examination, because the child did not thrive.

To leave ears alone because of the absence of pain and abnormal temperature is to invite disaster, especially in measles and scarlet fever. The hearing function has been destroyed without the presence of pain or abnormal temperature; chronic suppuration of the middle ear has followed without pain or fever, or both. The tympanic structures in a child are soon destroyed. Owing to the exceedingly thin covering of the inner wall of the tympanum with periosteum, the lower portion of the promontory especially is very poorly protected. I have frequently heard the statement from intelligent general practitioners that as there was no pain or high temperature there was no occasion for examining the ears. I have seen mastoids destroyed without pain in the adult. In tuberculous subjects, young or old, there is little or no pain. In infection with *Streptococcus mucosus*, pain may be absent, with little or no rise of temperature.

In some cases the process is fulminating, so that no time should be lost in evacuating the tympanic contents. In other words, it is absolutely impossible to tell what is going to happen to a bulging drum. Furthermore, it is only the well-to-do who can afford to have unremitting attention paid to their condition, or those in a hospital; and if the intern or the attending physician is too busy to watch these patients carefully, valuable time may be lost. Therefore, while patients with bulging drums may recover by conservative treatment, the end-result may not also be good, for this exudate may cause adhesions, and if it involves the region of the round and oval windows, serious impairment of hearing may ensue. I have tried conservatism, but I feel that prompt action has given more satisfactory results than the

awaiting of the prolongation of the symptoms. The drum may rupture spontaneously, and this is to be avoided, as a sloughed opening is not as desirable as an incised one, although the spontaneous opening may be widened. One must consider that before the opening is sloughed open, damage is being done to the interior of the tympanum.

EDWARD L. MEIERHOF, M.D., New York.

PRIORITY IN SUGGESTING TRANSILLUMINATION FOR FOREIGN BODIES

To the Editor:—In *THE JOURNAL*, Sept. 6, 1919, p. 766, there was published a clinical note on "The Removal of Foreign Bodies from the Tissues by the Use of Transillumination," by A. G. Bettman, M.D., Portland, Ore. The method is not new. I described it in the *Medical Record*, Nov. 4, 1911, under the heading: "Transillumination in Locating Foreign Bodies in the Extremities."

MORRIS H. KAHN, M.D., New York.

REVERSAL OF THE LYMPH CIRCULATION IN SURGICAL DRAINAGE

To the Editor:—Exception has been taken by several writers to the expression "reversal of the lymph circulation" used in my article on "Surgical Drainage from a Biologic Point of View" (*THE JOURNAL*, Jan. 17, 1920, p. 159). The term was used to describe what appears to be the chief biologic process by which drainage acts beneficially in solid soft tissue and in endothelial cavities.

The words "reversal of the lymph circulation" may not have been happily chosen, but I know no other phrase that would be quite as satisfactory. I fully appreciate the impossibility of any real reversal of blood circulation, and in other communications I have attempted to demonstrate that a vein and its contributing branches would not function as an artery when an arterial current is turned into the vein (Horsley and Whitehead: *THE JOURNAL*, March 13, 1915, p. 873; Horsley: *Annals of Surgery*, March, 1916, p. 277). It was at one time, however, rather generally held that the blood circulation could be reversed in this manner.

The phrase "reversal of the lymph circulation" is not intended to mean reversal in the physiologic sense, that is, change in the direction of the lymph current within its normal channels. Surgical drainage is not a physiologic but a pathologic process. Lymph or serum is continually poured around an offending foreign body until the foreign body is removed. This lymph comes partly from the injured lymph channels and lymph spaces in the tissues and partly through the uninjured walls of the lymph channels, which become more permeable with the hyperemia that is present when surgical drainage is necessary.

These are facts that are largely self evident. The moot point is whether this process can be called reversal of the lymph circulation. This phrase was used because it seems to me that the current of lymph or serum continually poured out to the surface of the skin for days or weeks constitutes in a sense a circulation of lymph. This current, if it rises to the surface of the body and appears on the skin or mucous membrane, is not in the direction of any known normal lymph current and probably is a reversal, or at least a deflection, of the direction of the adjoining normal lymph currents. Then, too, this phrase seems to emphasize a phenomenon that many surgeons apparently ignore. The phrase "outpouring of lymph" occurred to me, but this suggests an almost instantaneous process, or at least one that covers a very short space of time.

It may also be objected that "lymph" is used in rather a loose sense. I have employed it as indicating the thin, clear fluid that is found in the lymph channels and spaces of the

body and that infiltrates the tissues in edema. In order to describe the phenomena of surgical drainage, it appears to be necessary to use the words lymph or serum to indicate such fluids.

J. SHELTON HORSLEY, M.D., Richmond, Va.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DECOLORIZATION OF HAINES' SOLUTION—DIFFERENTIATION OF PUS CELLS FROM LEUKOCYTES IN URINE

To the Editor:—1. Will you kindly tell me what it is in the urine that takes all of the blue color out of a Haines test solution—that is, makes it clear like water. Two weeks ago the urine of a woman was heavily loaded with sugar. Under diet there is now no sugar, but 10 drops in a dram of Haines' solution takes out all the color, as stated.

2. In a report sent out by an insurance company to its policy holders on the microscopic examination of urine, there are two blank spaces. One space is for leukocytes, and the other for pus cells. The report may read "leukocytes none," "pus cells few." I wish you would tell me how the different kinds of white cells can be made out in a urinary examination?

JAMES L. TRACY, M.D., Toledo, Ohio.

ANSWER.—1. In the use of Haines' or other copper test solutions, the presence of sugar is denoted by the formation of a yellow or reddish precipitate of cuprous oxid. The extent of the precipitate is partly dependent on the amount of sugar in the urine used. In some cases, in which the sugar is low in amount, only slight precipitation is evident; but some precipitation of the cuprous oxid should be noted in the presence of sugar. Mere decolorization of the copper solution is in no way indicative of the presence of sugar. This decolorization is observed with urines showing an excess of creatinin, uric acid, conjugated glycuronates, and certain preservatives. However, if these substances are present in large amounts, typical precipitation of the cuprous oxid may occur. A direct answer, therefore, to the first question would be that the decolorization of the Haines' solution was due to excess of creatinin, or uric acid, or to conjugated glycuronates if the patient has been taking some drug which is excreted in the urine as a conjugated glycuronate.

2. Concerning the differentiation of pus cells from leukocytes in a urinary sediment, it is to be said that this rests largely on the number and appearance of the cells in question. Practically every specimen of urine shows occasional scattered white cells, but these are not to be dignified by the term "pus cells" unless present in appreciable numbers, many of which are grouped in clumps. The true leukocytes show, when stained, a well-defined nucleus and granulations, while the pus cell exhibits an irregular, granular, degenerated nucleus owing to the lysis that is occurring in the cell. As a rule, a few cells in the sediment are reported as leukocytes rather than as pus cells, being given the latter name only when present in number. As the usual pus cell corresponds to the polymorphonuclear leukocyte, staining methods must be resorted to in order to bring out the character of the nucleus and the granular bodies, both of which characteristics are not clearly shown in pus cells, as stated above. In the usual run of urinary examinations this procedure is not followed, as the number and grouping of the white cells is ordinarily sufficient to permit a diagnosis.

STERILIZATION OF CYSTOSCOPES AND URETERAL CATHETERS

To the Editor:—Kindly send formula for the sterilization of cystoscopes and ureteral catheters. A. H. WINKEL, Three Forks, Mont.

ANSWER.—Although instruments composed entirely of metal, or of both metal and glass, or of soft rubber can be sterilized without injury by boiling for from one to three minutes in water or better a 2 per cent. solution of sodium carbonate to prevent tarnishing, preference, in the case of cystoscopes is given to immersing the instrument before use in 5 per cent. phenol solution for from ten to fifteen minutes. Formaldehyd gas is also used but unless whatever is exposed to its action is left in the open for a little while before use, irritation is likely to result with unpleasant consequences to the patient; therefore, the phenol solution is given preference. Ureteral catheters may be boiled unless made of woven fabric in which case they, too, should be immersed in the phenol solution.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pankham, 135 Stockton St., San Francisco.

COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, July 6-7. Sec., Regular Board, Dr. Robert Rowley, 49 Pearl St., Hartford.

CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. V. Briggs, 1026 Jackson St., Wilmington.

DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

FLORIDA: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.

FLORIDA: Regular Board, Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.

GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.

IOWA: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.

LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.

MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 1-4. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.

MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.

NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.

NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.

OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.

OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.

OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Waubay.

TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.

TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.

UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.

WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.

WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

COOPERATION OF MEDICAL AND NURSING ORGANIZATIONS FOR THE SOLUTION OF NURSING PROBLEMS

The American Conference on Hospital Service at its meeting in Chicago, March 2, 1920, appointed a committee of seven, each representing a medical or nurse organization, to investigate causes of the shortage of nurses and to offer constructive criticism of present methods of training nurses. Physicians and nurses are asked to give the committee the benefit of their answers or opinions on any or all of the following questions:

(1) What is your opinion of the value of the three-year course for nurses connected with hospitals; the two-year course for nurses connected with hospitals; the high school

prenursing courses; the Red Cross extension courses; short courses and correspondence nursing courses?

(2) Are the principles laid down in the nursing education in these courses right or wrong? If right, why does not present nursing education adequately meet the nursing need? If wrong, how should the training of nurses be made right?

(3) What use are the graduates of these various schools making of their training?

(4) What misuse are the graduates of these schools making of their training?

(5) What, if any, is the nurse wastage during training?

(6) What, if any, is the nurse wastage after finishing the course?

(7) What are some of the reasons for the shortage of nurses today?

(8) What suggestions can be made as to changes in the training which will make it efficient and yet not lower the nursing standard?

Replies should be sent to Louise M. Powell, Supt. School of Nursing, University Hospitals, Minneapolis, Minnesota. The answers will be classified and made a part of the committee's report to the American Conference on Hospital Service at its meeting in Montreal in October.

Wisconsin January Examination

Dr. John M. Dodd, secretary, Wisconsin State Board of Medical Examiners, reports the oral, written and practical examination held at Madison, Jan. 14-16, 1920. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 14 candidates examined, 13 passed and 1 failed. Six candidates, including 1 osteopath, were licensed by reciprocity. Twelve candidates were licensed by virtue of a commission in the Medical Corps. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1916)	84
Northwestern University	(1918)	85
Rush Medical College	(1919)	83, 83
Harvard University	(1818)	88
Columbia University	(1918)	86
University of Pennsylvania	(1918) 80, (1919) 84	88, 89
University of Vermont	(1888)	88
University of Vienna	(1910)	80.6
University of Wurzburg	(1909)	85

College	FAILED	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	*(1916)	76.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1915)	Iowa
Jefferson Medical College	(1918)	Penna.
Meharry Medical College	(1918)	Tennessee
McGill University	(1903)	N. Dakota
University of Christiania	(1902)	N. Dakota

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Yale University	(1908)	U. S. Army
Rush Medical College	(1896), (1907)	U. S. Army
Northwestern University	(1905), (1910), (1915)	U. S. Army
University of Illinois	(1916)	U. S. Navy
Johns Hopkins University	(1917)	U. S. Army
National University of Arts and Sciences	(1913)	U. S. Army
University of Pennsylvania	(1911), (1917), 2	U. S. Army

* Fell below 60 in one branch.

New Hampshire March Examination

Dr. Charles Duncan, secretary of the New Hampshire State Medical Board, reports the written examination held at Concord, March 11-12, 1920. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Ten candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Columbia University	(1917)	80.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Hahnemann Med. Coll. and Hosp., Chicago	(1896)	Mass.
University of Kansas School of Medicine	(1918)	Kansas
Bowdoin Medical School	(1919)	Maine
Harvard University	(1895)	Mass.
Tufts College Medical School	(1911), (1914)	Mass.
Syracuse University	(1918)	New York
Jefferson Medical College	(1917)	Penna.
Woman's Medical College of Pennsylvania	(1901)	Penna.
University of Vermont	(1911)	Vermont

Book Notices

PRACTICAL ORTHODONTIA. By Martin Dewey, D.D.S., M.D. Fourth edition. Cloth. Price, \$5.50. Pp. 532, with illustrations. St. Louis: C. V. Mosby Company, 1919.

The first edition of this work appeared in 1914. The present—the fourth edition—presents a revision and considerable enlargement of the third edition. The additions consist largely in the description of additional forms of appliances and their use. The work is avowedly devoted to the idea of multiplicity of forms of appliances, rather than to the idea of standardization and the mastery of the most efficient instrument. The attempt is made to describe all forms of appliances and their application, with critical analysis of their applicability. The book will be of special interest to the general practitioner who is doing some work in this field.

MANUAL OF SURGERY (ROSE AND CARLESS) FOR STUDENTS AND PRACTITIONERS. By Albert Carless, C.B.E., M.B., M.S. Colonel (Temp.), A. M. S. Tenth edition. Cloth. Price, \$8. Pp. 1558. New York: William Wood & Co., 1920.

Five years have elapsed since the appearance of the ninth edition of this book. As with most standard textbooks now being issued, extensive revisions have been made, based on developments of the surgery of the war. Carless points out that the problem of determining the ultimate value in civilian work of the many methods introduced as war time emergencies has not been an easy one. There can be little question that some of these methods will pass away. He has thought best, however, to include in the present edition virtually all methods recently introduced. This, the author points out, has somewhat enlarged the size of the book, and thereby its price. The ninth edition contained 1,408 pages, while the tenth edition contains 1,558 and includes a large roentgenographic supplement. The book has however changed somewhat in form, the ninth edition having a page 9 by 6, the tenth edition, 8 $\frac{3}{8}$ by 5 $\frac{3}{8}$. New work has been added in three chief directions: treatment of infected wounds; compound fractures, and in making good the defects of war wounds.

PHYSICAL RECONSTRUCTION AND ORTHOPEDICS. By Harry Eaton Stewart, M.D., Captain, Medical Corps, U. S. Army, Division of Orthopedics. Cloth. Price, \$3.75. Pp. 275, with 64 illustrations. New York: Paul B. Hoeber, 1920.

This is a condensed manual with numerous well chosen illustrations designed to give expression to the author's ideas on these related subjects as developed from his experience in the gymnasium and in reconstruction work in the army. It tends naturally to the emphasis of massage, exercise and other forms of physiotherapy, and will be the more acceptable to those engaged in these and similar lines of work. Considerably more than half of the volume is devoted to orthopedics, briefly reviewing the usual orthopedic subjects and including fractures and dislocations of the long bones. A little more than one-half page is devoted to club-foot, and less than one-half page to congenital dislocation of the hip. Included in the congenital defects are rickets and coxa vara. From the orthopedic standpoint it is difficult to find just the yearning vacancy this volume will fill, as in its briefness it can only suggest treatment which no trained man needs and no untrained man can safely follow.

PRÉCIS DE BIOCHÉMIE. Par E. Lambling, Professeur à la Faculté de Médecine de l'Université de Lille. Second edition. Paper, Price, 15 francs net. Pp. 708. Paris: Masson et Cie, 1919.

This edition of Lambling's Biochemistry has been entirely rewritten, and has been brought fairly well up to date. The new discussions include, among other points, a rather complete outline of the colloidal state and its influence on physiologic processes; chemical specificity of the tissues; formation of biliary calculi; the comparative alimentary value of proteins and the special nutritive rôle of the amino-acids; glycolysis; the metabolism of fats; the physiologic acidity of the urine; the importance of vitamins, and nitrogen metabolism during growth. The subject-matter of the text is writ-

ten in a clear and concise style; and the discussions, although somewhat limited, are, nevertheless, adequate for the purpose. While little is presented that is not found in our own American textbooks on this subject, this work of Lambling should be found of value as collateral reading, especially for those who wish to obtain a working reading knowledge of French, as well as a concise discussion of the many points involved in the subject of biochemistry.

THE MODEL T FORD CAR, TRUCK AND TRACTOR CONVERSION SETS; ALSO FORDSON FARM TRACTOR AND F. A. LIGHTING AND STARTING SYSTEM CONSTRUCTION, OPERATION AND REPAIR. The Most Complete, Practical Treatise Explaining the Operating Principles of all Parts of the Ford Automobile, with Instructions for Driving, Maintenance and Repairing; also Complete Instructions on Fordson Tractor. By Victor W. Pagé, M.S.A.E. Cloth. Price, \$1.50. Pp. 410, with 153 illustrations. New York: The Norman W. Henley Publishing Company, 1920.

This is a book for Ford owners: not for Packard, Winton, Pierce-Arrow or Marmon owners, but solely for Ford owners. Just why the flivver should have a book devoted entirely to it we do not know. Is it possible that it is because Hunka Tin is of more importance than all other motor cars? Or is it because it needs more attention than others? We hesitate to say. Be that as it may, here is a book of more than 400 pages devoted to practical information regarding this "universal car," and it should prove of practical value to those of us who are fortunate enough to own one.

Medicolegal

Implication from Collection of Hospital Fees

(*Courchesne v. Brown* (Texas), 216 S. W. R. 674)

The Court of Civil Appeals of Texas, in reversing, for insufficiency of proof, a judgment that was rendered in favor of plaintiff Brown, who sued to recover hospital expenses incurred by him after an attack of appendicitis while he was in defendant Courchesne's employ and had had \$1 a month deducted from his wages as "hospital fees," says that the court found no case which it considered directly in point in which the issues presented here were discussed. In the cases examined, a hospital had already been furnished and was in use at the time of the collection of the hospital fees. Here the defendant had no hospital, and no custom was shown of his having furnished hospital service. The fund collected must be considered a trust fund. No method was shown for executing the trust, and the defendant was charged with the duty of administering it in such manner as would best accomplish the end for which it was accumulated; that is, to provide for the care of the sick employees who should come within the terms of the trust. Evidently the extent of the duty the defendant assumed in collecting the fund was to administer it properly. If the defendant had a hospital, the implication arising from the collection of the fees would be service at the hospital; but, having no hospital, the court thinks it would not necessarily be implied that he would furnish one. It was a matter of allegation and proof. The court thinks that if the defendant was liable for hospital service in the absence of a hospital of his own, or custom of having furnished hospital service, it would be necessary to allege and to prove that the defendant, as trustee, had on hand an unexpended portion of the trust fund which the plaintiff was entitled to have administered by the defendant in the discharge of the hospital services rendered. The defendant assumed no personal liability to the plaintiff beyond that of a proper and faithful administration of the trust fund. While the court thinks that the evidence was rather meager and unsatisfactory as to the purpose for which the funds were collected, beyond that it was for hospital fees, the court thinks that the evidence was sufficient to go to the jury on that issue. "Hospital fees" might mean that it was to provide a hospital, and it might mean that it was to be administered only in case of sickness. The court thinks, however, that, in the absence of a hospital owned or

subscribed to by the defendant, or custom to furnish hospital service, the evidence was wholly insufficient to raise the presumption that hospital service in a hospital not owned by the defendant was implied, or to justify a personal judgment against the defendant to supply hospital service. The burden was on the plaintiff, under the evidence and facts shown, not only to allege and show collection of fees, but the purpose and extent of the purpose for which the fees were collected as a present hospital fund to be used in case of sickness. It would necessarily follow that it must also be alleged and shown that the defendant had on hand a sufficient amount of the trust funds to which the plaintiff was entitled to pay the items of the account; otherwise the defendant would have nothing to administer, no duty to perform as trustee.

Irresistible Impulse Alone Not Defense to Crime

(*State v. Carrigan (N. J.), 108 Atl. R. 315*)

The Supreme Court of New Jersey, in affirming a conviction of murder in the first degree, holds that the trial judge did not err in refusing to charge the jury that if they found that there existed in the defendant's mind an irresistible impulse to take the life of the deceased, and the shooting took place under the influence of such an impulse, the defendant could not be convicted of murder in the first degree. The court says that the fundamental proposition embodied in the instruction was that an act done under an irresistible impulse cannot as a matter of law be wilful, deliberate and premeditated, within the meaning of the New Jersey statute defining murder in the first degree. The proposition is untenable. Conceding for the moment that the law recognizes the existence of an impulse which is irresistible as an element to be considered in determining the grade of a criminal homicide, the question in every case in which that element exists is whether the act was wilful, deliberate and premeditated, notwithstanding that its perpetration was the result of such impulse; and that question is clearly one of fact to be settled by the jury, for it involves the mental operations of the defendant, and they are not to be resolved by the arbitrary application of legal rules, but by a consideration of the facts and circumstances of the case which throw light thereon. The court thinks, also, that the requested instruction was properly refused on a broader ground. The court considers to be unsound the suggestion that the law recognizes a form of insanity in which the faculties are so affected that the person suffering from it, although he perceives and appreciates the moral quality of his acts, is unable to control them, and is urged by some mysterious pressure, which he cannot resist, to their commission. It may be that such a mental condition is recognized by medical or scientific authority; but the doctrine that a criminal act may be excused or mitigated on the notion of an irresistible impulse to commit it, when the offender has the mental capacity to appreciate his legal and moral duty in respect to it, has no place in the law.

State Antinarcotic Law Not in Conflict with Federal Act

(*State ex rel. Whipple v. Martinson, Sheriff (Minn.), 174 N. W. R. 823*)

The Supreme Court of Minnesota holds, in this habeas corpus case, that Chapter 260 of the laws of that state of 1915, restricting the manufacture, sale and dispensing of certain habit-forming narcotic drugs, as involved in the case of *State v. Whipple*, 173 N. W. R. 801, recently decided, does not conflict with the act of Congress known as the Harrison Narcotic Law, and that the judgment of conviction herein, of a violation of this chapter by Whipple, a physician, was not unlawful as violative of the paramount legislative power of the federal Congress or otherwise. The court says that, conceding, without considering or deciding the point, which it thinks of doubtful merit, that the right of legislation on the subject in hand is paramount in the federal Congress, and that the state statute is void so far as it conflicts with the act of Congress, the court is unable after careful examination and comparison of the two statutes to discover any conflict in the respect claimed.

Society Proceedings

COMING MEETINGS

American Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 31.
American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Medico-Psychological Assn., Cleveland, O., June 1-4.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Orthopedic Association, Toronto, Ont., June 7-10.
American Otological Society, Boston, May 31-June 1.
American Pediatric Society, Highland Pk., Ill., May 31.
American Psychopathological Assn., Cleveland, O., June 5.
Arkansas Medical Society, Eureka Springs, June 8-9.
Association of American Peroral Endoscopists, Boston, June 1.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Idaho State Medical Association, Coeur d'Alene, June 10-11.
Maine Medical Association, Augusta, June 29-30.
Massachusetts Medical Society, Boston, June 8-9.
Montana State Medical Association, Helena, July 14-15.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Jersey Medical Society, Spring Lake, June 15-17.
North Dakota State Med. Assn., Minot, June 15-16.
Ohio State Medical Association, Toledo, June 1-3.
Rhode Island Medical Society, Providence, June 3.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN ASSOCIATION OF ANESTHETISTS

Eighth Annual Meeting, held at New Orleans, April 26-27, 1920

DR. ALBERT-H. MILLER, Providence, R. I., in the Chair.

Some Anesthetic Relations

DR. A. H. MILLER, Providence, R. I.: The degree of danger attending the use of anesthetics is still unknown. The more postoperative deaths are studied the more evident it becomes that a considerable number may be traced directly or indirectly to the effects of anesthesia. The teaching of the science and practice of anesthesia in the medical schools and clinical hospitals has been neglected. In hospitals the preoperative examination of patients, the choice and the administration of anesthetics are all generally neglected. In many clinics only one agent and one method of administration is available and must be used regardless of the nature of the operation or the condition of the patient. In the larger institutions the present conditions may be remedied through the appointment of full-time, resident anesthetists. They should supervise the preliminary examination of the patients, consult with the surgical staff in regard to the choice of anesthetic agents and methods of administration, supervise difficult cases, instruct juniors in practical anesthesia and be responsible for the condition of anesthetic apparatus. While the anesthetists are trying to foster the literature of anesthesia, the larger medical and surgical journals are ignoring the subject. To remedy existing conditions it would seem advisable to encourage joint sessions of anesthetic societies with surgical associations with programs devoted to symposiums on pertinent subjects of common interest. A committee on statistics should be appointed to collect all available data and encourage private reports on fatalities. There should also be committees on instruction in medical schools and the standardization of anesthetic methods in hospitals.

Accidents During Anesthesia

DR. R. M. WATERS, Sioux City, Iowa: Anesthetic mortality is much higher than usually supposed. Recently, Dr. Stewart, of Cincinnati, compiled statistics of 10,700 operations for removal of tonsils and adenoids and found that twenty deaths had occurred in the series. The five deaths occurring under anesthesia in my own experience have taught me that every possible precaution must be taken in cases in which complicating disease has affected the heart muscle. Such patients under ordinary methods of anesthesia are apt to die unexpectedly. Patients may die of intense fear, and worry about and dread of the anesthetic may delay digestion so that vomiting under anesthesia may cause death.

by the inspiration of vomitus into the trachea. In one instance a piece of meat lodged in the glottic entrance and caused death. The possibility of respiratory obstruction from inhaled vomitus is increased in the semireclining position and diminished in the forward inclined sitting posture or in the horizontal position with the head low. Obviously also more fatalities are bound to occur from accidents under anesthesia in emergency than in properly prepared patients.

Anesthesia in Experimental Surgery

F. C. MANN, M.D., Rochester, Minn.: Ether is the best anesthetic for use in most laboratory work. The reactions of the various species of experimental animals seem to be more uniform to ether than to any other general anesthetic. We have found the McGrath method of auto-inhalation, induced by preliminary etherization in an air-tight cabinet, very satisfactory for all purposes. The ether container may be the simple can with regulatory valves or more complicated devices such as the Adson-Little insufflation machine or the Connell anesthesiometer. Smaller species of animals such as the guinea-pig, rabbit and cat are best anesthetized by the old-fashioned cone method, following preliminary etherization in a bell-jar. The goat is very susceptible to excessive salivary secretion under ether and unless given preliminary morphin-atropin and carefully anesthetized by intubation may drown in its own secretion.

Induction of Anesthesia and Analgesia by Oral Administration of Various Drugs

DR. A. FICKLEN, New Orleans: The problem of dressing extensive wounds has always presented difficulties to the surgeons on account of the pain inflicted on the patient. I use the following formula: Chloroform, 5 c.c., ether and liquid petrolatum, each 20 c.c. Recently I have found oral analgesia serviceable in the dressing of painful wounds, setting of fractures, skin grafting and other painful procedures in hospital practice. I have also collected seven cases in which the ether-chloroform-petrolatum mixture was used in obstetrics. The patients showed varying degrees of analgesia and light anesthesia. The mixture did not seem to diminish the contractions of the uterus even when the patients were asleep. Apparently there were no ill effects on the child. In one case tests showed the analgesia sufficient for repairing lacerations. Syrup of yerba santa, in 1 dram doses, helps to disguise the burning taste of the mixture to a certain extent.

Experimental Studies on Effects of Anesthetics in Shock

DR. McKEEN CATTELL, Cambridge, Mass.: In the normal animal, ether, rapidly administered, causes a moderate fall in blood pressure, followed immediately by a recovery, so that by the time a degree of anesthetization is reached sufficient to cause a disappearance of the eye reflex, the pressure is normal. In shock the animal becomes very sensitive to ether, the same degree of anesthesia produced under exactly similar conditions resulting in a marked drop in blood pressure. An increased sensitiveness to ether is brought about by any circumstances which tend to depress the general condition of the animal, such as low blood pressure, hemorrhage, severe operation or the injection of acid into the circulation. In a shocked animal, sensitive to ether, nitrous oxid and oxygen may be given in the most favorable proportions so as to produce the same degree of anesthesia produced by ether without causing a fall in blood pressure. Experiments on the heart volume in intact cats and on contractions of the isolated turtle heart, together with deductions from blood pressure show that ether from the very beginning of its administration results in a depression of the heart and a decrease in its output, which is sufficient to account for the fall in pressure in both the normal and the shocked animal. Large doses of epinephrin injected intravenously in shocked animals usually results in the disappearance of the sensitiveness to ether for a period of an hour or more. The evidence indicates that epinephrin acts on the heart in a manner which antagonizes the effects of ether. Pituitary extract does not influence the pressure drop produced by ether in the shocked animal. Determinations of leg volume

with a plethysmograph, perfusion experiments and results obtained from the injection of ether directly into the circulation, together with the form of the blood pressure curves, indicate that ether causes a contraction of the peripheral vessels in the normal animal. This constriction is caused by (a) a direct stimulation of the vasomotor center and (b) by a reflex to the fall in pressure resulting from depression of the heart. In shock no evidence of a vasoconstriction produced by ether was obtained, and pressor effects from asphyxia or sensory nerve stimulation become less or are entirely absent. The cause of the greater depressing influence of ether on the blood pressure in shock is a disturbance of the vasomotor system. The usual compensatory constriction no longer occurs to offset the decreased output of the heart, so that there is no recovery of the blood pressure during the inhalation of ether, but instead the pressure continues to fall.

Advances in Pure Nitrous Oxid-Oxygen Anesthesia

DR. E. I. McKESSON, Toledo, Ohio: Primary saturation of the patient with nitrous oxid fails in some cases to produce sufficient relaxation for certain operations. Nitrous oxid produces muscular relaxation when it is sufficiently concentrated in the tissues and associated with enough oxygen to prevent anoxemic rigidity. High concentration of this gas in the tissue is required to displace the nonanesthetic diluting gases. Secondary saturation, following momentary deoxygenation, intensifies nitrous oxid anesthesia and produces sufficient relaxation for any operation. Secondary saturation is readily lost by subsequent errors in the mixture administered, leaks of air into the apparatus or the patients' air passages and probably by absorption of air through the abdominal cavity and skin requiring occasional resaturation in some cases. Its successful and safe employment depends on an apparatus capable of inflating the lungs with oxygen should the patient be crowded, intentionally or accidentally into spastic apnea. It depends also on an accurate interpretation of the signs of anesthesia, but disregarding the presence or absence of cyanosis as an anesthetic sign. Secondary saturation is not followed by postanesthetic sequels which are detrimental or which may be attributed to its use. It is safer for the patient than an ether sequence or combined gas-oxygen-ether and convalescence is better when even the small amount of combined ether is avoided.

Open Method of Nitrous Oxid-Oxygen Anesthesia

DR. JAMES T. GWATHMEY, New York: This method is offered as a substitute for the open-drop or any other method of etherization and also as an aid in anesthetizing certain patients to whom the closed method seems a burden. A mask twice the size of the usual drop-ether mask is used and is sufficiently large to hold a full inspiration of an adult. The mask is covered with several layers of gauze and scented with essence of orange or oil of bitter orange peel. The anesthetic is started with three holes of nitrous oxid and one of oxygen and in from 10 to 15 seconds the anesthetic valve is turned just enough to have the gases barely bubble through and from this on it is very gradually increased until there is a slight bead on top of the liquid. In one minute or one minute and a half the patient will be unconscious but not anesthetized. The technic from this on will vary with the substance that is to be used in connection with the gas-oxygen. Toward the close of the operation the patient is oxygenated for a short time before leaving the table.

Relaxants in Nitrous Oxid-Oxygen Anesthesia

DR. ANSEL M. CAINE, New Orleans: Nitrous oxid-oxygen would be the anesthetic of choice in all hazardous risks were it possible to secure adequate relaxation. Proper manipulation of the oxygen supply, slight positive pressure, warming the gases and preliminary medication as well as concomitant local analgesia all help in securing the desired degree of relaxation. In a certain number of cases, however, the addition of ether, chloroform or other anesthetic will be required. I have found chloroform a safe, efficient and pleasant adjunct to gas-oxygen anesthesia for relaxation.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

February, 1920, 159, No. 2

Epidemic Acute and Subacute Nonsuppurative Inflammations of Nervous System Prevalent in United States in 1918-1919: Encephalitis; Encephalomyelitis; Polyneuritis; and Meningo-Encephalo-Myelo-Neuritis. L. F. Barker, E. S. Cross and S. V. Irwin, Baltimore.—p. 157.

Spinal Cord Tumors; Surgical Treatment. C. A. Elsberg, New York.—p. 194.

Brachial Birth Palsy: Pseudoparalysis of Shoulder Joint Origin. T. T. Thomas, Philadelphia.—p. 207.

Sixth Nerve Paralysis of Otic Origin: Gradenigo's Syndrome. Report of Two Cases. E. H. White, Montreal.—p. 227.

Unusual Syphilitic Manifestation Resembling Juxta-Articular Nodules. H. Goodman, New York, and W. J. Young, Louisville.—p. 231.

Congenital Absence of One Lung. C. S. Levy, Baltimore.—p. 237.

Secondary Meningitis Treated by Intraspinal Administration of Autogenous Serum. Report of Case. T. M. Sanders, New York.—p. 246.

Colloidal Gold Reaction with Cerebrospinal Fluid. E. Kellert, Albany.—p. 257.

Preparation of Stable Vitamin Product and Its Value in Nutrition. H. E. Dubin and M. J. Lewi, New York.—p. 264.

Brachial Birth Palsy.—Thomas maintains that obstetric or brachial birth palsy represents only one phase of a much larger shoulder joint problem. Almost, if not all, shoulder joint injuries are associated with a brachial paralysis, palsy or weakness of varying degree and duration. Very rarely will an actual nerve rupture be associated with the paralysis. Thomas doubts that sufficient traction on the head at birth to rupture the brachial plexus has ever been applied in a successful delivery.

Multiple Gummas of Tendons.—A case of multiple and symmetrical gummas of the tendons is described by Goodman and Young which clinically closely resemble the tumors of juxta-articular nodules. The suggestive history, positive Wassermann, and histology of one of the lesions puts the diagnosis of multiple syphilitic gummas of the tendons on a sound basis.

Congenital Absence of One Lung.—Twenty-one cases of congenital absence of one lung are reported in the literature. There are, in addition to these reports, four cases in the literature where a possible rudimentary lung has been found overlying an imperfectly developed primary bronchus. An additional case is recorded by Levy, one of congenital absence of one lung in a patient who was treated for the primary incontinence of tabes dorsalis. The patient was 49 years old. This is the first case of congenital absence of one lung in almost 6,000 necropsies performed in the pathologic department of the Johns Hopkins Hospital.

Autogenous Serum in Meningitis.—Sanders recommends the use of autogenous serum injected into the subarachnoid space in cases of secondary meningitis when there is no efficient specific immune serum.

Stable Vitamin Product.—Dubin and Lewi prepared a stable vitamin product, designated, "V." An analysis shows the chief components to be calcium, expressed as calcium acid, 10 per cent.; phosphorus, 15 per cent.; nitrogen, 3.5 per cent.; fat, 2.5 per cent.; iron, 0.3 per cent.; silicates 5.6 per cent.; moisture, 10 per cent. The remainder goes to make up the rest of the phytin molecule—the main constituent of the product—which is a double calcium and magnesium compound of inositol phosphoric acid. Owing to the method of preparation and to the results of experiments with normal and polyneuritic pigeons, normal and scorbutic guinea-pigs and finally with children presenting evidence of malnutrition, rickets and rickets—a marked acceleration in the rate of growth having been obtained, particularly in the children—it is established that the product contains antineuritic, antiscorbutic and antirachitic vitamins. It is felt by the authors that until such time as the vitamins shall have been isolated and their chemical composition determined, their vitamin preparation is an admirable substitute and may be used with confidence in such a manner as described by Voegtlin. It is

not intended as a substitute for any method of treatment nor is it meant to be used in infant feeding only. Rather is it intended to be a valuable aid whenever its use is indicated. At the same time, it should not be lost sight of that the diet must contain sufficient protein, fats, carbohydrates and mineral salts and that the caloric value must be adequate for the needs of the individual.

American Journal of Syphilis, St. Louis

April, 1920, 4, No. 2

*Syphilis of Central Nervous System. G. O. Scott and G. H. J. Pearson. C. A. M. C.—p. 201.

Medical and Social Care of Syphilis at Washington University Dispensary. R. S. Weiss and A. H. Conrad, St. Louis.—p. 253.

Standardization of Wassermann Reaction. Comparative Study of Complement Fixation in Syphilis with Antihuman, Antichicken and Antisheep Hemolytic Systems. J. A. Kolmer, T. Matsunami and A. Rule, Philadelphia.—p. 278.

*Wassermann Control in Treatment of Syphilis. J. C. Sargent, Milwaukee.—p. 286.

*Wassermann Reaction as Therapeutic Index for Syphilis. B. Oettinger, Long Beach, Calif.—p. 297.

Colloidal Mastic Test on Cerebrospinal Fluid. C. D. Camp, Ann Arbor.—p. 301.

Syphilitic and Tuberculous Joints. P. W. Roberts, New York.—p. 309.

*Lymphosarcoma and Syphilis. O. Berghausen, Cincinnati.—p. 317.

*Syphilis of Prostate. L. Thompson, Hot Springs, Ark.—p. 323.

*Syphilis in Pregnancy and Labor. E. L. Cornell and A. W. Stillians, Chicago.—p. 342.

Ocular Syphilis and Its Treatment: Report of Cases. W. J. Young, Louisville.—p. 346.

Standardization in Treatment of Syphilis. B. C. Corbus, Chicago.—p. 353.

Intraspinal Injections in Neurosyphilis.—This paper is based on an analysis of 210 cases of neurosyphilis and many important points are discussed and illustrated by reports of cases. One of the points emphasized by Scott and Pearson is that intraspinal injections are not only of use in the treatment of neurosyphilis but are also an aid to diagnosis. The introduction of a small dose of arsphenamized serum into the spinal canal sets up a reaction analogous to the Herxheimer reaction in that, if syphilitic infection is present, the liberated toxins from the destroyed *Spirochaeta pallida* increase the inflammatory reaction and so cause the positivity of the fluid to increase. By this reaction, if a case is suspected from clinical indications to be neurosyphilis but is serologically negative, an injection of a small dose of arsphenamized serum may render the fluid positive.

Wassermann Control in Treatment of Syphilis.—Sargent's experience with inherited syphilis treated by both arsphenamin and mercury has been limited to about a dozen cases. It has been sufficient, however, to warrant the conclusion that it is worth while attempting to cure them. From these few cases it has seemed that they react to treatment in about the same way as do adults with acquired syphilis of many years' duration. In Sargent's opinion the Wassermann offers an excellent control in the treatment of syphilis, but only, however, when taken in consideration with the physical findings and with the past history of the patient, including the amount of his treatment. Wassermann positive primary syphilis cannot be cured by a few injections of arsphenamin and a few months of mercury, but when treated intensively and over a long period, offers an excellent prognosis. There seem good grounds for the belief that many cases of secondary and tertiary syphilis, even of years' duration, when treated intensively both with arsenic and mercury for one, two or three years can be rendered Wassermann negative and apparently cured. In at least some cases of early tabes it is possible to render both the blood and spinal fluid negative to the various clinical tests.

Id.—Enough time has elapsed since the introduction of the Wassermann reaction and comparison of its readings with associated clinical aspects, Oettinger says, to prove that this test is not a reliable guide for treatment.

Lymphosarcoma and Syphilis.—Two cases of association of these two diseases are reported by Berghausen. In the first case, the general enlargement of the lymph glands was marked, but the marked enlargement of the spleen and abdominal lymph glands made the clinical diagnosis of lymphosarcoma rather easy. In the second patient the enlargement of the peripheral glands was so marked, involv-

ing chiefly the glands of the neck at first, that the probable diagnosis of Hodgkin's disease was made. In both instances there was no question as to coexistence of syphilis; the patients admitted specific infection and the blood Wassermann reaction was strongly positive to different antigens. Antispecific treatment was only of temporary benefit, proving of some value in the second patient, causing a decrease in the size of the glands of the neck but not preventing the gradual invasion of the entire lymphatic system.

Syphilis of Prostate.—Only twenty-four cases purporting to be syphilis of the prostate have been recorded in the literature, and of these only twelve, or 50 per cent., are accepted as authentic. Thompson adds one case in which the diagnosis is said to be indisputable.

Syphilis in Pregnancy.—Of sixty-nine pregnant women tested by Cornell and Stillians for syphilis, two gave a strongly positive and one a slightly positive reaction. Eighteen out of the sixty-nine cases gave a history of abortion or stillbirth aside from one case which was syphilitic. This is a percentage of 26. Of the three syphilitics, one had aborted.

Archives of Internal Medicine, Chicago

April 15, 1920, 25, No. 4

- *Studies on Arthritis in Army Based on Four Hundred Cases. IV. Relation of Creatin Metabolism to Arthritis. R. Pemberton, Philadelphia, and T. E. Buckman, Boston.—p. 335.
- *Id. V. Roentgen-Ray Evidences, Clinical Considerations, Treatment, Summary, Conclusions and Clinical Abstracts of Cases Studied. R. Pemberton, Philadelphia.—p. 351.
- *Research on Blood Sugar in Depancreatized Dogs. B. J. Delatour, New York.—p. 405.
- *Prognostic Value of Cholesterinemia in Chronic Nephritis. Final Report. E. Henes, Milwaukee.—p. 411.
- *Unusual Mechanisms of Auricular Pacemaker. P. D. White, Boston.—p. 420.
- *Fetid Spirillar Bronchitis and Pulmonary Gangrene. P. Nolf, Brussels, Belgium.—p. 429.

Relation of Creatinin Metabolism to Arthritis.—Determinations of the creatin, creatinin and nonprotein nitrogen of the blood and urine of forty cases of arthritis and nine normal controls are presented by Pemberton and Buckman. About one half of the cases of arthritis showed an abnormally high value for blood creatin. A certain number of patients showed a decline in blood creatin simultaneous with clinical improvement. Only three of the cases showed creatinuria. Only two cases showed an abnormal elevation of nonprotein nitrogen of the blood. Figures are presented which suggest that a considerable amount of creatin is occluded in the precipitation of the proteins of whole blood and plasma.

Restricted Carbohydrate Diet in Arthritis.—The value of the treatment of these arthritis patients by a restricted carbohydrate diet finds additional support in the studies on blood sugar, revealing a difficulty in the utilization of carbohydrate. It seems clear that success following this measure depends on catering to a weakened function of which the lowered sugar tolerance is one evidence. Treatment along this line has undoubted application in appropriate cases of chronic arthritis. Pemberton urges that the several measures of value in arthritis should be combined in their application more frequently. The tendency to focus on one measure often results in failure where the subsequent coincident use of several measures results in benefit.

Hyperglycemia Following Removal of Pancreas.—Complete removal of the pancreas in Delatour's dogs produced a permanent hyperglycemia, and any part of the pancreas left in the animal after operation later manifested itself by a fall in blood sugar. Epinephrin administered by intravenous injection in normal dogs increased the blood sugar. With the pancreas removed, epinephrin produced very little, if any, change in the blood sugar. Under this condition, as a possible explanation, sugar is passing freely into the circulation unburnt, and therefore the epinephrin can have very little further effect in increasing the blood sugar by inhibiting sugar metabolism. Delatour regards it as reasonable to believe that the pancreas produces some substances which favor the metabolism of the sugars in the tissues, as sugar injected intravenously is not handled as readily in the depancreatized animal as in the normal dog.

Rôle of Lipoids in Blood.—It is Henes' belief that the lipoids of the blood play a rôle analogous to an antitoxin, and are intimately associated in immunologic processes. The lipoids seem to act as a protection to the animal organism, and are known to counteract certain poisonous substances. Recent literature abounds in substantiation of the belief that cholesterol plays some protective rôle in the animal organism. The prognostic value of the measure of cholesterinemia in chronic nephritis becomes of greater interest and importance because of these facts.

Unusual Mechanism of Auricular Pacemaker.—Three clinical examples of unusual mechanism of the auricular pacemaker are reported by White: (1) Paroxysmal tachycardia arising in or very near the sino-auricular node and not showing an absolutely abrupt onset or offset. (2) Migration of the pacemaker in the sino-auricular node, two foci alternating action in one case. (3) Sudden halving of the auricular rate (sino-auricular block) after exercise.

Spirillar Bronchitis.—It would appear from Nolf's study of eleven cases that spirillar bronchopneumonia is a malady of temperate climes, and that it has probably been confounded up to the present time with pulmonary gangrene consecutive to acute or chronic affections of the respiratory tract. Its micro-organism is probably a common inhabitant of the upper respiratory passages, particularly of the mouth and pharynx.

Boston Medical and Surgical Journal

April 22, 1920, 182, No. 17

- Helen Homans. F. A. Washburn, Boston.—p. 417.
 - Intestinal Obstruction: Report of Cases. E. A. Codman, Boston.—p. 420.
 - Supporting Pelvic Floor to Prevent and Overcome Uterine Prolapse. D. W. G. Wilcox, Boston.—p. 425.
 - Loss of Both Eyes from Exophthalmos of Hyperthyroidism. F. H. Lahey, Boston.—p. 427.
 - Résumé of Literature of Infantile Scurvy During 1918 and 1919. J. L. Morse, Boston.—p. 428.
- May 13, 1920, 182, No. 20
- Disturbances Caused by Proteins. J. A. Turnbull, Boston.—p. 493.
 - Use and Abuse of Mechanical Supports in Orthopedic Conditions. II. W. Marshall, Boston.—p. 497.
 - Report of Urologic Cases. W. C. Quinby, Boston.—p. 502.

Journal of Infectious Diseases, Chicago

March, 1920, 26, No. 3

- *Statistics of 1918 Epidemic of Influenza in Connecticut, with a Consideration of the Factors which Influenced the Prevalence of this Disease in Various Communities. C. E. A. Winslow and J. F. Rogers, New Haven, Conn.—p. 185.
- *Bacterium Anatum, N. S., Etiologic Factor in Widespread Disease of Young Ducklings Known in Some Places as 'Keel.' L. F. Rettger and M. M. Scoville, New Haven, Conn.—p. 217.
- *Grouping of Influenza Bacillus by Specific Agglutination. J. C. Small and G. K. Dickson, St. Louis.—p. 230.
- *Chemotherapeutics of Chaulmoogric Acid Series and Other Fatty Acids in Leprosy and Tuberculosis. E. L. Walker and M. A. Sweeny, San Francisco.—p. 238.
- *Experimental Streptococcus Empyema. Attempts at Prevention and Therapy by Means of Vaccines and Serum. F. P. Gav and R. L. Stone, Berkeley, Calif.—p. 265.

Influenza Epidemic.—A study of the census statistics for the larger cities of the United States as a whole, made by Winslow and Rogers, showed a very definite relation between the severity of the 1918 epidemic and both the pneumonia death rate and the total death rate for the sixteen years preceding. The relationship is, in general, a geographic one, the Eastern and Southern cities showing high death rates, the Middle Western and Western cities showing low death rates in each case. In the Eastern section the results are attributed to unfavorable economic conditions associated with industrial life and the presence of certain foreign race stocks always characterized by a high death rate.

Grouping of Influenza Bacillus.—Four groups have been identified by Small and Dickson and 70 per cent. of the strains studied fall into two groups. They maintain that the hemophilic organisms (*B. influenzae*) can be grouped by immunologic methods.

Antiseptic and Bactericidal Actions of Chaulmoogra Oil.—This report is concerned exclusively with a study of the antiseptic and bactericidal actions of chaulmoogra oil and its constituents, the identification of the specificity of its bac-

tericidal action for acid-fast bacilli, and an investigation of the presence or absence of this bactericidal substance in cod liver and other oils. Walker and Sweeney state that chaulmoogra oil contains bactericidal substances that are about one hundred times more active than phenol. They are the fatty acids of the chaulmoogric series, chaulmoogric and hydnocarpic acids, and possibly lower isomers of this series. The bactericidal activity is specific for the acid-fast group of bacteria only. The fatty acids of cod liver oil do not possess the specific activity of the chaulmoogric oil series. The authors' experiments do not support the claim of Rogers for sodium morrhuate in the specific therapy of tuberculosis but their findings do supply a scientific basis for the use of chaulmoogra oil and its products in leprosy.

Experimental Streptococcus Empyema.—According to the results obtained by Gay and Stone, experimental streptococcus empyema in rabbits may be prevented by previous immunization with killed, followed by living, cultures of the same strain of streptococcus, but only when repeated vaccinations have been practiced and in a total amount which would seem to preclude the practicability of such a preventive inoculation in human beings, provided the conditions are similar. Attempted vaccine therapy of the localized symptoms has given consistently negative results.

April, 1920, 26, No. 4

- *Streptolysin. P. H. DeKruif and P. M. Ireland, Ann Arbor, Mich.—p. 285.
- Influence of Thorium X on Antibody Formation. L. Hektoen and H. J. Corper, Chicago.—p. 330.
- *Bacillus of Colon-Typhoid Group Isolated from Case of Furunculosis. W. W. Oliver and A. F. Schwab, Brooklyn.—p. 336.
- Paratyphoid Bacilli Recently Isolated from Animals. R. B. Spray, Lafayette, Ind.—p. 340.
- Intracellular Protozoan Parasite of Ducts of Salivary Glands of Guinea-Pig. L. Jackson, Chicago.—p. 347.
- Causes for Variation in Determinations of Disinfecting Values. B. Fantus and F. Rumry, Chicago.—p. 351.
- Chemotherapeutic Studies with Ethylhydrocuprein and Mercurophen in Experimental Pneumococcus Meningitis in Rabbits. J. A. Kolmer and G. Idsumi, Philadelphia.—p. 355.

Streptolysin.—Hemolysin production in serum broth by beta hemolytic streptococcus was studied by de Kruif and Ireland. The data gleaned have been used in the synthesis of a new blood agar plate.

Colon-Typhoid Group Bacillus in Furunculosis.—From a pure culture of this organism, Oliver and Schwab made an autogenous vaccine. Following the initial injection of minim (about one-half billion bacilli per cubic centimeter) the patient exhibited marked local and general reaction. As a result of this treatment, the patient was free from boils for almost two years. In the opinion of the authors this suggests a relationship of the bacillus to the disease. The organism and its life history are described in detail.

Medical Record, New York

May 8, 1920, 97, No. 19

- Poisonous Sumachs; Rhus Poisoning; Remedies. W. L. Macatee, Washington, D. C.—p. 771.
- Poise or Tranquillity a Necessary Condition of Economic Repair. J. M. Taylor, Philadelphia.—p. 780.
- Rôle of Neurons. J. H. Dowd, Buffalo.—p. 784.
- *Hyperchlorhydria; Frequent Causes of Defective Appetite in Children. J. H. Kerley, New York.—p. 786.
- Philosophy of Human Sympathy. J. C. Bateson, Scranton.—p. 787.
- Compulsion Neuroses (Obsessions, Doubts and Phobias). H. Laverson, New York.—p. 790.

Hyperchlorhydria Causing Poor Appetite.—Kerley maintains that a common cause of defective appetite in children of the runabout age, or older, is hyperchlorhydria, with the resulting symptoms of variable desire for food, indefinite abdominal pains, flatulency, and acid eructations. The treatment consists of giving alkalis to neutralize the excess of acids, of substituting an easily digestible, nonirritative diet, and of giving due attention to general hygienic measures.

May 15, 1920, 97, No. 20

- Lethargic Encephalitis. E. L. Hunt, New York.—p. 815.
- Prevention of Respiratory Diseases in Infancy and Early Childhood. J. Sobel, New York.—p. 817.
- *Skin as an Index to Health. M. Scholtz, Los Angeles.—p. 824.
- Treatment of Splanchnic Relaxation by Electrical Currents. W. Martin, Atlantic City, N. J.—p. 828.

- *Acute Intussusception; Report of Case Relieved by Enema. S. K. Levy, New York.—p. 831.
- *Case of Delayed Postoperative Hemorrhage Following Tonsil and Adenoid Removal. E. V. Hubbard, New York.—p. 832.

Skin as Index to Health.—Scholtz points out that in many conditions the skin lesion is merely a manifestation of a general disease, therefore the closest cooperation between internist and dermatologist is both essential and of value. Such cooperation would help the dermatologist as much as the clinician, because in the absence of thorough systemic examination many patients receive only symptomatic relief.

Acute Intussusception.—Levy pleads for less haste in adopting radical methods in these cases, especially when they are seen early. In the case reported, he gave an enema of 1 quart of sterile water very slowly with relief of the intussusception. He advises not to elevate the container more than 6 feet.

Delayed Postoperative Hemorrhage After Tonsillectomy.—The tenth night after operation, Hubbard's patient had a profuse hemorrhage from the mouth, her condition prior to that time having been wholly satisfactory.

Neurological Bulletin, New York

October, 1919, 2, No. 10

- General Consideration of Cranial Nerves. H. A. Riley, New York.—p. 361.
- Case of Epidemic Polioencephalitis with Ticlike Movements. G. C. Andrews, New York.—p. 370.
- Marie's Heredo-Cerebellar Ataxia: Report of Case. M. Osnato, New York.—p. 372.
- Limitations of Tinel's Sign in Peripheral Nerve Injuries. B. Stookey, New York.—p. 380.
- Case of Progressive Spinal Muscular Atrophy. R. A. Gerber, New York.—p. 385.

New Jersey Medical Society Journal, Orange

April, 1920, 17, No. 4

- Common Diseases of Rectum. D. B. Pfeiffer, Philadelphia.—p. 109.
- Conservative and Reconstructive War Surgery. R. E. Soule, Newark.—p. 112.
- Importance and Use of Biologic Products in Public Health Work. J. F. Anderson, New Brunswick.—p. 117.
- Clinical Résumé of Influenza in Recent Epidemic. F. C. Horsford, Newark.—p. 121.
- Is He a Maligner? A. C. Ruoff, West Hoboken.—p. 124.

New Orleans Medical and Surgical Journal

April, 1920, 72, No. 10

- Experience with Shock and Hemorrhage. S. C. Jamieson, New Orleans.—p. 584.
- Suggestions in Physical Diagnosis. O. W. Berhea, New Orleans.—p. 591.
- Specimen of Tubal Pregnancy. F. L. King, New Orleans.—p. 594.
- Spinal Analgesia. S. P. Delaup, New Orleans.—p. 595.

New York Medical Journal

May 8, 1920, 111, No. 19

- Acidosis: Its Mechanism, Recognition, and Clinical Manifestations. G. M. Piersol, Philadelphia.—p. 793.
- Drugless Therapy of Diabetes. H. S. Stark, New York.—p. 800.
- Limitation of Starvation in Diabetes Mellitus. T. W. Edgar, New York.—p. 803.
- Advantages of Class Instruction in Treatment of Diabetes. N. W. Janney, Santa Barbara, Calif.—p. 806.
- History of Diabetes Mellitus. P. Horowitz, New York.—p. 807.
- Case of Diabetes Insipidus. T. G. Schnabel and A. H. Gerhard, Philadelphia.—p. 812.
- Diabetes in Association with Toxic Goiter. J. C. O'Day, Honolulu.—p. 815.
- Obligations of Medicine in Relation to General Education. W. C. Braisted, Washington, D. C.—p. 817.

May 15, 1920, 111, No. 20

- Influenza as Pulmonary Necrotic Alveolitis Involving Endocrines. C. E. DeM. Sajous, Philadelphia.—p. 837.
- *Experiments with Transmitting Influenza Through Fleas. C. Engelbreth, Copenhagen.—p. 846.
- *Acute Indigestion. B. Robinson, New York.—p. 848.
- Gastric Disturbances in Appendicular Inflammation. S. Floersheim, Los Angeles.—p. 849.
- Outbreak of Diphtheria in Small City. I. W. Brewer, Watertown, N. Y.—p. 849.
- Group Diagnosis. J. Gutman, Brooklyn.—p. 851.
- Relation of Neurologist to Group Diagnosis. C. Rosenheck, New York.—p. 855.
- Heredity. L. D. McEvoy, New York.—p. 858.
- Medical Opportunities for Women in Japan. C. F. Furness, Poughkeepsie, N. Y.—p. 860.

Transmitting Influenza Through Fleas.—Engelbreth conducted experiments on human beings. Fleas were allowed to bite persons suffering from undoubted influenza, and some with a complicating pneumonia, and, then, these fleas were placed on the skin of normal persons. In one half of the fourteen experiments made the result was negative. The author suggests that, perhaps, the fleas used had not been infected or that the infection in them had run out. Infected fleas died much more quickly than uninfected fleas. In the positive cases, the symptoms were those of a mild influenza, such as occurs for the most part in epidemics of this disease, and without complications, except in one case in which pneumonia developed.

Acute Indigestion.—The cases of death from "acute indigestion" reported by the lay press Robinson says are really not such at all. The cause of death in these cases is primarily an overstrained, weakened heart, already diseased, or a cerebral hemorrhage, a weakened circulation with diseased arteries causing stasis in the vessels of the brain. He regards the use of strophanthus, a hypodermic tablet placed under the tongue, as the best treatment in these cases.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

January, 1920, 42, No. 4

Suggestion and Suggestibility. E. Prideaux.—p. 291.

*Lethargic Encephalitis; Sequels and Morbid Anatomy. E. F. Buzzard and J. G. Greenfield.—p. 305.

*Local Paralysis Following Superficial Injuries not Involving Nerve Trunks: Traumatic "Ascending Neuritis" and "Reflex Paralysis." F. M. R. Walshe.—p. 339.

Lethargic Encephalitis.—In the opinion of Buzzard and Greenfield there is no reason to suppose that lethargic encephalitis is a new disease; endemic cases occur from time to time. Cases of patients suffering from symptoms of acute or subacute cerebral disease have been diagnosed as cerebral hemorrhage, and in others a diagnosis has never been properly established. A detailed report is given of twenty cases, and the pathologic findings in five fatal cases are described. The histologic appearances of the brains examined were very varying. But there were certain features common to all cases in the early stages. They are: (1) vascular congestion; (2) evidence of toxic degeneration of the nerve cells and neurophagy; (3) proliferation of the mesoblastic cells of the vessel walls, and infiltration of the nervous tissue with these cells; (4) small celled infiltration of the Vichow-Robin space and (5) glial proliferation. They are given in the order in which they occur most constantly.

Traumatic Ascending Paralysis.—Four cases are analyzed by Walshe. They show that a trivial injury, not necessarily a wound and not involving a nerve trunk, may produce marked paresis, or paralysis, with wasting of muscles and diminution of their faradic excitability, impairment of the corresponding tendon jerk, subjective and objective sensory changes and vasomotor disturbances. These signs have a definite anatomic topography and correspond to the innervation of a peripheral nerve. The character of the symptoms is that of a localized neuritis (mononeuritis). Though in every instance progressive, there was evidence of continued upward extension in only one case. In every instance, the injury was within the territory innervated by the affected nerve, though not involving its trunk. In two cases the cutaneous endings of the nerve had been directly injured. In one it overlaid these, while in one case it involved both deep and cutaneous afferent endings. Sepsis does not appear to have been an essential factor. It is clear that in these cases there is an organic disturbance of structures anatomically related. They approximate in type to the conditions known as "ascending neuritis," rather than to the muscular reflex affection of acute arthritis and allied lesions. Walshe suggests that a small proportion of Babinski's cases of "reflex nervous disorders" may have been of the same nature.

British Medical Journal, London

March 20, 1920, 1, No. 3090

Elements of Psychoneuroses. H. Head.—p. 389.

Nature, Prevention and Treatment of Heat Hyperpyrexia. W. H. Willcox.—p. 392.

Id. L. Hill.—p. 397.

*Dietetic Treatment of Diabetes Mellitus. R. T. Williamson.—p. 399.

*Nephritis: Abdominal Hemorrhage: Death. J. E. Blomfield.—p. 400.

Case of Acute Yellow Atrophy of Liver. E. C. Whitehead.—p. 400.

Tuberculous Cow. J. E. Scales.—p. 400.

Dietetic Treatment of Diabetes Mellitus.—In cases uncomplicated by "acidosis" and certain other secondary affections, when the ordinary restriction of carbohydrates in the diet fails promptly to check the glycosuria, Williamson advises complete rest, and for seven days a diet composed of a mixture of casein, cream and water, given every two hours, from 8 a. m. to 10 p. m., without any soiled food. In many cases this diet promptly checked the glycosuria when other treatment had failed. At the end of the seven days a change is gradually made to a suitable solid diet, the amount of carbohydrates which the patient could tolerate being carefully noted. During the war period, in place of casein and cream solution, Williamson often used a diet composed chiefly of eggs and milk, given every two hours for seven days, or a diet chiefly of suitable vegetables and jelly. Both of these are more palatable, and are often useful, but not so frequently successful as the casein and cream solution. At the end of the war period, the casein obtainable was very often unsatisfactory in taste and odor, and Williamson has recently employed, with great success in many cases a mixture and course of treatment, which can be easily carried out. The mixture is a useful substitute for the casein and cream solution. If "acidosis" and other serious complications can be excluded, and if an ordinary diabetic diet, with restriction of carbohydrates, fails to check the glycosuria promptly, then the patient is advised to rest on the sofa for seven days (or for a shorter period) and to make a mixture of eggs, cream and water, prepared as follows: Three eggs are beaten up with 3 ounces of cream and a little water. More water is then added gradually until the mixture measures 4 pints. Of this mixture the patient takes half a pint every two hours, from 8 a. m. to 10 p. m. In addition, he takes coffee or tea at 8 a. m. and 4 p. m., and also beef tea (warm), half a pint at 12 noon, 6 p. m. and 10 p. m. No bread, no meat, and no other foods are taken during this period. In many cases the glycosuria is promptly checked in from four to seven days. This diet is not continued longer than seven days, and is then slowly changed to a solid diet containing only a small amount of carbohydrate food, the amount of bread and other carbohydrates which can be tolerated being carefully noted.

Nephritis with Abdominal Hemorrhage.—A woman presented symptoms which led Blomfield to make a diagnosis of influenza. Her main complaint was pain in the lumbar region. She improved somewhat under treatment but this back pain continued. The urine contained blood and albumin. The temperature was slightly elevated above the normal. Suddenly she had a "collapse" and died. At the necropsy the peritoneal cavity was found filled with blood and blood clots for which no source could be discovered. The heart was hypertrophied and the walls of the left ventricle were much thickened. At the right edge of the liver was a mass the size of the palm of the hand, resembling a blood clot. There was blood behind the peritoneum near the right kidney and petechial spots on the mesentery. There was also blood tracking up behind the peritoneum and into the thorax. Blomfield believes that this was a case of acute nephritis grafted on a chronic condition which caused a hemorrhagic diathesis.

Lancet, London

April 17, 1920, 1, No. 5042

Ambulatory Treatment of Fracture of Limbs: Tuberculous and Arthritic Disease of Joints. C. A. Hoefftke.—p. 28.

Higher Fungi in Relation to Human Pathology. Aldo Castellani.—p. 29.

"Heart" Cases in Egyptian Expeditionary Force. A. L. Krogh, W. T. Ritchie and E. H. White.—p. 852.

Accessory Food Factors (Vitamins) in Feeding of Infants. Edward Mellanby.—p. 856.

- Relation of Lipochrome Pigments to Fat-Soluble Accessory Food Factor. O. Rosenheim and J. C. Drummond.—p. 862.
- *Treatment of Bilharzia Disease with Tartar Emetic in South Africa. F. G. Cawston.—p. 865.
- *Blood Transfusion Before Operation in Severe Secondary Anemias. Herbert Williamson.—p. 867.
- Medical Problems of Life Assurance. T. D. Lister.—p. 892.

Tartar Emetic in Bilharziasis.—The experience Cawston has gained from watching a series of cases shows that the scalding and vesical pain that these patients complain of may be expected to disappear after the second or third intravenous injection. The patient will probably remark on the disappearance of the blood from the urine within a week or ten days, though hematuria may be prolonged where there is a tendency to papillomatous growths. Degenerating maricidia may be seen within the shells of the eggs shortly after the dose administered has reached a full grain. Blackened eggs may appear after a total of $1\frac{1}{4}$ grain has been given. Free swimming, dying maricidia are not uncommon in undiluted urine at the end of the two weeks' treatment. A cloudy condition of the urine due to phosphates is common during the second or third week, and readily responds to treatment. The disease is usually cured when the urine has been free from living eggs for a fortnight or three weeks. The presence of many dead eggs and blood cells indicates that further treatment is required. The absence of living eggs for a month indicates that the female parasites are all dead. If the parasites are going to cause mischief again, they are unlikely to take more than a fortnight to three weeks to recover after the treatment has ceased.

Blood Transfusion in Secondary Anemia.—A case of anemia caused by a uterine fibromyoma in which blood transfusion was resorted to, is reported by Williamson. He says that in the future he will do this before operating for fibromyoma so as to diminish the risk of the operation, lessen the liability to thrombosis, and shorten the period of convalescence. He proposes also, when the patient is very anemic, to adopt this procedure in cases of carcinoma of the cervix before performing Wertheim's operation. He suggests further that blood transfusion should be performed before delivery in cases of severe antepartum hemorrhage.

Tubercle, London

November, 1919, 1, No. 2

- *Effect of Occupation on Incidence of Pulmonary Tuberculosis. E. L. Collis.—p. 49.
- Prognosis in Tuberculosis. F. Kraus.—p. 56.
- *Case of Pneumothorax. N. Robertson.—p. 64.

Effect of Occupation on Tuberculosis Incidence.—Collis maintains that the evidence he adduces proves that there is a type of phthisis which causes death in middle age—that time of life when the effect of occupation has had time to make its impress on the human organism; and that industrial life in some way directly promotes its incidence.

Pneumothorax.—The case reported by Robertson is interesting and unusual because the commencement of the disappearance of pneumothorax signs on the right side was coincident with the appearance of air in the subcutaneous tissues on the left side. Simultaneously the pressure symptoms subsided and the temperature fell. The tissues on the left side were quite definitely crepitant to touch exactly as in a case of surgical emphysema.

December, 1919, 1, No. 3

- *Syphilis and Tuberculosis. A. Mirande.—p. 105.
- Pneumothorax Treatment of Pulmonary Tuberculosis. C. Riviere.—p. 114.
- Treatment of Laryngeal Tuberculosis with Spiess's Gold Solution (ethylene-diamin-canthalidin-aurecyanid). E. G. Glover.—p. 126.

Syphilis and Tuberculosis.—The following statements indicate Mirande's agreement with Sergent's results: Syphilis and tuberculosis are very intimately connected. Syphilis provides a soil for tubercle bacillus. If the organism overcomes the initial effects of the association, and if treatment is commenced, the tuberculosis lesion exhibits a tendency to assume a fibrous nature. Mercury, far from being noxious, is the remedy for syphilituberculosis.

Archives de Médecine des Enfants, Paris

April, 1920, 23, No. 4

- Significance of Eruptions in Children's Diseases. Jourdanet.—p. 201.
- Hereditary Syphilis and Dystrophies. Hutinel and Stévenin.—p. 205.
- Conc'n.
- Congenital and Hysteric High Shoulder. A. Tréves.—p. 238.
- Adhesion of Tip of Tongue in Cleft Palate. J. A. Phélip.—p. 243.

Bulletin de l'Académie de Médecine, Paris

March 2, 1920, 83, No. 9

- *Hyperglycorachia in Epidemic Encephalitis. C. Dopter.—p. 203.
- *Syphilis and Epidemic Encephalitis. E. Jeanselme.—p. 210.
- Remote Consequences of Epidemic Encephalitis. H. Claude.—p. 215.
- Chronic Dyspepsia in the Gassed. M. Loeper.—p. 217.

Sugar in Cerebrospinal Fluid in Epidemic Encephalitis.—Dopter found 0.85 gm. per liter of the fluid in a young man with symptoms suggesting tuberculous or syphilitic meningitis. This hyperglycorachia, as he calls it, differentiated the case as epidemic encephalitis as the fluid was limpid and the Wassermann test negative. This excessive sugar content is not constant, but it is an aid in differentiation when found.

Syphilis or Epidemic Encephalitis.—Jeanselme comments on the difficulty of distinguishing between these diseases when the encephalitis develops in a syphilitic. Each is liable to entail dissociated paralysis of the cranial nerves, the Argyll Robertson sign, convulsions and apoplectic coma. He describes an instructive case of the combination.

March 16, 1920, 83, No. 11

- *Lethargic Encephalitis. Laubie.—p. 246. G. Marinesco (Bucharest).—p. 248.
- *Index of Renal Excretion of Chlorid and Water. A. Pruche.—p. 256.
- Sequelae of Appendicectomy. Enriquez.—p. 258.
- *School Inspection During Epidemics. L. Azoulay.—p. 262.
- *Prophylaxis of Typhus. P. F. Armand-Delille.—p. 265.

Antitetanus Serum in Treatment of Lethargic Encephalitis.—There was prompt improvement in Laubie's two cases and in Coquet's case of severe epidemic encephalitis, with stiffness of the neck and contractures, after intraspinal or subcutaneous injection of antitetanus serum. The injection was made the fourth day in one case, and, in all, the symptoms subsided in thirty-six to forty-eight hours afterward.

Index of Renal Excretion of Water and Chlorids.—Pruche gives a formula for determination of what he call the *coefficient hydrochlorurée*. It is determined by comparing the concentration of chlorids in the urine with the dry residue obtained by evaporation of the blood serum.

Management of School Inspection During Epidemics.—Azoulay suggests having separate quarters, where the classes can be held in case of an epidemic, for the children from homes where there is a case of the epidemic disease, when, on account of quarantine measures, as many as ten or fifteen children have to be excluded from attending school. Children who have recovered from the epidemic disease should also attend this separate school for the contagious, until they can present a certificate from some physician to the effect that danger from them is past. He advises offering a premium for the declaration by physician or layman of an acute contagious disease, verified by a third party. Printed circulars should be distributed to parents, and be placarded, dealing with the disease, its prophylaxis and the necessity for collaborating with the public health authorities.

Prophylaxis of Typhus.—Armand-Delille explains that lice are unable to proliferate when for a third at least of each twenty-four hours they are deprived of the warmth of the body. It takes twelve days for the louse to mature, hence if the clothes are ironed on the inside with a hot iron once a week for four or five weeks, this will interrupt the evolution of the different generations as they develop and none will reach the reproduction period. They thus all die off in time although the hot iron does not kill them all, but it destroys enough of the lice and nits for the purpose, even with a single weekly ironing, especially along the seams. He warns further that when different shifts of workmen occupy the same beds, so that they are more or less continually in use, this breeds vermin rapidly, while letting the bedding grow cold for several hours checks the development and reproduction of lice.

Bulletin Médical, Paris

March 20, 1920, 34, No. 17

*Aphasia and Apraxia. Laignel-Lavastine.—p. 277.

March 27, 1920, 34, No. 18. Bacteriotherapy Number

*Vaccines in Therapeutics. L. Girard.—p. 297; in Typhoid. H. Méry.—p. 301; in Typhoid. L. Fournier and A. Schwartz.—p. 303; in Dermatology. A. Mauté.—p. 310; in Epidemic Meningitis. L. Girard.—p. 313.

Aphasia and Apraxia.—Laignel-Lavastine summarizes our present knowledge of this subject, and emphasizes the necessity for eight forms of tests, tests for spontaneous speech, for repeated words, reading aloud, spontaneous writing, writing from a copy and writing from dictation, study of comprehension of spoken words, and study of comprehension of printed words. With apraxia the simple reflex and expressive movements must be studied as well as the descriptive and other movements, as he enumerates in detail.

Vaccines in Therapeutics.—Girard describes the technic for the preparation of vaccines, the indications for them in general, and the diseases for which they have been used to date. Méry reviews the experiences with vaccine in prophylaxis and treatment of typhoid, injected subcutaneously, and Fournier and Schwartz describe their experiences with the same given by the mouth. They report a favorable action from this buccal vaccinothrapy in nearly every case, the prompter and more decided, the earlier in the disease this treatment was begun. The fever rapidly subsided and the course of the disease was notably shortened in the favorable cases. They had only eight deaths among their 150 typhoid patients given this treatment, and in this small group of fatal cases the fatal outcome was due to acute myocarditis, perforation of the bowel the second day, acute appendicitis or complicating influenzal pneumonia. The vaccine they use contains about 0.25 gm. of the desiccated bodies of the bacteria from twenty-four hour cultures of typhoid and paratyphoid bacilli.

Mauté reviews his personal experience with vaccine therapy in skin diseases, declaring that his results have been so interesting that they should inspire every physician to try this method in prophylaxis and in treatment. He prefers autovaccines for their infinitely less toxicity, the absence of local reaction, and the painlessness of the injection, and the fact that recurrences are much less frequent. He refers to Danysz' success with an emulsion of germs from the patient's stools, administered by the mouth and subcutaneously, and states that indirect immunity can be realized with ordinary saprophytes in typhoid and in rebellious eczema and pruritus. He has found further that intravenous injection of a staphylococcus vaccine, 20 millions on alternate days for a series of six injections, has a manifest influence on rebellious acne, and yet acne is not a staphylococcus disease. He theorizes to explain its action, and remarks that, in any event, the fact is worth remembering in treatment of such a rebellious affection as acne.

He has also utilized in treatment of erysipelas a water-soluble substance derived from the stools by precipitation with alcohol, after separating out the albumins with heat in an acid solution; it has a pronounced regulating action on the peripheral circulation. The therapeutic rôle of microbial injections, he continues, is thus becoming more and more extensive, and susceptible of numerous clinical applications hitherto undreamed of. He adds that staphylococcus vaccines seem to be the only efficient ones in dermatology; his experience with streptococcus vaccines has been disappointing, especially in recurring erysipelas. The staphylococcus vaccine can be used not only in furunculosis and carbuncle but also for folliculitis and sycosis. When it is important to act quickly, he does not hesitate to inject the vaccine by the vein. He begins with 10 millions; gives 15 millions the next day, and the third day 20 millions, repeating this last dose two days later. After a pause of three days he begins anew, but only with the preventive doses this time. With these doses, he says, the intravenous injection of the staphylococcus vaccine does not cause any general reaction. For the subcutaneous injection he uses doses of from 250 to 500 millions.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 13, 1920, 44, No. 6

Lethargic Encephalitis. M. Labbé and others.—pp. 194, 198, 199, 207, 209.

*Suprarenal Insufficiency in Relapsing Fever. Monziols and Collignon.—p. 214.

*Plague at Constantinople. Idem.—p. 215.

Acute Suprarenal Insufficiency After Arsenic Treatment of Relapsing Fever.—Monziols and Collignon explain the acute suprarenal insufficiency, sometimes observed after injection of neo-arsphenamin in treatment of relapsing fever, as due to the sudden flooding of the organism with the toxic products liberated by the sudden destruction of the spirochetes. The suprarenals are unable to keep up with their task in these circumstances, and acute suprarenal insufficiency is soon manifest. All trouble from this source could be averted, they found, if epinephrin was injected with the neo-arsphenamin. This tided the patient along without harm until his suprarenals could cope with the conditions.

Plague in Constantinople.—Monziols and Collignon review their experiences with forty-four cases of plague at Constantinople in the last quarter of 1919. The mortality was 40 per cent. The bacillus was found in the blood only in 16 per cent. of the twenty-five examined, and it had disappeared from the blood by the sixth to the twelfth day.

Paris Médical

March 6, 1920, 10, No. 10

*Dermatology and Syphilis in 1920. G. Milian.—p. 181.

Continuous Suppurative Acrodermatitis. E. Bodin.—p. 185.

*Generalized Xanthoma. L. Spillmann and Watrin.—p. 193.

*Urticaria. A. Louste.—p. 198.

*Malaria as Factor in Malignant Syphilis. Lacapère and Decrop.—p. 203.

Eczema as a Tuberculid. G. Milian.—p. 206.

Influence of Inadequate Treatment on Appearance of Meningeal Syphilis. M. Pinard.—p. 211.

Dermatology and Syphilis in 1920.—Milian regards as established that there are different kinds of *Spirochæta pallida*, so that the old term "parasyphilis" for tabes and general paresis is correct. The difference between tabes, general paresis and syphilis in general is analogous to the difference between typhoid and paratyphoid. He comments on Hutinel's recent report of cases of latent inherited syphilis roused to active evolution by some intercurrent acute infectious disease. Lesions may flare up in bone, skin or elsewhere, and the syphilitic nature be overlooked unless the physician is on the alert to recognize the unusual aspect of the intercurrent disease under these circumstances.

Generalized Xanthoma.—Two colored plates show the histologic findings in a case of generalized papulous xanthoma in a boy of 9. His entire body was scattered with small polygonal tumors, yellowish or brown, for which no cause could be discovered. They persisted practically unmodified for nearly five years. Then the child died from privations during the German occupation of his town.

Anaphylaxis.—Louste is inclined to accept the physical theory of anaphylaxis rather than Richet's chemical or Friedländer's biologic theory. The physical theory ascribes the anaphylactic shock to processes of precipitation and absorption between colloids. This would explain the similarity of the phenomena observed, regardless of the etiology. It is possible that the chemical theory supplements the physical theory by assuming a chemical action as predisposing to the physical changes. Treatment should aim not only to ward off the cause but at the same time to train the subject to be less susceptible to the cause. A small preliminary dose or injection of peptone or similar substance adapts the organism so that the anaphylactic shock is warded off. Intolerance to quinin can thus be cultivated away by a small preliminary dose before the therapeutic dose of the drug. Sicard has found that the therapeutic dose of an antiserum can be safely injected into the arm when the circulation is completely shut off. In a few minutes the circulation can be restored by removal of the constricting band, this brief delay being sufficient to ward off danger of anaphylaxis from the antiserum. Pagniez has cured patients of intolerance for albumin in the food by having them take 0.5 gm. of peptone regularly before the meal. It is a simple matter

by this means to confer lasting immunity on the patient and relieve him of his annoying or dangerous idiosyncrasy.

Presse Médicale, Paris

April 7, 1920, 28, No. 20

*Lethargic Encephalitis. A. Netter.—p. 193.

*Typhus. Legry, Courcoux and J. Lermoyez.—p. 195.

Epidemic Encephalitis.—This is an address delivered by Netter in the Sarre district where the disease is appearing.

Typhus.—A few mild cases of typhus having appeared in a group of foreign workmen in Paris, Legry and his co-workers warn all to be on the alert for such cases, and they describe the early clinical picture: the sudden onset, extreme prostration, high fever, headache and congested catarrhal conjunctivae.

April 10, 1920, 28, No. 21

*Hygiene and Its Perspectives. L. Bernard.—p. 201.

Intravenous Injections of Hypertonic Glucose Solution. L. Cheinisse.—p. 206.

Hygiene and Its Perspectives.—This is Bernard's inaugural address on assuming the chair of hygiene at Paris.

April 14, 1920, 28, No. 22

*Myoclonic Encephalitis. J. A. Sicard.—p. 213.

The General Reactions of Bone Tissue in Bone Disease. Nathan.—p. 214.

Myoclonic Encephalitis.—Sicard has encountered in less than three months five cases of what he calls myoclonic encephalitis, and says that it must rank beside lethargic encephalitis. General lassitude and intense lancinating pains with mild fever may keep up for a week or ten days; then comes a week or so of the muscular jerkings and twitchings but there is no contracture, no spasms, no chorea nor athetosis, only actual myoclonia. During this stage the neuralgic pains subside and there is no somnolency nor ocular symptoms. Toward the third week there may be a tendency to delirium but the reflexes and the pupils keep normal. The whole course of the disease is from four to eight weeks. In the terminal stage the delirium is constant but the other symptoms subside, and the patient falls into coma and dies or the delirium subsides and he recovers. The disease does not seem to have a destructive action on the nervous system but rather to fasten on it momentarily and impress it, and then pass off. Although the symptoms seem so grave yet they are transient, and if the patient recovers no permanent damage seems to result.

Progrès Médical, Paris

March 20, 1920, 35, No. 12

*The Omentum from the Surgical Standpoint. A. Aimes.—p. 125.

*Catheterization of the Ureter for Anuria. L. Thévenot.—p. 129.

*Vein Urethroplasties. Legueu.—p. 130.

The Diplogenesis versus the Blastomere Theory in Relation to Double Monsters and Dermoid Cysts. E. Chauvin.—p. 132.

Surgical Importance of the Omentum.—Aimes discusses the protection afforded by the omentum in wounds and at operations, and its usefulness as a plastic material, reviewing the literature on the subject. He also analyzes several hundreds of cases of omentopexy on record, remarking in conclusion that this latter operation has some favorable cases to its credit, but on the whole has not fulfilled its promise. It has a high operative and postoperative mortality, and in cases of cirrhosis benefits only the one symptom, the ascites, and not always this.

Catheterization of the Ureter in Anuria from Concretions.—Thévenot knows of thirty-eight cases on record besides the two he here describes in which catheterization of the ureter put an end to the anuria either by pushing the calculus back into the kidney or by arresting a reflex spasm or by both mechanisms. If saline, glycerin or oil is injected through the catheter, this may induce reflex action causing the expulsion of the calculus. In some of the cases in the literature the anuria recurred later but was conquered in the same way by catheterizing anew. If there is no sign of uremia, this catheterization might be tried up to the fifth day of the anuria, but after this, or with uremia, nephrotomy should be done at once.

Vein Urethroplasties.—Legueu does not agree with those who think that there are too many drawbacks to using a vein to reconstruct the urethra. He reports a fairly successful case and states that in the twenty-three cases on record, an autograft was used in eighteen. The best results were realized with terminal urethroplasties, as this gives only one zone of stenosis. Diversion of the urine is an indispensable preliminary. Even more indispensable, he says, is the retention in the vein graft of its blood content. The segment of vein is tied at each end and the blood thus imprisoned serves to nourish the graft until it "takes." This gives it strength to resist the retraction of the skin in the tunnel made for it. He has traced the process in experiments on dogs.

Schweizerische medizinische Wochenschrift, Basel

March 25, 1920, 50, No. 13

*The Internal Secretion of the Ovaries and Functional Uterine Hemorrhage. H. Meyer-Ruegg.—p. 241.

*Ambulant Treatment of Fractured Humerus. H. Iselin.—p. 248.

Epidemic Encephalitis at Zurich. H. W. Maier.—p. 249. Cont'n.

The Ovaries and Functional Hemorrhage from the Uterus.—Meyer-Ruegg presents the various theories in vogue on this subject, his own conviction being that functional uterine hemorrhage is not due primarily to the ovaries. "The nervous system or constitutional causes may be primarily involved, or the structure of the uterus. But removing the ovaries or devitalizing them with the roentgen rays breaks up the chain of processes which eventuate in menstruation, and this breaking of the chain occurs at a point where all the wires cross, that is, in the follicular apparatus. We are thus able to arrest menstruation entirely, but it is beyond our power to regulate it."

Fracture of the Humerus.—Iselin comments on the new light thrown on fracture of the humerus below the tuberosity by roentgenography from the axilla. This has shown that the sagittal displacement is usually much greater than would be suspected when examined from other planes. Ordinary extension does not suffice; it requires not only horizontal, sagittal extension but also diagonal adduction in the horizontal plane to correct the fracture. He gives illustrations of the roentgen findings and of the device with which he corrects the displacement while the patient is allowed to be up and about. The arm is held horizontal, the hand on the other shoulder, the entire arm resting on a thick upholstered cotton pad worn around the trunk, extending from the axillae to the waist, with a broad strap passing over the arm and over the hand on the other shoulder. This answered its purpose admirably in a number of cases as he describes.

Anales de la Facultad de Medicina, Lima

January-February, 1920, 3, No. 13

Case of Lethargic Encephalitis. E. Odrizola.—p. 5.

*American Trypanosomiasis in Peru. E. Escomel.—p. 14.

Essential Epilepsy. C. A. Bambarén.—p. 18. To be cont'd.

The Pharmacists of Early Peru. H. Valdizán.—p. 42.

Sudden Death at Lima. F. Quesada.—p. 49. Cont'n.

Normal and Pathologic Speech. L. D. Espejo.—p. 61. Cont'n.

Infant Mortality at Lima in 1918. R. Eyzaguirre.—p. 72.

American Trypanosomiasis in Peru.—Escomel found *Schizotrypanum cruzi* in the blood of a man of 40 from the part of Peru that borders on Brazil, and publishes it as the first case of Chagas' disease to be recorded in Peru. The symptoms were a certain degree of general edema, extreme prostration, and tendency to somnolency, but the man related that he had long been subject to "marsh fever," and his complexion was the greenish-yellowish pallor common to the dwellers in the tropical zone of the center of South America.

Crónica Médica, Lima

February, 1920, 37, No. 680

Nature of the Elemental Process of the Function. H. F. Delgado.—p. 45.

*The Pathologic Importance of the Proteins in the Urine. J. Lanfranco.—p. 59.

*Frambesia in Peru. Buenaventura Burga.—p. 72.

The Proteins in the Urine.—Lanfranco agrees with those who think there are not so many varieties of protein in the

urine as some allege. On the other hand, he declares, normal urine in the kidney is absolutely free from proteins of any kind. Among the proteinurias for which the liver is responsible, he lists the albuminuria of puberty, cyclic albuminuria, the albuminuria of the newly born, and alimentary albuminuria. There is also the proteinuria of endocrine or of cardiac origin and of chronic infections. In the latter the multiplicity of the lesions deprives the albuminuria of any exact diagnostic or prognostic value in respect to the kidneys.

Frambesia in Peru.—Yaws or frambesia is called *cuchipec* in Peru; it is usually mild and disappears without leaving a trace, but recurrence has been known. Two cases are described, and the discovery of *Treponema pertenue* in the lesions suggests that the disease might appropriately be called Castellani's treponemosis.

Revista Médica, Puebla, México

April, 1920, 2, No. 3

The Civil Authorities and Professional Secrecy. F. L. Casián.—p. 49.
Composition and Nutritive Value of Foods and Beverages of Native Mexicans. M. Ibañez.—p. 56. Cont'n.
Rupture of Body of Uterus. A. López Hermosa.—p. 65. Cont'n.

Archiv für Verdauungs-Krankheiten, Berlin

1920, 26, No. 1-2

*Obliteration of Hemorrhoids. I. Boas.—p. 1.
*Duodenal Tube Reveals Occult Hemorrhage. F. Seidl.—p. 19.
*Harmless (Renal) Diabetes. O. J. Wynhausen and M. Elzas.—p. 33.
*Percussion with Gastro-Intestinal Disease. R. Uhlmann.—p. 53.
Syphilitic Tumor of the Stomach. G. Haas.—p. 68.
*Effect on Gastric Secretion of Organ Extracts. F. Boenheim.—p. 74.
Roentgen-Ray Study of the Cecum Region. W. Bauermeister.—p. 121.

Obliteration of Hemorrhoids.—Boas' method of obliterating hemorrhoids by injection of alcohol into the nodules was described in THE JOURNAL, Feb. 14, 1920, page 497. He here gives minute directions for the procedure and emphasizes the fine results he has obtained in his fifty cases to date. The vacuum glass he uses to draw the hemorrhoids out from the anus fits over the entire anus region, and he applies the vacuum suction sometimes for as long as thirty minutes, to be sure that all the nodules have been sucked out. Even when the hemorrhoids protrude so that suction is not necessary, he usually applies it to make sure that no nodules will escape treatment. If there is much tendency to bleed, he gives three or four rectal injections of a 5 per cent. solution of calcium chlorid the day before.

When returned to the bowel after injection of the alcohol, the nodules shrivel and heal by a kind of thrombophlebitis process in three or four weeks and the mucosa finally feels quite normal. The whole process in the rectum is scarcely noticed by the patient, and requires no after-care as is necessary when the injected piles heal outside the anus. He rubs the extra-anal mucosa with petrolatum and is careful not to allow this mucosa to be pushed inside, as it may become irritated by escaping alcohol and possibly ulcerate. If any nodule protrudes anew after defecation it may be necessary to inject it anew with alcohol or allow it to heal outside the anus. In four of his fifty cases this treatment was applied on account of recurrence after excision some years before. The healing was complete in more than 50 per cent. of his cases in one or two weeks, including 25 per cent. healed in from four to eight days. With this technic the sphincter is left intact, and the results were as satisfactory in the severest as in the mildest cases, while the certainty and the permanence of the cure surpass, he reiterates, even what can be realized with the knife.

Duodenal Tube Reveals Occult Bleeding.—Seidl uses a soft duodenal tube to obtain contents from the cardiac and pylorus regions of the stomach and from the duodenum, to detect occult hemorrhage and locate approximately the source of the bleeding. In some cases of certain ulcer in stomach or duodenum the tube findings were positive when no trace of blood could be found in the stools on three examinations, at intervals, or else bleeding hemorrhoids rendered the findings unreliable. He gives the details of twenty-six of his total seventy cases thus examined, showing the instructive findings as the patient lies on his left side,

with the tube introduced for 50 cm. or on the right side, tube 90 cm., or the tube is carried down into the duodenum. The findings were constantly negative in patients showing no symptoms of an ulcer. The stomach and duodenal contents thus obtained can be used for other analysis, and repeated tests of this kind will distinguish ulcer from cancer, show the progress under treatment and the indications for operative measures. After gastro-enterostomy for ulcer, the ulcer did not heal unless a systematic dietetic treatment of the ulcer was enforced thereafter. The soft duodenal sound does not cause erosions which might obscure the findings.

Harmless Diabetes.—Wynhausen and Elzas prefer this term to "renal diabetes," the term usually employed to express glycosuria with normal sugar content of the blood and very slight if any of the usual symptoms of diabetes. This diabetes innocens, as they call it, is not rare as they have records of over thirty cases in a comparatively brief period, and they analyze most of them here. The disturbances are so slight that no one seeks medical aid for them, and the discovery of the glycosuria is usually accidental. It can be classed as belonging to this harmless group when the sugar content of the blood keeps normal before and after the test breakfast or does not go above 1.5 or 1.7 per thousand. They recognize four groups, all with normal blood sugar content, but classified according to the amount of glycosuria after the alimentary test. The harmless character persists in three of the groups, but in the fourth, in which there is slight glycosuria fasting but it runs up high after the alimentary test, symptoms suggesting true diabetes develop in time. The experiences related suggest further that it is possible for the sugar content of the blood to be above normal, and yet the glycosuria persists in this harmless type, showing no tendency to progress.

Tenderness on Percussion in Diagnosis of Gastro-Intestinal Disease.—Uhlmann insists that the sensitiveness to tapping is far more instructive than mere tenderness in the differentiation of inflammatory from nervous-functional processes, for localization of a pathologic focus and control of its progress or subsidence, for discovery of a localized painful point, and for estimation of irritation of the peritoneum. He gives examples of each of these and describes the zone of extra tenderness that usually encircles the point most sensitive to the percussion hammer. The sensitive zone is so clearly outlined by the patient on repeated examination that the method is actually objective.

Effect on Gastric Secretion of Extracts of Endocrine Glands.—Boenheim devotes nearly fifty pages to the account of his tentative treatment in this line, in 154 separate experiences. The findings are tabulated for comparison. A marked regulating influence on gastric hyperacidity was evident from thyroid and pituitary treatment, and on subacidity and anacidity from pancreas extract. Thymus and thyroid extract have a similar but less pronounced action. With normal acidity, he found that thymus and pituitary increased while thyroid and ovarian treatment reduced the acidity; after a test breakfast digestion of albumin was checked. He says that these endocrine extracts, injected subcutaneously, seem to have a potent action on gastric secretion, transforming it, probably by their effect on the nervous mechanism of the stomach. Some of his conclusions conflict with generally accepted views, but the results obtained justify, he says, continuing research in this line both experimentally and in the clinic, as the secretory functioning of the stomach can thus be modified at will by organ extracts, and the effect lasts long after the treatment has been suspended. His series of climacteric neuroses confirms that excessive ovarian functioning checks gastric secretion, while insufficient ovarian functioning entails a tendency to hyperacidity.

Deutsches Archiv für klinische Medizin, Leipzig

Oct. 24, 1919, 130, No. 5-6

*Atypical Chronic Anemia. F. Herzog.—p. 285.
*Atypical Hemolytic Jaundice. K. Beckmann.—p. 301.
*Polycythemia. G. Herrnheiser.—p. 315.
*Origin of Albuminuria. Recka Mandelbaum.—p. 331.
*Acute Yellow Atrophy of the Liver. W. Weigeldt.—p. 342.
*Influence of Muscular Work on Sugar Content of the Blood. O. Brösamlen and H. Sterkel.—p. 358.

Atypical Chronic Anemia.—Herzog describes two cases of chronic anemia, in men of 23 and 34, for which no cause could be discovered during life or at necropsy. The younger man died suddenly, during an apparent remission, from pulmonary edema. The blood picture was that of secondary anemia; there was no gastric achylia while the iron reaction in the organs excluded Biermer's pernicious anemia. The other man's anemia was of seven years' standing with various remissions, and intestinal hemorrhages for a time but the anemia had preceded them. There was no very active regeneration of blood, but the abnormality was too slight and of too long duration to be classed as aplastic anemia. The findings in the tongue resembled those of true pernicious anemia, but the lack of gastric achylia and the recent benefit from blood transfusion seemed to exclude this. The patient is still under observation.

Atypical Hemolytic Jaundice.—Beckmann reports the minute details of two cases of supposed hemolytic jaundice in which there were no signs of extra susceptibility of the blood corpuscles to hemolysis. But it proved possible by applying provocative measures to the spleen—as in malaria—to render the erythrocytes abnormally susceptible. In two other cases in which the erythrocytes were found already exceptionally fragile, these provocative measures failed to induce any appreciable modification. In one case of hemolytic jaundice, clinically normal conditions were restored after splenectomy except for slight anisocytosis and slightly abnormal susceptibility of the erythrocytes. He adds that no traces of any special hemolytic substances could be discovered. The provocative measures aimed to reduce the resisting powers of the organism in general, or of the spleen alone, and thus exaggerate the destruction of the blood. The spleen was lightly massaged and then douched with alternately hot and cold water, and the region was then exposed daily to the mercury quartz lamp from front and rear for periods increasing from five to sixty minutes in the course of the week, the provocative measures concluding with a single roentgen exposure of three quarters of the full dose. The patients were men of 37 and 34, and the child of the younger man showed a similar tendency to anemia and slight jaundice with enlargement of the spleen. The provocative measures induced prolonged extra susceptibility of the erythrocytes; it was evident six months afterward in the man reexamined. The stools were normally colored in both and there was urobilinuria, and the extra susceptibility of the erythrocytes coincided with increased numbers of erythrocytes but mainly of the microcyte type. Microcytosis seems to be typical of hemolytic jaundice, and suggests some causal connection. Removal of the spleen may cure the tendency completely and is usually followed by marked benefit, even in the familial form although it may not be lasting here. In one such case the spleen weighed $2\frac{1}{2}$ pounds and the erythrocyte susceptibility index dropped from 0.66 to 0.52, very close to the normal range.

Polycythemia.—Herrnheiser argues that not only increased production of erythrocytes but reduction in their normal destruction are involved in the production of true polycythemia rubra, and there may be various causes for this. In a case described with the metabolic findings nothing to indicate primary irritation of the bone marrow could be discovered. In such cases, he adds, special attention should be paid to detection of constitutional anomalies, to the cholesterol metabolism and to the behavior of the frequent orthostatic albuminuria. The patient in his case was a robust agricultural worker of 18 who complained of agonizing headaches, fatigue and dizziness. He ascribed the symptoms to a sunstroke the summer before. The spleen was not enlarged and the blood pressure was within normal range, but there was pronounced orthostatic albuminuria, and the cholesterol content of the serum was below normal. No relief was obtained from a single lumbar puncture. Venesection seemed to benefit more than raying the long bones, but as spontaneous remissions are sometimes observed, Herrnheiser does not regard this as conclusive.

Origin of Albuminuria.—Mandelbaum comments on the general assumption that while the diseased kidney may not

permit urea, salt or even water to pass, yet it will let the big albumin molecule filter through without interference. Clinical examination of sixty-two patients with various forms of kidney and bladder disease and a series of experiments on rabbits have demonstrated that this view is incorrect. The inflamed kidney epithelium does not allow the passage of serum albumin. Hence it follows that the albumin found in the urine does not come from the blood but must be secreted by the renal epithelium itself, an active, vital function or a reaction of the epithelium cells. Conditions here are the same as with meningitis; normally there are only traces of albumin in the cerebrospinal fluid, but when the meninges are inflamed then the albumin content rises. All the tests showed that filtering ascites fluid, pleural effusions, blood serum and similar fluids through a delicate animal membrane, such as the rabbit and cat intestine, the albumin content of the filtrate was about the same as that of the original fluid, and the proportion of albumin to globulin persisted unmodified, but when the membrane was hardened or otherwise rendered less permeable, the globulin was arrested first; with increasing impermeability none of the albumin passed into the filtrate or dialysate. Applying these findings to conditions in the kidney, either the proportion of globulin and albumin should be the same in the urine as in the blood, or the albumin should predominate. But this is not the case with diseased kidneys. A relative preponderance of globulin has been found in the urine in simply congested kidneys and in orthostatic albuminuria. This conflicts most decidedly with the assumption that the albumin merely filters through from the blood.

Acute Yellow Atrophy of the Liver.—Weigeldt reports the discovery of vacuolar inclusions in about 50 per cent. of the neutrophil polymorphonuclear leukocytes in a case of acute yellow atrophy of the liver in a man of 27. The number of erythrocytes and the hemoglobin percentage are usually above normal in this disease, and the neutrophils are above the usual figures, with displacement of the blood picture to the left. But these findings have no differential significance as they are common to phosphorus poisoning, infectious and other forms of jaundice. If these vacuolar cell inclusions are confirmed by others, this will aid materially in the diagnosis. The article is illustrated. Weigeldt has not been able to find any record of such intracellular findings in the accessible literature.

Influence of Muscular Exertion on Sugar Content of the Blood.—Brösamlen and Sterkel found a marked reduction in the sugar content of the blood in ten healthy persons after physical exertion leading to rapid fatigue. The maximum reduction was reached in from one and a half to four hours after the exertion. Corresponding tests in four diabetics were followed by a pronounced rise in the sugar content, beginning at once after the exertion and keeping up for several hours. The curve is not regular but shows slight rises and falls. The findings on the whole confirm that diabetes is essentially a pathologic excessive glycogenolysis. There did not seem to be any connection between the intensity of the reaction and the severity of the diabetes, in his cases, and in two of the tests a slight reduction of the blood sugar content was found. The findings are apt to be misleading unless series of tests are made, and it does not seem to be possible to modify the exertion-sugar curve by dieting or changing the mode of life.

Deutsche medizinische Wochenschrift, Berlin

March 25, 1920, 46, No. 13

- *Partial Immunity, with Depression of Virulence. Morgenroth and others.—p. 337.
Tonsils as Portal of Entry for Infections. J. Citron.—p. 340.
Diagnostic Value of Agglutination Reactions with Various Micro-Organisms Present in Typhus Fever. E. Weil.—p. 343.
Origin of Acute Leukemia. H. Lüdke.—p. 345.
Psychophysical Methods in Psychiatry. O. Löwenstein.—p. 348.
Critical View of Public Disinfection System. M. Neisser.—p. 351.
Reconstruction of Thumb. P. Manasse.—p. 352.
Dermatitis from Imitation Leather Sweatbands. Siebert.—p. 355;
Idem. J. Stangenberg.—p. 355.
Decline in Birth Rate and Loss of Life in England and France During the War. F. Prinzing.—p. 355.
Management of Epistaxis. G. Findler.—p. 356.

Partial Immunity, with Depression of Virulence.—Morgenroth, Biberstein and Schnitzer have been experimenting with superinfection, or superposed infection, as this field of investigation has thus far resisted any attempts to harmonize its findings with the prevailing theories in regard to immunity, and as experimental studies in this field seemed to promise good results. They started with the commonly accepted theory that the infected organism acquires an immunity against superinfection, and against a like, superposed infection, but they became interested in the investigations of Landsteiner and Finger, who maintain that the organism infected with syphilis is by no means immune to a new syphilitic infection, as has been commonly supposed. Their experiments demonstrated that mice with an experimental, chronic streptococcus infection, streptococci being found in the blood and in the organs, possess immunity toward a superinfection with streptococci, as is shown by the fact that when given a streptococcus dose, such as will kill normal animals within twenty-four hours, they show no change in their behavior. They are immune not only toward the strain of streptococcus with which they were primarily infected but also against foreign strains of streptococcus. However, this immunity is not absolute but relative, for it is broken down by a strain of especially high virulence, in which case the infection runs an acutely fatal course, as in the controls. This partial immunity does not lie in the fact that the superinfection does not "take"; on the contrary, the streptococci used for the superinfection appear in the blood and organs, and by the aid of especially "marked" strains could be shown to remain present for some time. The partial immunity consists, therefore, merely in a depression of the virulence of the infection. This immunity was developed in from six to twenty-four hours after the experimental infection. It does not seem to have anything to do with anaphylaxis, but presents a new kind of immunity. They theorize that the passing of an acute infection into a chronic phase is conditioned by the development of this "depression immunity." The latter is not the result of the chronic infection, but every infection that is not rapidly fatal has its course determined by the depression immunity. Each phase of the infection is the result of the antagonism between the causal germ and the degree of depression immunity at the moment. This assumption throws light on natural immunity and all other forms of immunity which do not fit into the picture of immunity from antibody production. They suggest in conclusion that certain hormones which normally regulate the growth of the cells may be the factors in this depression immunity.

Münchener medizinische Wochenschrift, Munich

Dec. 19, 1919, 66, No. 51

- *The Vessels in Syphilis and Nicotin Poisoning. R. Beneke.—p. 1463.
- Iodin Ions in Treatment of Erysipelas. K. F. Beck.—p. 1467.
- Year of Industrial Service and Physical Training. Weitz.—p. 1472.
- Need of Interest in Athletics in Schools and Universities. Pfister.—p. 1472.
- Sanitary Procedures in Southern Bavaria in 1919. G. Mayer.—p. 1473.
- Use of Pyoktanin in Internal Medicine. G. Blank.—p. 1474.
- Intravenous Injection of Opaque Fluids. W. Heyl.—p. 1475.
- Measurements in Deep Roentgenotherapy. H. Chaoul.—p. 1475.
- Utilization of Surplus Human Milk. R. T. von Jaschke.—p. 1477.
- Wound Diphtheria. A. Weinert.—p. 1477.
- Blood Findings in Typhus Fever. F. Schiff.—p. 1478.

Vascular Changes in Syphilis and Nicotin Poisoning.—Beneke reports three cases of nicotin poisoning that presented peculiar vessel symptoms: vascular dilatation, degeneration of the media, marked fatty degeneration of the intima, with relatively slight sclerosis; the coronary arteries and other branches of the aorta were especially implicated. Beneke regards it as significant that a predominating nicotin poisoning could cause such severe arterial changes. He thinks in view of these findings, and the fact that smoking is so widespread, the assumption that nicotin poisoning may be the primary cause of many cases of grave arterial changes, or at least a strong contributory factor, appears to be well founded. The three men were 42, 44 and 48 years old, and had been addicted to smoking many strong cigars or cigarettes. No abuse of alcohol was known and there was nothing to suggest syphilis or other infection. Two had succumbed to coronary failure.

Wiener klinische Wochenschrift, Vienna

Jan. 1, 1920, 33, No. 1

- Colloidal Gold Reaction in the Cerebrospinal Fluid in Syphilis. Kyrle, Brandt and Mraz.—p. 1.
- Accentuation of the Effect of Quinin by Means of Fluorescent Substances. S. Rusznyák.—p. 6.
- Combined Quinin and Methylene Blue Therapy in Malaria. Reitler.—p. 9.
- Radiotherapy in Carcinoma of the Larynx. G. Alexander.—p. 12.
- Mesenteric and Retroperitoneal Suppurations in the Differential Diagnosis of Appendicitis. W. Goldschmidt.—p. 14.
- *Thermopenetration in the Treatment of Chilblains. R. Grünbaum.—p. 16.

Thermopenetration in Treatment of Chilblains.—Grünbaum has tried the mercury vapor lamp repeatedly in the treatment of chilblains, as it has been so warmly recommended of late, but he has not found it essentially superior to other methods. For the past year he has therefore been trying another method and is enthusiastic over the results. In treating for other diseases, he discovered accidentally that chilblains improved rapidly following thermopenetration and soon disappeared entirely. He therefore began to use thermopenetration as the routine treatment for chilblains and he is convinced that it is far superior to all the other usual forms of treatment. He is inclined to think it will prove efficacious in severe frostbite, but has not had an opportunity to try it out yet.

Zentralblatt für Chirurgie, Leipzig

March 20, 1920, 47, No. 12

- Instrumental Method of Tying Knots in Ligatures and Sutures. V. D. Varela (Buenos Aires).—p. 266.
- Large Loose Body Found in Hydrocele of the Testis. E. Glass.—p. 267.
- Antagonistic Action of Pituitary and Epinephrin on the Intestines. B. Zondek.—p. 270.

March 27, 1920, 47, No. 13

- *Carcinoma Dose in Radiotherapy. J. C. Lehmann.—p. 290.
- *Postoperative Tetany and Parathyroid Grafts. E. Borchers.—p. 293.
- *Extraperitoneal Abdominal Incision for Nephrectomy. K. Hofmann.—p. 297.

Carcinoma Dosage in Radiotherapy.—Lehmann assumes that nowadays almost every surgeon gives his patients with carcinoma of the breast prophylactic raying, following an operation. He states that he and his associates in the surgical clinic at Rostock have been using this method for the last seven years with the result that the freedom from recurrences for a period of three years has decidedly increased, being formerly 33 and now 47.5 per cent. of the cases coming to operation. He finds that in cachectic patients carcinomas are not at all sensitive to roentgen rays, whereas in the aged, carcinomas are often of slow growth and in that case easier to check with roentgen rays. Chancroid of the lip requires much more than 100 per cent. of the erythema dose, and radium therapy will usually prove more efficacious than roentgenotherapy. While no doubt progress is being made in the technic of roentgenotherapy as applied to carcinoma of the breast, Lehmann does not think it is wise to be over-jubilant for fear of bringing the method into discredit.

Postoperative Tetany and Transplantation of Parathyroid Glands.—Borchers adds two more cases to the list of those in which parathyroid grafts have been successful in the treatment of postoperative tetany. It is unfortunate that ten years ago many surgeons, on the basis of animal experimentation, reached the conclusion that the transplantation of parathyroid glands from one person to another in treatment of tetany was useless. Their skeptical attitude was not justified, for even at that time excellent clinical results had been secured which Borchers is inclined to regard as more important than theoretical premises deduced from animal experimentation. Many authors had shown by animal experiments that the transplanted glands would not preserve their structure and function, but in man the glands, as can now be shown by a whole series of cases extending over several years, do preserve their structure and function, or at least a structure and function that protects. From this the important conclusion may be derived that animals behave functionally different from humans. That there are some failures still is only to be expected, but to date parathyroid grafting is the only treatment of chronic postoperative tetany that offers any chance for success.

The Extraperitoneal Abdominal Incision in Nephrectomy.

Hofmann denies that there is no essential difference between the extraperitoneal abdominal incision as recommended by him and paraperitoneal nephrectomy. He defends his method of an anterior longitudinal incision along the border of the rectus abdominis, or between the recti abdominis or even directly in the linea alba, analogous to Saenger's transperitoneal procedure, for the reason that thus the hilum of the kidney is brought into the center of the field of operation. The method is adapted to nephrectomy for any cause.

Zentralblatt für Gynäkologie, Leipzig

March 20, 1920, 44, No. 12

Blood Transfusion. E. Bumm.—p. 286.

Effect on Lactation of Injection of Own Milk in Puerperas. F. Kirstein.—p. 292.

March 27, 1920, 44, No. 13

*Exact Localization of the Focus of Infection in Roentgen Treatment of Carcinoma of the Uterus. H. Borell.—p. 313.

Treatment of Rectal Ulcers After Mesothorium Raying of Cancer of the Uterus. W. Koldc.—p. 319.

Blood Transfusion in Obstetric Cases. P. Esch.—p. 321.

Protection for Hereditary Syphilitics. M. Schwab.—p. 323.

Exact Localization of the Center of the Cancer in Roentgen Treatment.—Borell states that most roentgenologists (himself included) are not in possession of all the special instruments for determining the exact distance and localization of the focus from the surface of the body which it is so necessary to know in order to decide what dosage to use and in order to adjust the tube so that the central rays will fall on the center of the focus of infection. These exceedingly important points do not seem to be given by all the careful attention that they deserve. He describes a method that is available to all and which he has found very helpful in the absence of the more delicate measuring instruments, such as the iontoquantimeter, etc. It is adapted from the principle of roentgenologic localization of foreign bodies at any depth. A roentgenogram is made of the patient in a position which is exactly noted by a definite system that is described in detail, and then the tube is moved 6.5 cm. horizontally to one side, and another exposure is made on the same plate. This double exposure furnishes the basis for the localization of the foreign body, or in the present instance, of the center of the cancer, by two homologous points in the foreign body shadows. By means of Fürstenau's bathometer, which is provided with three different scales, the vertical distance of the foreign body, or of the site of the infection, is then quickly determined. Borell has been using the method for several months, and states that he has noted unusually good results in the regression of carcinomas by reason of the more exact technic that this method made possible.

Zentralblatt für innere Medizin, Leipzig

March 20, 1920, 41, No. 12

Epidemic Encephalitis. R. Jaksch.—p. 210.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 14, 1920, 1, No. 7

*Anomalies in Head and Neck of Femur. J. H. Zaaier.—p. 533.

*Pulse and Respiration Reactions to Emotions and Mental Processes. J. Bramson.—p. 547. Conc'n in No. 8, p. 614.

Systematized Public Health Service for Small Cities. Muskens.—p. 562.

*Radiotherapy for Mammary Cancer. W. H. Jolles.—p. 567.

Anomalies in Head and Neck of Femur.—Zaaier refers to the dystrophy of the head or neck of the femur in the young such as has been described by Legg, Calvé and Perthes. It occurs usually between 5 and 10, with an extreme range of $3\frac{1}{2}$ to 12. Before the publications of the above writers (1910) such cases would have been labeled tuberculous coxitis and treated accordingly. This mistake is still made, Zaaier says, by those not familiar with the literature of the last ten years on this osteodystrophy of the hip joint. If there is pain, the joint must be relieved from weight-bearing, with correction of excessive adduction if required, but otherwise the child can be left unmolested. The final outcome may be perfect functioning or a condition like that with severe deforming arthritis. Usually, however, the final condition is between these extremes, with very little disturbances. The head may

assume a valgus position, with the neck in a varus position. It is important to keep the child under supervision and correct in time any tendency to excessive varus deformity.

In 1914 a compilation of fifty-five such cases was published, all but eleven in boys, and in 66 per cent. of the cases there was a history of trauma of the hip joint, and this was probable in all. The injury at the junction of the epiphysis had evidently interfered with the nutrition of the head and neck. Zaaier reports further the case of a girl of 12 who had tripped and fallen, and the neck and head had become entirely detached from the shaft of the left femur, complete epiphysiolysis. The dislocation was corrected and the parts healed in place in a plaster cast. About a year and a half later, a similar epiphysiolysis occurred on the other side. This healed likewise in a cast and, except for slight stiffness, the gait is now normal. Köhler has also published a case of bilateral femur-epiphysiolysis; it occurred while jumping rope. With the Osgood-Schlatter disease of the tuberosity of the tibia, these three form a group in which there may be occasionally pain but there is no inflammation, and the clinical manifestations are insignificant in comparison to the often gross anatomic lesions. The Osgood-Schlatter epiphysitis of the tibia occurs at 14 or 15, and juvenile epiphysiolysis from 14 to 18. He explains how the growth at these ages predisposes to these anomalies. The question of complete bed rest should be considered; it might ward off further deformity if applied during the first phase of the Perthes' disease, and it is certainly beneficial in the Osgood-Schlatter epiphysitis of the tibia. But it is a difficult matter to enforce for children who feel perfectly well and have no pain. With actual fracture and dislocation at the epiphyseal line, more or less strict bed rest for several months has to be enforced in some cases.

Influence of Mental Processes on Pulse and Respiration.—Summarized on page 1431.

Radiotherapy of Mammary Cancer.—Jolles applied both the roentgen and radium rays in the inoperable case described, and reports it as a clinical cure under radiotherapy for nearly three years to date.

April 17, 1920, 1, No. 16

*Quantitative Technic for Sachs-Georgi Test. S. T. Bok.—p. 1328.

Ultimate Outcome After Tonsillectomy. H. Burger.—p. 1339.

*Acetone in Spinal Fluid from Standpoint of Functions of the Choroid Plexus. J. Koopman.—p. 1346.

Present Status of Vitamin Question. B. M. van Driel.—p. 1350.

Quantitative Technic for Precipitation Test for Syphilis.—Bok explains that the Sachs-Georgi reaction is like the first phase of the Wassermann reaction only much more intense. This precipitation of colloids is merely a chemical process, and can thus be studied and afford a deeper insight into the nature of syphilis than the tests which superpose two biologic processes. He describes a modification of the technic which allows quantitative classification of the findings, saying that the original qualitative technic is absolutely unreliable. The nonspecific reactions which occur only with 0.1 or 0.2 can be disregarded; with syphilis the index is higher than this. The test is more sensitive than the Wassermann and is simpler and takes less time. A normal beef heart provides a sensitive reagent for the test, and the cerebrospinal fluid is used undiluted in a set of five test tubes.

Acetone in the Spinal Fluid.—Koopman reports that 10 or 15 c.c. of acetone injected subcutaneously or by the vein did not pass into the cerebrospinal fluid, while inhaled chloroform was constantly found in it. His tests were made on six rabbits. In a fatal case of hemorrhage in the suprarenal, he found 12 mg. of acetone per liter in the spinal fluid, and occasionally in epileptics, he detected acetone in the spinal fluid. The intrameningeal pressure of the fluid was always abnormally high in the cases of diabetic coma he has examined. With severe acidosis, but no coma, he has never found the spinal fluid normal when the pressure was high, but in three cases he witnessed the prompt rise in the pressure when the fluid contained acetone and sometimes diacetic acid, and the pressure was normal when first examined. This suggests that the acetone irritates the choroid plexus and whips it up to secrete more of the cerebrospinal fluid. The same

may occur with urea, chlorids and albumin, and this has suggested the question whether the choroid plexus functioning may not be compared to that of the kidney, and whether it may not function vicariously for the kidneys to a certain extent in some conditions. He adds that this theoretical assumption justifies tests of the permeability of the choroid plexus along the lines of the functional kidney tests, and also anatomic study of the choroid plexus in cases of death from uremia or diabetic coma.

Hospitalstidende, Copenhagen

Feb. 25, 1920, 63, No. 8

*Is the Lasègue Symptom from the Nerves or the Muscles? J. Helweg. —p. 113. Begun in No. 7, p. 97.

The Lasègue Sign in Sciatica.—Helweg presents an array of arguments to prove that the pain with the Lasègue sign is from the muscles, not from the nerves. He insists that the sciatic nerve is not responsible for the pain experienced when the extended leg is lifted passively from the plane of the bed, the knee still extended, and declares that he does not know of a single instance on record of lesions having been found in the sciatic nerve of persons who had suffered from sciatica during life. He also recalls that the sciatic nerve is accessible to direct pressure only in the popliteal space, where the popliteal nerves can be palpated. In his examination of 300 patients with sciatica, he never found the popliteal nerves more sensitive to pressure on the side of the sciatica than on the sound side. Tenderness along the course of the sciatic nerve may be due to the superposed muscles, but there is no evidence to date that it is due to the sciatic nerve itself.

March 3, 1920, 63, No. 9

*General Arc Light Treatment of Laryngeal Tuberculosis. N. R. Blegvad.—p. 129. Begun in No. 6, p. 81.

Phototherapy of Laryngeal Tuberculosis.—Blegvad here describes his success in 52 cases of laryngeal tuberculosis in which treatment was with general exposures to the carbon arc light. Each case is reported in detail, with illustration of the findings before and after in a number. The patient reclines, undressed, under the light from four powerful (20 amperes) arc lights, four patients at a time sharing the light bath. From fifteen minutes at first, the exposures are lengthened in a week to an hour and were never given longer than this. Among the 74 patients thus treated, the laryngeal tuberculosis healed completely in 17. In 16 the tuberculous process continued its course unaffected. Most of the patients had concomitant pulmonary tuberculosis, and in an advanced stage in some. The ulcerative processes in the larynx promptly subsided under the phototherapy, sometimes supplemented with local measures, especially the galvanocautery applied deep in the lesion, according to Grünwald's method. The course of treatment lasted from two to four, six or more months; some of the patients took two courses with several months' interval.

Hygiea, Stockholm

March 31, 1920, 82, No. 3

Parenteral Injections of Milk in Treatment of Infectious Diseases. I. Bratt.—p. 177.

Norsk Magazin for Lægevidenskaben, Christiania

April, 1920, 81, No. 4

*Volvulus of Sigmoid Flexure. R. Ingebrigtsen.—p. 329.

*Retrograde Incarceration of Inguinal Hernia. C. Mamen.—p. 340.

*Active Movements in Treatment of Purulent Arthritis. O. Usland. p. 358.

*Case of Vagitus Uterinus. K. Gjersøe.—p. 367.

Strychnin to Ward Off Collapse with General Anesthesia and Acute Infectious Disease. F. Frick.—p. 369.

*Diabetes and Influenza. K. Motzfeldt.—p. 372.

*Methyl Alcohol Poisoning and Blindness. J. F. Harboe.—p. 379.

Volvulus of Sigmoid Flexure.—Summarized May 1, 1920, p. 1287, when published elsewhere.

Retrograde Incarceration of Inguinal Hernia.—Mamen compares a case which he reports in detail with the 62 cases of Pólya's international compilation; the ages ranged from 7 to 76. The 2 cases in which no operation was attempted

terminated fatally the third and fourth days. The intestine in the hernia forms a W, the center loop usually projecting back into the abdominal cavity. The intestine was considered reducible in 31 of the cases, but 4 in this group died. In 3 of the cases there were three loops of intestine involved. The hernia in these cases is usually very large and of long standing. In some of the cases the abdominal wall protruded above the hernia, and a palpable tender tumor was evident in some, as in Mamen's own case. If more than one loop is found in a hernia, further investigation is imperative.

Treatment of Joint Lesions.—Usland has been converted to Willem's method of early active exercise of the suppurating joint by his success in the case of a boy of 10 with a purulent process in the knee which had been cut by a fall on a broken bottle. The immobilizing bandage and the catgut sutures were removed on account of the streptococcus infectious process, nine days after the accident, and active movements of the knee were made every hour. The temperature dropped at once with the active movements. The boy was able to flex his knee to 90 degrees without pain by the second day, and to 180 degrees the sixth day, and was up and about in less than two months. By the end of the two months the skin had healed completely and the knee was so flexible that the boy could touch his nates with his heel. The ideal drainage of the joint under the influence of the active movements seems to be the main element in the favorable outcome, as also the remarkable absence of pain in comparison to the pain in an immobilized joint.

Vagitus Uterinus.—Gjersøe reports that during forcible delivery of a primipara, when the hand was introduced into the uterus a cry was heard from the interior of the uterus, clearly audible to the nurse and the two assistants, and it was repeated several times in the course of ten minutes. Extraction finally succeeded, with forceps, and mother and child are doing well. Fully twenty minutes elapsed between the first vagitus uterinus and the extraction, but the child was not especially asphyxiated and no attempt at resuscitation was required, the child screaming at once. The entering hand had evidently introduced air into the uterus. The cry testifies that a child can be born with air in its lungs, but this can scarcely occur without artificial measures to aid delivery.

Diabetes and Influenza.—Motzfeldt remarks that Joslin in his compilation of 1,000 cases of diabetes was not able to trace it to an infectious disease in more than 36 cases. During the influenza epidemic of the nineties, several reported instances of diabetes following influenza, but in the recent epidemic he knows of only 2 published cases of the kind, and in these it was merely the exacerbation of latent diabetes. He here relates 4 cases in which the first symptoms developed directly after an attack of influenza, and in one of the cases, there was pain in the tender pancreas. The patients were 14, 15, 20 and 35 years of age, and the diabetes was mild; reexamination from ten to eighteen months later showed tolerance for 150, 300 or 500 gm. bread, and in some, alimentary glycosuria.

Methyl Alcohol Intoxication and Blindness.—Harboe reports a case in which the man was under observation for a week before the cause of the disturbances was discovered, the man denying drinking liquor. The bottle from which he had imbibed was finally found and still contained some of the "spirit" which proved to be pure methyl alcohol. He could count fingers at half a meter with the right eye and with the left detect screening of the light at the same distance. The visual field was much restricted. Nine charts of the fields are reproduced showing the gradual improvement, but by the end of four months there was still some paresis of accommodation. There were no signs of the usual retrobulbar neuritis at first, but some atrophy of the optic nerve finally became evident. Treatment is usually with lavage of the stomach and enemas with measures to induce diaphoresis. In conclusion, Harboe cites the literature on poisoning by wood alcohol, and mentions Kafka's report in 1919 of eleven cases of retrobulbar neuritis in which exclusion of all other causes seemed to point to this.

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OFFICIAL METHODS OF CONTROL OF REMEDIAL AGENTS FOR HUMAN USE *

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Control of remedial agents by the government rests on the interstate commerce clause of the constitution, under which the Food and Drugs Act is enforced by the Bureau of Chemistry of the Department of Agriculture, and the law governing the sale of serums, viruses, toxins and analogous products which is enforced by the Public Health Service of the Treasury Department. Control is also exercised over all drugs, serums, etc., that are imported.

This preliminary statement is made to clarify the situation with respect to some notorious frauds, which well-meaning persons have rightly felt ought to be suppressed but which on further investigation were found not to be the subject of interstate traffic. The suppression of these logically rests with local authorities, state or municipal.

THE FOOD AND DRUGS ACT

With respect to domestic preparations, the Food and Drugs Act, in its bearing on remedial agents, is chiefly a measure designed to secure truthful names and statements. This control is necessarily divided into that which is intended to apply to preparations designed primarily for the use of the laity direct, and that which is applicable to medicines ordinarily prescribed by physicians. I need not tell this section that there is much overlapping of these groups.

This law is designed to secure truthful names and truthful statements; but if one stops to consider what that means, one will see that in doing this the federal Food and Drugs Act insures to the purchaser, physician or layman, an honest product. It means that when the druggist orders from the wholesale dealer a fluidextract, this law tends to insure that he will get the United States Pharmacopeia preparation. If a bottle of tablets is labeled "Aspirin, 5 grains," this law provides punishment for the shipper of the package in interstate commerce if the tablets do not contain 5 grains of acetylsalicylic acid. As an example, last year many shipments of alleged castor oil capsules, although labeled to be castor oil, contained from 50 to 70 per cent. of cottonseed oil, and were made the

subject of official action. The federal Food and Drugs Act protects and makes respected the confidence that the patient naturally gives to his physician and to his druggist.

In connection with the enforcement of this law, the courts generally take a broad view of the intent of the act, and in spite of the delays incident to any legal procedure, eventually it is usually possible to secure conviction. Even if the actual wording of an advertisement is cleverly presented and possibly literally truthful, if the impression conveyed to the purchaser is not one that is justified by the composition of the preparation, the law may be invoked.

In the case of "patent medicines," the law requires that the label or package shall not contain any statements of therapeutic or curative effect that are false and fraudulent. The use of the words "cure" or "remedy" is not forbidden; but they must be used only for medicines that actually are cures or remedies for the conditions named on the label. The placing on the label of the names of diseases is taken to imply that the medicine contained in the package is in itself a treatment for the diseases or conditions named.

The requirements with respect to labeling have resulted in the use of the words "cure" and "remedy" becoming comparatively rare, and such expressions as "will often relieve" "will frequently tend to overcome," "will aid nature to restore," "may sometimes be used with benefit," "some cases will yield to the treatment," and similar expressions, are becoming popular. Obviously, a purchaser who wishes to use a proprietary medicine, and uses it in the face of no stronger assertions than these, is within his rights in following the dictates of his own judgment. In this connection, it is remarkable how vague and noncommittal advertisements may be in medical journals and yet succeed in impressing medical men. Not long ago there appeared a rather widely circulated advertisement of a biologic product, which, when carefully read, made no definite statement or claim beyond the one that the preparation "is indicated" in certain diseases, yet physicians interested in truthful advertising were generally inclined to consider that the advertisement was unwarranted and unreasonably optimistic. When we consider how loosely the word "indicated" is used in connection with medicinal preparations, we are scarcely in position to take exception to such statements as this.

An officer of the Public Health Service, detailed to the Bureau of Chemistry at the request of the Secretary of Agriculture, and assisted by two other officers from the Public Health Service, has charge of the administration of the drug side of the Food and Drugs Act, except for the matter of raw or crude drugs.

* Chairman's address, read before the Section on Pharmacology and Therapeutics at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

MISLEADING STATEMENTS IN TEXTBOOKS

It may come as something of a surprise to the members of the section to learn that perhaps the most effective bar to the control of proprietary medicines is the existence in textbooks of therapeutics and of medicine of loose and even misleading statements as to the value of remedies. It is when the manufacturer seeks to justify the placing of names of diseases on his label that we are confronted with misleading quotations from textbooks.

The searching of medical literature for quotations to support claims of proprietary remedies has become something of a specialty, and attorneys tell me that it is possible to secure quotations from highly respectable authorities referring to almost any drug that is put into a proprietary remedy. I recently appeared as a witness opposing the claims of a proprietary remedy in which oil of eucalyptus was the agent asserted to be of value in the treatment of tuberculosis of the lungs and other pulmonary diseases, and, quite in accordance with expectations, the attorneys for the manufacturers of the preparation were able to quote statements from a number of reputable textbooks on therapeutics and materia medica which went a long way toward justifying the contention that the advertising was based on substantial medical evidence.

CONTROL OVER DRUGS AND BIOLOGIC PREPARATIONS

With respect to agents called drugs in the ordinary sense and designed primarily for use by physicians, the rulings under the Food and Drugs Act have been that the government should not interfere with the privilege of a physician to use any agent he sees fit to employ, differing in this respect from the control exercised over biologic products.

With respect to the control over "serums, viruses, toxins and analogous products," to quote the wording of the law of July 1, 1902, the situation is somewhat different. The wording of the law clearly indicates that it was the intention of Congress to restrict the use of preparations coming under this law to such as had therapeutic or prophylactic activity; in other words, it was intended to prevent the practice of deception, even on the physician, as well as to guarantee safety. At first sight it might seem that the administrative officer's functions were reasonably clear and simple; but really we find that the determination of therapeutic or prophylactic value is a matter of much difficulty frequently—at times, indeed, it is impossible.

Perhaps an example or two will clarify this. A few years ago there was a rather general acceptance among bacteriologists of a small anaerobic gram-positive organism as the cause of typhus fever, and soon after the apparent demonstration of the etiologic relation of this organism to typhus an application was filed for a license for antityphus vaccine made from the organism in question. No evidence was presented to prove the worth of the vaccine, but it was insisted by its proponents that it must be of value, being made from what was conceived to be the cause of typhus fever. It was felt that the importance of the subject demanded an attempt to ascertain the facts in an experimental way, before authorizing the use of the vaccine. Without going into the details of experiments that took many months to complete, it was conclusively shown that the vaccine was quite without the slightest effect in the prevention of experimental typhus under rigidly controlled conditions, and on this evidence a license was denied.

Another class of biologic preparations, for which licenses are constantly being sought, are alleged remedies for tuberculosis; here again the attitude has been that evidence of usefulness satisfactory to an impartial investigator must be secured before a license will be recommended. Thus far, in each case in which tests have been made, it has been found that the alleged tuberculosis remedy has been without value, and licenses were therefore refused.

When it is possible to secure experimental evidence within a reasonable time, this is insisted on. The most difficult cases, however, are those in which it is impossible to secure evidence from laboratory experiments. Let us take, for example, the respiratory infections, particularly the rather ill-defined group including "grip," "colds" and "influenza." It is not possible to submit the bacterial vaccines that are claimed to be of therapeutic or prophylactic value to the crucial tests of controlled laboratory experiments. To secure the data by controlled clinical experiments, save in most exceptional cases, is impossible. What shall the administrative officer do? He may feel that these vaccines are worthless, but he cannot prove it, and, on the contrary, he is confronted by a mass of uncontrolled clinical data which indicate the usefulness of the agent. As a result, in order to avoid the possibility of doing harm by depriving people of an agent which it is barely possible may be of value, he recommends the granting of a license, though he may be reasonably certain that the preparation is not of value, though probably harmless.

It is inevitable that the marks on a package indicating that a preparation is made under government license will be construed by some as a guarantee of efficiency. To obviate this as far as possible, it is required that a statement to the effect that there is "No U. S. Standard of Potency" shall appear on packages of products that are without potency standards. I am glad to say that potency standards are provided for nearly all really useful products, the conspicuous exception being smallpox vaccine.

It is a pleasure to record here the cooperation and the ready acquiescence to administrative decisions on the part of the great majority of manufacturers of serums and similar products. They have withdrawn preparations which we have considered, but could not prove, to be worthless, and have refrained from pressing applications for license for preparations that fell into the same class.

There are certain biologic preparations for which tests and standards are not sufficiently accurate to enable different workers always to get approximately identical results. The best example of this is anti-pneumococcic serum. In the cases of this, of anti-meningococcic serum and of one or two other preparations, the manufacturer is required to make tests that are prescribed, and, if the preparation proves satisfactory, to send samples of the serum together with a copy of the record of his tests to the Hygienic Laboratory, where the tests are repeated and the preparations are finally passed for sale, or rejected, on the basis of the official tests.

The same method, i. e., the testing of each batch of the product, is applied to arsphenamin and neoarsphenamin, which have been held by the law officers of the government to come under the provisions of the same law that is applicable to serums, viruses, toxins and analogous products.

The testing of preparations in this manner naturally throws a heavy burden of routine work on the controlling laboratory; but every proposal to discontinue this form of safeguarding of preparations is met by objections from so many sources that I suspect we shall have to consider it a fixed part of the routine work of the laboratory charged with the supervision of these products. This has the great disadvantage of taking time and effort from purely research work. Of course, there should be ample resources to carry on the essential routine without curtailing research features; but funds are inadequate to permit this.

The regulations at present require the proper descriptive designations of the product in addition to the trade name. Thus, tubercle vaccine must be marked "Bacterial Vaccine Made from Tubercle Bacillus," and influenza prophylactic must be marked "Bacterial Vaccine Made from the Influenza Bacillus" and such other organisms as may be present in the product.

Within the past year the wide latitude heretofore allowed manufacturers in the dating of preparations with respect to the duration of potency has been replaced by fixed maximum dating requirements.

It is a pleasure to state that the United States is far in advance of older countries in respect to the control of medicinal agents. I well recall the amazement with which a distinguished English physician learned that we would not recommend license, for example, for antipoliomyelitis serum, anti-influenza serum, and various cures for tuberculosis. England is practically without restrictions, and, as the distinguished physician remarked, "American law is the only protection that England has against useless or fraudulent preparations of American origin," the basis of this being the fact that our law applies to materials for export as well as to those for domestic consumption.

There is a very marked difference between the methods employed by the two arms of the government concerned in drug control. Under the Food and Drugs Act, examinations are made of products found in interstate commerce; and if they fail to comply with the required standards or are falsely labeled, appropriate legal action is taken, either by prosecution of the shipper or by the seizure of the shipment. On the other hand, under the law controlling the serums, viruses, vaccines, etc., the aim is to see that no impure or worthless product shall be allowed to enter interstate commerce. This aim is accomplished by a system of licensing manufacturers for various products. No license is granted to any firm until the licensing authority is satisfied that the personnel and equipment of the firm are both qualitatively and quantitatively sufficient to give all reasonable assurance that the products for which license is sought shall be satisfactory in regard to purity and potency.

In addition to the assurance afforded by the licensing system, there is supervision of finished products through the procuring of samples in the open market and the testing of these.

In addition to the activities that have been described, which cover the major fields of federal drug control, we have the prevention of exploitation of obvious frauds through the mails, which is the function of the Post Office Department, and the supervision over liquors and narcotic drugs, which is exercised by the Internal Revenue Bureau of the Treasury Department; but I need not discuss these at this time.

SIGNIFICANCE OF ETIOLOGIC FACTORS IN THE TREATMENT OF PEPTIC ULCER *

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My aim in this report is to stimulate serious scrutiny of methods in vogue in the management of peptic ulcer. That such inquiry is needed is proved by recalling that, although much useful knowledge has accrued to physicians from recent clinical, operative, chemical, experimental and pathologic studies, yet, apart from various surgical procedures, little essential has been contributed to the actual, practical treatment of the affection since the time of Celsus.¹ In various languages, from the period of that clinical patriarch, have similar directions been given for the cure of *ulcus ventriculi*: "Remove or neutralize the acid which causes (sic) the ulcer, and nature will do the remainder."

It would seem to be a painful commentary on the acuteness of the modern physician to say that he has learned nothing from the clinical observations (and mistakes) of such assiduous workers as Littré (1704), Baillie (1793), Abercrombie (1832), Cruveilhier (1835), Rokitansky (1839), Günzburg (1852), Virchow (1853), Mueller² (from Mueller, the empiric, clinical term "corrosive action" of gastric juice has descended), Panum (1862), Pavy,³ Axel Key,⁴ Ziemssen,⁵ Schleip,⁶ Leube,⁷ Riegel,⁸ Wilson Fox,⁹ von Noorden (1890), Stockton (1893), Fenwick (1893), Koch,¹⁰ Einhorn,¹¹ Leube and Mikulicz (1897), Hemmeter (1902), Ewald,¹² Dieulafoy (1902), Sellards,¹³ S. Möller,¹⁴ Westphal and Katsch,¹⁵ Rosenow,¹⁶ Mayo,¹⁷ Bolton,¹⁸ Spencer, Meyer, Rehfuß and Hawk,¹⁹ Cannon,²⁰ Carlson,²¹ and others.

As a possible excuse, it may be adduced that the older clinicians have neglected to put into practice the

* Chairman's address, read before the Section on Gastro-Enterology and Proctology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Celsus, A. C.: *De Medicina Lib. IV, Cap. 5*, "Adhibendi lenes et glutinosi sed citra satietatem; omnia acrida atque acida removendi; vino utendum, sed neque proefrigido neque nimis calido."

2. Mueller, L.: *Das corrosive Geschwür in Magen und Darmkanal*, Erlangen, 1860.

3. Pavy: *Guy's Hosp. Rep. Series 3*, 13: 494, 1877.

4. Key, Axel: "Om det corrosiva magsärets, etc., Hygiea, cited in Gurlt-Virchow's Jahresbericht, 1871.

5. Ziemssen, H.: *Ueber die Behandlung des Magengeschwürs*, Volkmann's klinische Vorträge, No. 15, 1871.

6. Schleip, P.: *Zur Behandlung mit der Magenpumpe*, Arch. f. klin. Med. 13: 453, 1874.

7. Leube, H., in *Von Ziemssen's Handbuch der speziellen Pathologie und Therapie*, 7: 192, 1876.

8. Riegel, F.: *Ztschr. f. klin. Med.* 2: 12, 1886.

9. Fox, Wilson: *The Diseases of the Stomach*, London, 1872.

10. Koch, R.: *Ueber das Carcinoma Ventriculi ex Ulcere*, Petersburg med. Wehnschr. 43: 160, 1893.

11. Einhorn, Max: *Ein klinischer Beitrag zur Kenntniss und Behandlung der Erosionen des Magens*, Berl. klin. Wehnschr. 20: 21, 1895.

12. Ewald, C. A.: *Diseases of the Stomach*, New York, D. Appleton & Co., 1902.

13. Sellards, A. W.: *Ulceration of the Stomach and Necrosis of Salivary Glands Resulting from Experimental Injection of Bile Salts*, Arch. Int. Med. 4: 502 (Nov.) 1909.

14. Möller, S.: *Die Pathogenese des Ulcus Ventriculi mit besonderer Berücksichtigung der neueren experimentellen Ergebnisse*, Ergebn. d. inn. Med. u. Kinderh. 7: 520, 1911.

15. Westphal, K., and Katsch, G.: *Das neurotische Ulcus Duodeni*, Mitt. a. d. Grenzgeb. d. Med. u. Chir. 26: 391, 1913.

16. Rosenow, E. C.: *The Production of Ulcer of the Stomach by Injection of Streptococci*, J. A. M. A. 61: 1947 (Nov. 29) 1913.

17. Mayo, W. J.: *Gastric Ulcer*, J. A. M. A. 65: 1069 (Sept. 25) 1915.

18. Bolton, C.: *Ulcer of the Stomach*, London, 1913.

19. Spencer, W. H.; Meyer, G. P.; Rehfuß, M. E., and Hawk, P. B.: *Am. J. Physiol.* 39: 459 (Feb. 16) 1916.

20. Cannon, W.: *The Mechanical Factors of Digestion*, London, 1911.

21. Carlson, A. J.: *The Control of Hunger in Health and Disease*, Chicago, University of Chicago Press, 1916.

facts developed respecting gastric physiology during the past decade, and that the knowledge accumulated by the modern group of clinical-experimental workers has not yet been "driven home" or become sufficiently available to general practitioners or the laity. Further, the healthy skepticism respecting experimental and clinical data, common to properly trained physicians, has prevented such physicians from glibly and boldly sending forth unqualified statements regarding actual causes of peptic ulcer and definite numbers of cases in which cure has been effected. The modern clinician holds a broader etiologic view of peptic ulcer than it is possible to inherit from study of ancient writings. He demands definite clinical proof that peptic ulcer exists before he institutes "ulcer regimen," and, should such regimen be carried out, he is properly cautious in his interpretation of his "cures." To him, relief of symptoms does not mean "cure," as it is common knowledge that of uncomplicated peptic ulcers (i. e., nonhemorrhagic, nonperforating, nondeforming or stenosing), 84 per cent. exhibit that peculiar, characteristic "periodicity" which, to the careless or the ignorant, indicates "cure." Along with Mayo, Crispin and others, I have frequently pointed out that without so-called "ulcer symptoms," and in stomachs whose secretion is acid-pepsin free, peptic ulcers are often found to be histologically unhealed, and may be the sites of most serious complications.

Until a few years ago, the treatment of peptic ulcer, particularly by nonsurgical procedures, was based mainly on the conception that peptic ulcers are caused, or if they have already formed, are aggravated, by the so-called "corrosive action" of acid gastric juice. This conception of the etiology of peptic ulcer has been so persistently emphasized by clinicians that it has obtained a widespread acceptance among practitioners in general. It thus follows that the medical mind almost universally, and frequently automatically, connects peptic ulcer with "corrosion," particularly "acid corrosion." With such conception of the origin of peptic ulcer, the therapeutic corollary that "acid corrosion, being the cause of peptic ulcer, indicates simply counteraction of acidity by alkali; prevention of corrosion follows and, hence, ulcer cure results" has required but mild cerebral activity in order to admit of its acceptance as a regimen of treatment in ulcer patients. With so simple an explanation of the etiology of a widely prevalent and grave ailment, it is not to be wondered, therefore, that among general practitioners (and, indeed, among clinicians who are more favorably located with respect to scientific investigation) the assumption that acid gastric juice is necessary for, and vital in, the production of peptic ulcer; that commonly in ulcer, acid is above "normal" titration values, and neutralization of this "hyper-acidity" leads to cure of ulcer, has had a vogue not warranted by experimental, laboratory or clinical facts.

It is not necessary to point out to an audience of this character and experience that experimental investigations have failed almost uniformly in attempts at producing peptic ulcer by the introduction of acid of high titration values into the stomach. These observations have been made by investigators of such standing as Pawlow, Carlson, Ivy, Smith and others. If the gastric mucosa has been previously undamaged, and if the stomach is bile free, there may be introduced into the viscus free hydrochloric acid, other

inorganic acids or organic acids of a strength greater than ten times that of the acid titration values found in gastric ulcer stomachs or, in stomachs of persons free from gastric complaint or a pathologic condition, without peptic ulcer resulting. It has also been emphasized by Carlson that in persons who are affected with proved gastric ulcers, hydrochloric acid of five times as high titration value as that of the so-called "normal" gastric juice may be introduced into the stomach without discomfort clinically, without retardation in healing of the ulcer, or without the production of new ulcers. It has also been shown by numerous clinicians who have studied ulcer patients during the period of quiescence of their "ulcer symptoms" that, in such cases, the acid values of the gastric juice are frequently much higher than are those in the so-called "normal" gastric juice, or are greater than the values reported when the patients were experiencing dyspepsia, clinically. Such observations respecting increases in gastric juice acid values are especially liable to be recorded in the cases of those ulcer patients who have been treated by the continuous, "rule of thumb" and century old "alkalization" regimen, in which event, provided the careless and uncontrolled exhibition of great amounts of alkaline drugs has not caused complete mucoid and permanent degeneration of the acid-secreting cells of the stomach mucosa, the end-result is a delayed, and commonly increased, production of acid gastric juice. Without any painstaking research, clinical reports are available in which peptic ulcers have appeared and have progressed steadily to the point of exhausting hemorrhage or fatal perforation, while gastric juice acidity has been constantly below the so-called "normal," or even has been entirely absent. It is difficult to surmise how, in this type of patient, peptic ulcer could have been caused or its progress could have been accelerated as a consequence of so-called "corrosive action" of gastric juice.

From the histologic standpoint, so-called "corrosive effects" are most readily shown in that type of extensive, chronic peptic ulcer which is undergoing "malignant transition." In this class of case, the local changes in the gastric mucosa in every way represent the irritation effects one might theoretically ascribe to "acid corrosion"; and yet the gastric juice from such patients when analyzed quite regularly exhibits low, or an absence of, free hydrochloric acid. In the true peptic ulcer ("round ulcer" of Cruveilhier, not the accidental, self-healing "mucous erosion"), such irritation reactions about the ulcer, as might be expected of "corrosion" (and, indeed, are present when the gastric mucous membrane is traumatized to the point of true corrosion by acids, experimentally), are entirely absent. It has further been proved by an army of investigators, notably Rehfuess and Hawk, that the acid values in individuals gastrically well fluctuate in wider ranges than they do in patients with proved peptic ulcer, and in instances when, theoretically, it is carelessly assumed that the acid caused the ulcer or prevented its healing. It is common clinical knowledge that less than forty-eight hours after surgical or other trauma to the stomach wall (resection of ulcer locally, resection of portion of the stomach, gastro-enterostomy, etc.), acid values of the gastric juice begin to increase; and (with the possible exception of the gastro-enterostomized patient), within six months after extensive, local

gastric traumas, the acid values in the stomach are within or above the "normal" values. However, usually patients do not experience return of their peptic ulcers, establishment of ulcer at the site of surgical trauma or crops of new ulcers, consequent on "acid (or acid-pepsin) corrosion."

Etiologically, with respect to ulcer, it is an important observation that, following operations on the stomach, although the acid and peptic values of the gastric juice are steadily rising, healing and regeneration of the mucous membrane are not interfered with. To those who have had any sort of surgical experience, it is not necessary to mention that, should the patient die from an ailment not connected with the operative field, following extensive gastric resection, it will be seen that union has taken place in all layers of the stomach wall, that a new mucous membrane has formed, and that very slight local evidences of surgical trauma are to be noted. Such healing may occur in so short a time as a few weeks. Thus, it is proved that in man (not a "laboratory animal"), extensive loss of epithelium may be rapidly compensated for by the development of a new mucosa, even though the surgical area being repaired is more or less constantly bathed in that acid gastric juice which, empirically and purely theoretically, is commonly assumed to possess "corrosive" qualities toward injury or partly devitalized gastric epithelium. These observations are of greater value than are data shown by experiments in ulcer production, because not only is one dealing with problems in human physiology and histology, but he has at hand observations of patients who exhibit those constitutional faults that have already permitted demonstrable, local gastric defects.

Knowledge of normal gastric physiology and histology should teach that such rapid and gross gastric repair as cited is not anything remarkable. From shortly after birth, the gastric lining is accustomed to resist injury and to make proper repair in the presence of a secretion rich in free hydrochloric acid and pepsin. Such secretion is the normal habitat of the mucosa of the stomach, just as in the mouth, pharynx and upper esophagus the normal habitat in which epithelium functionates is alkaline. Certainly, it ought not to be expected that when, artificially, the reaction of the secretion in which gastric epithelium has to live and functionate is changed from acid to alkaline, the condition is rendered more favorable to function or to repair after injury. It is a well known fact that, if the secretion of the mouth and the upper esophagus is changed from alkaline to acid, epithelial cells have great difficulty in maintaining proper protection and function—indeed, such change in reaction is not infrequently followed by visible, local evidences of destruction ("pyorrhea," erosions about the teeth and on the tongue, and erosive, bleeding, superficial or deep ulcerations in the pharynx or in the esophagus). When peptic ulcer exists, it is, therefore, a matter of serious question whether the introduction into the stomach of sufficient alkali to neutralize hydrochloric acid is not injurious rather than beneficial; the ulcer apparently heals in spite of excess alkali. The injurious effects of "continuous alkalization" would doubtless be more evident were it not the custom of such clinicians as practice this empiric form of therapy to make frequent gastric lavage a routine phase of their regimen. In this way, much of the excess alkali is washed

from the stomach, with consequent relief to the gastric cells, which have been caused to overfunction in their attempt to neutralize excess alkali and to restore an intragastric habitat normal, chemically. Hamburger²² has shown, however, that the exhibition of alkaline salts, e. g., sodium chlorid, etc., has (provided their concentration is sufficiently high) the power of limiting peptic activity. Hamburger's experiments are worthy of consideration, even though they may be few in number and performed chiefly in vitro. On the "pepsin inhibition" basis, Hamburger partly explains away the significance of so-called "corrosive acid action" with respect to production or aggravation of ulcer. Apparently, he assumes that if pepsin is rendered inert by the exhibition of alkali, then acid-pepsin combination, with supposed consequent "corrosion" or "digestion" of injured gastric mucosa is, in certain circumstances, limited. Hamburger's experiments, however, do not explain why, after surgical or other traumas of the stomach, when acid-peptic values soon become practically normal, repair of extensive damage goes on without interruption, and a normal mucous membrane is formed, or, at least, a mucous membrane results which is capable of protecting the deeper layers of the stomach wall, even though it may not maintain complete preoperative, secretory function.

Clinically, our own laboratory investigations in 2,168 definitely proved and not "clinically surmised" cases of peptic ulcer have revealed these facts: Of this number, fifty-six patients, 2.6 per cent., had gastric contents containing no free hydrochloric acid; 499 patients, 23 per cent., had free hydrochloric acid values below 30; 890 patients, 41 per cent., had free hydrochloric acid values within the normal range (40 to 50, Töpfer scale) and in 723 patients, 33.4 per cent., the free hydrochloric acid values were greater than the so-called "normal." The significance of these figures with respect to acidity in definitely proved ulcers adds further emphasis to the observations of Rehfuess and Hawk. These investigations show that in no form of gastric disease can the acid values be considered as indicating the causative factor of the disease, or that such acid variations are consequent on that disease; that, in health, the range of acid values in gastric juice is wider than is that of any of the values which formerly were supposed to be indicative of, or consequent on, gastric malfunction. Both low and high gastric titration values may be returned irrespective of gastric symptomatology. Even when fractionally estimated, the variations in gastric acidity, in both health and disease, can be regarded as incidents in gastric function. Frequently, they are only of ephemeral significance. Numerous observations made on the same subject, or numerous examinations of patients known to be affected with similar diseases, show widely varying differences in gastric juice acid values. These fluctuations, quite commonly, are irrespective of symptoms and the clinical and histologic course of the disease. Doubtless, they furnish only useful hints respecting the ability of stomachs to accommodate themselves to transient upsets or to abnormal functional demands of long duration.

About ten years ago, I became convinced that any treatment of "peptic ulcer" based on a fluctuating

22. Hamburger, W. W.: The Inactivation of Pepsin by Sodium Chlorid, *Arch. Int. Med.* 16: 356 (Sept.) 1915.

gastric chemistry was (as Leube, Rokitanski, Riegel and others had shown, more than a half century ago) little more than guesswork, was unscientific, was not justified by any known published records and might, in fact, prove harmful to patients. My experience with abundant material has since confirmed my early opinion. Difficult as it sometimes is to discover the precise etiologic factors interplaying in ulcer patients, still, I am convinced that careful search for such factors will commonly disclose information which is useful and of great service in the establishment of an intelligent therapeutic regimen. In other words, search for etiologic factors in peptic ulcer indicates careful analysis of the individual patient, and signifies that the major part of the treatment is to be directed toward the individual patient who has the ulcer, with consequently a minor degree of treatment to the ulcer, which forms a small part of the patient's entire make-up. Such a regimen of treatment is not often a rosy therapeutic pathway. It means that masses of people cannot be moved about and worked on by inexperienced interns, nurses or assistants; it means that routine prescriptions for pills and powders are useless, and it means that so-called

ETIOLOGIC-THERAPEUTIC CLASSIFICATION OF FIVE
HUNDRED AND TWENTY-TWO CASES OF
PROVED GASTRIC ULCER

Group	No. of Cases	Per Cent.
1. Infectious (chronic and acute).....	173	33.1
2. Arteriosclerotic (with vascular hypertension, 56 cases; without vascular hypertension, 21 cases)...	77	14.7
3. Visceral hypertonia (vagus or splanchnic hyperfunction).....	68	13.0
4. Chronic anemia (so-called "chlorotic").....	61	11.3
5. Syphilitic.....	41	7.8
6. Visceral hypotonia (vagus or splanchnic hypofunction).....	27	5.2
7. Postoperative.....	27	5.2
8. Industrial intoxication (occupational poisonings)...	22	4.2
9. Metabolic dysfunction (thyroid, suprarenal, pituitary, etc.).....	18	3.4
10. Traumatic (abdominal injury from blows, falls, etc.; intragastrically, foreign bodies).....	8	1.5

"diets" cannot be dubbed "first week," "second week," etc., ad infinitum, till the patient breaks away from his gastronomic chains, commits an "indiscretion in diet," "relapses," and comes back again to his powders, pump and pap.

ANALYSIS OF FIVE HUNDRED AND TWENTY-TWO CASES

With the purpose of further emphasizing the necessity for considering clinically the significance of etiologic factors in the treatment of peptic ulcer, and with the object of demonstrating the need of strict individualization in any ulcer regimen, I have carefully analyzed 522 gastric ulcers. These ulcers were proved actually to exist by objective data, namely, from surgical, roentgen-ray and pathologic studies. I do not consider it worth your time or my effort to make an inquiry, purporting to be scientific, into any group of ailments diagnosed "peptic ulcer" on only clinical history, physical examinations or testmeal evidence. The unreliability of data of such type is shown by the observations made in our clinic that only 53 per cent. of patients with gastric ailments who come to us with a diagnosis of "ulcer" prove to be affected with that disease when subjected to thorough clinical study. The remaining 47 per cent. of patients were affected with lesions of the gall-bladder or the appendix, simple gastritis, carcinoma,

syphilis, cardiorenal upsets, tuberculosis, alcoholism, occupational intoxications and forms of neurologic hyperfunction, i. e., vagus hypertonia.

The results of our studies enable me to present an ulcer classification based on what I consider valuable facts, etiologically, in ulcer causation, and to offer such grouping as a guide to intelligent, therapeutic management of peptic ulcer. It is granted that my classification is not complete: indeed, its first revision may come from me. However, my grouping carries essential pointings, therapeutically, and it gets away from the ancient, unproved and prevalent conception of peptic ulcer's being a local, gastric disease caused by so-called "acid corrosion." It also emphasizes the fact that gastric ulcer is rarely a disease due primarily to a gastric upset, but that the gastric lesion is only the local, accidental manifestation of a systemic disturbance, initiated by a great variety of agents.

There is not now sufficient time to submit details respecting the data entering into cases making up these groupings; such consideration is reserved for later reports. To the seriously inclined student of peptic ulcer and its clinical management, the classifications which I have given will, I feel sure, prove of value and will furnish significant hints respecting amplification of the individual groups and of the classification as a whole. To such practitioners as have not the opportunity or the inclination for extended inquiry into the therapeutics of gastric ulcer, my remarks and my classification of 522 proved ulcers will, I hope, result in a critical scrutiny of reports respecting the "cure" of ulcer by measures which have as their object the altering of intragastric chemistry only by medicines or diets, or of measures which purpose to alter a constitutional or metabolic fault by surgical removal of ulcer or a great part of the stomach. Local treatment of such gastric anomaly can give promise of permanent success only when coordinated with therapeutic measures tending to restore to normal the systemic disturbance of which the gastric defect is but a part.

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SURGERY OF THE THYROID *

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The most plausible theory of the causation of goiter is that it results from infection. Recently, many observers have believed that the infection is in part autogenous. In this connection much attention has been directed to the focal centers of infection in the adenoid, teeth and tonsils. While no direct pathway of travel for such infection from the throat to the thyroid has been proved, it has been assumed on clinical grounds that some such pathway exists. Many physicians contend, therefore, that thyroid disease may arise in the throat, and be perpetuated from this source. A clinical study of many goiter cases in connection with infection foci of the throat and mouth furnishes abundant evidence in support of this theory.

The intimate relationship between the larynx, trachea and thyroid gland is common anatomic knowledge. In health the gland lies on the upper trachea, often

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

extends over the cricoid and thyroid cartilages, and is closely bound to them by connective tissue. The recurrent laryngeal nerves are closely associated, and the normal blood and nerve supplies have much in common.

In disease of the thyroid this intimacy of the enlarged gland to the upper air tract is usually much increased, resulting in a multiplicity of symptoms, chiefly respiratory disturbances. Thus an aberrant goiter at the root of the tongue or within the trachea causes distressing dyspnea; a circular goiter may constrict the trachea even to a fatal degree; nodular goiters may compress the adjoining air tract sufficiently to cause difficult or dangerous respiration. Large colloidal or cystic goiters result in varying degrees of respiratory obstruction, and by backward extension may interfere with the function of the recurrent laryngeal nerves, with the result of vocal disturbances varying from slight hoarseness to complete aphonia. Great thyroid enlargement also stretches the pretracheal muscles, and ends in their atrophy and final loss of function, which no doubt adds to the loss of vocal power and normal respiration. To the foregoing symptoms other almost innumerable ones may be added, most common among which are asthma, dysphagia, globus hystericus, great apprehension and neurasthenia. Indeed, many cases, especially of non-toxic goiter, produce more symptoms referred to the throat than elsewhere, and nearly all goiter subjects present some symptoms that are referred solely to the throat.

In view of this relationship of laryngology to disease of the thyroid body, and of the fact that the growth of laryngology has been in the direction of cure by surgical methods, the assumption to surgery of the thyroid on the part of the laryngologist may seem most natural, and perhaps may ultimately prove helpful.

ESSENTIAL POINTS IN DIAGNOSIS

Satisfactory results in surgery have always borne, and no doubt will continue more and more to bear, an inseparable relationship to diagnosis. Successful surgery of the thyroid must be bound, especially in certain types of thyroid, with the most accurate diagnosis possible of the actual condition present in the given case.

Modern operative technic, coupled with surgical training and skill, have reduced the mortality of goiter surgery almost to nothing; yet the mere fact that goiter operations may be performed in great numbers with almost no mortality does not necessarily mean that all patients who have been operated on have fully recovered health or have attained a satisfactory degree of improvement, or any improvement at all. Any discussion, therefore, that may lead to a better preoperative knowledge is still desirable.

Plummer classifies goiters into nontoxic, toxic-non-exophthalmic, exophthalmic and malignant. Nontoxic goiters are very plentiful and usually easy of diagnosis, and the relationship of diagnosis to the successful surgery of this type has comparatively slight importance. Many nontoxic goiters are undoubtedly not cases for surgery, especially if moderate in size and symptomless, as is frequently the case. When large colloid or cystic they may continue apparently harmless, although not infrequently pressure symptoms on the trachea and larynx may develop that give great anxiety to both patient and friends. The latter cases

may furnish complex problems of diagnosis, not, to be sure, as to the presence of a goiter, but certainly as to the safety of operating, depending on the amount of damage to the trachea and larynx, and to the circulatory and nervous system.

According to Plummer, already quoted, about 1 per cent. of all goiters at some time become malignant. The essential point to determine in cases of suspected malignancy of the thyroid is whether or not the disease is still confined within the glandular capsule; for if extracapsular thyroid malignancy has already taken place, operation would ultimately, if not immediately, fail to cure. I know of no present plan to determine with certainty the presence of malignancy in its earliest, and therefore the period of its intracapsular confinement.

It is not, however, with the foregoing classes of goiter that the chief concern in diagnosis is felt by the surgeon. Both thyrotoxic and exophthalmic goiters present preoperative problems that have not been solved with entire satisfaction. In the first place, there are undoubtedly plenty of cases that have well marked, exceedingly dangerous and troublesome thyrotoxicosis with no enlargement, or but slight enlargement of the thyroid gland. This fact needs repetition and emphasis. These cases are accompanied by pronounced nervous symptoms, tachycardia and loss of weight, and even to the casual observer the patients seem seriously ill; but since they may not have the one symptom of goiter that we most expect, namely, an enlarged thyroid, the origin of the disease may be, and indeed often is, overlooked. Such cases are sometimes diagnosed hysteria, neurasthenia, heart disease or nervous prostration. The patients are given nervines, tonics, rest, diet or change to seashore or mountain, usually with only temporary relief and most often with complete failure. The surgeon in such cases often needs the help of the thoroughly trained modern diagnostician. Together, a diagnosis will be made. Together, it will be determined whether or not the case is purely medical, wholly surgical, or both medical and surgical; and, if operation is indicated, the choice of time can best be determined.

The classical symptoms of thyrotoxicoses have long been known. It is only recently, however, that attempts have been made more definitely to interpret some of these for the benefit of surgery. For instance, it is an old observation that these patients lose weight. It has been the belief that if the rate of weight loss could be measured with accuracy, the information thus gained would show the severity of the toxic state at any given time, and thus not only be helpful to a diagnosis of the fact that the thyroid is the seat of the disease, but also furnish a reliable guide as to when, and when not, to operate. I refer to the metabolic theory as applied to thyrotoxicoses. When accurately carried out, it is stated that early and borderline cases of toxic thyroid states may be accurately diagnosed, and that indexes of safety and of proper time of operation are thereby furnished with an almost invariable certainty.

The value of metabolic tests is based on the fact, already established, that in all cases of thyrotoxic goiter, body waste is going on to excess, the degree of excess being in proportion to the severity of the toxic state of the patient. That is to say, if the goiter is mild, it will be found that the metabolic rate is low; whereas in severe types, especially during crises, the

metabolic rate may rise to twice the normal. Metabolic measurement becomes, therefore, according to its advocates, of first importance in diagnosis, especially in that class of cases that exhibit well marked symptoms of toxemia, but in which the goiter appears, from every objective method of testing its size, to be but little or not at all enlarged.

In borderline cases, McCaskey also employs the alimentary hyperglycemic test, and believes he has proved it of great value. This test is based on the fact that in normal, fasting patients, 100 gm. of glucose taken shows its peak of glucose in the blood before one hour, whereas in the toxic goitrous cases the crest of the hyperglycemia after an equal ingestion of glucose is not reached under an hour and, according to McCaskey, may continue to rise to the end of the second hour. Laboratory tests, when perfected, as they undoubtedly will be, will simplify the goiter problem, and will add much to operative safety, satisfactory as this at present is, of thyroid surgery.

Surgery of the thyroid assumes that all proposed surgical patients have been tested by every known and useful method of examination; that the type of case is accurately determined, and that the degree of toxicity is ascertained by laboratory methods, or is assumed to be some definite amount, the assumption without laboratory aid being based, of course, on the surgeon's operative experience. It is further assumed that all cases belonging to the purely medical group have been entirely eliminated from surgical consideration. When the patient is thus properly classified and differentiated, the surgeon has before him a much simplified and a much safer problem. His task is then one largely related to the anatomy of the neck and the execution of a modern surgical technic pertaining to a major operation.

IMPORTANT FACTORS IN THYROIDECTOMY

Any description of modern thyroidectomy is unnecessary here. Certain points and principles of the operation necessary to its successful performance will, however, always be proper subjects for discussion. My comparatively small experience leads to the belief that the following points are of greatest importance. One item conducive to success in thyroid surgery is psychic. No other factor helps better to withstand the operation than does full confidence of the patient in the surgeon. Such confidence establishes and maintains a tranquility of the greatly weakened nerve energy and circulatory power that is entirely essential to successful surgery in the severely thyrotoxic.

1. *Selection of Time for Operation.*—When once the definite diagnosis of surgical goiter has been made, the operation should be performed at the earliest period of safety. When is this period? In all nontoxic goiters, unless some other disease is present, which of itself would contraindicate any surgical procedure, the goiter may be removed when the patient is ready and is surgically prepared. In toxic and exophthalmic cases the patient's vitality may have been so wrecked by the toxic state that long preparation is essential before operation may be performed with safety. The time must in these cases depend, therefore, much on repeated physical and laboratory examination and, to some extent at least, on that surgical judgment which large experience alone makes reasonably reliable. Rest, both mental and physical, to overcome the increased metabolism is essential. Rest is often diffi-

cult to secure. Rest in bed at home with the family obligations all about is not always helpful rest. Even in the hospital attempted rest fails in many instances, the patient grows peevish, and the toxic state becomes worse. In such cases if the metabolic rate can be reduced to one-third above normal, and the pulse rate below 120, probably the safest time for operation has arrived. Many of these patients feel that a prolonged period of preparation is of itself injurious to them, and they sometimes appeal for early surgical relief. Under such circumstances, operation, either ligation or thyroidectomy, is, I believe, usually advisable at that time.

2. *The Anesthetic.*—Experienced goiter operators hold different views concerning the best and safest anesthetic for thyroidectomy. In the Kocher clinic, where the number of patients is large, a local anesthetic is advocated and used. The elder Kocher believed this plan safest and was influenced somewhat because he believed that by its use he could best protect the recurrent laryngeal nerve. I have seen him perform many goiter operations under local anesthesia. The patient walked both in and out of the operating room. He was requested to use the voice during that part of the operative procedure when the nerve was approached, in order to inform the operator whether or not the recurrent nerve was injured, or was likely to be injured. Most of the patients whose operations I witnessed complained considerably of pain, especially when the goiter was luxated or dragged on. It has not been proved that the anxiety and pain experienced during this operation under local anesthesia do not cause as great harm to the patient as does the general anesthesia, if not even greater harm.

Crile probably has been the leading advocate of nitrous oxid and oxygen anesthesia. He has had many satisfied followers. When administered by an expert, this form of anesthesia has much to commend it. One operator has said that it is probably not safer than ether, but is certainly saner than ether. The Mayos are prominent among those who use ether almost exclusively. Aside from the unpleasant inhalation of ether at the beginning, and the almost certain nausea during recovery from it, ether is to me the ideal anesthetic in goiter surgery. It seems safest. It predisposes less to venous oozing, and it may be trusted to less experienced hands. One conclusion is evident, namely, that any one of the three methods may be safe and satisfactory, as evidenced by the large number of cases in which it has been used by its chief advocate. Much depends on the experience of the user. One may reasonably assume that the experience and training of the anesthetist counts for more in the safety and wisdom of the one or the other plan, than does the anesthetic itself.

3. *Minimum Loss of Blood.*—A great factor of safety lies in limitation of the loss of blood to the minimum. There is no disagreement among operators on this point, but its importance justifies repeated emphasis. Not much blood can be lost with safety, since the patient already is anemic, and therefore the drain of an amount that would be harmless in other classes of surgery would prove fatal here. Fortunately, with rare exception, limitation to a small loss is possible. With the patient properly prepared, in a modern hospital, with abundant light, proper assistance and adequate instrumentation, the question of loss of blood becomes one largely of surgical mechanics. It

seems not a little strange now that only a few years ago death from hemorrhage, and frequent, severe and dangerous hemorrhages, following thyroid surgery, appear to have been the expectation in all operations for goiter. It is evident why the mortality was then high. The splendid mortality of the present is no doubt largely due to the almost bloodless operation.

4. *Removal of Capsule.*—Argument, so far as I know, is at an end concerning the best and safest plan of conserving the function of the parathyroids and the recurrent laryngeal nerve. Safety to these structures depends on leaving that portion of the posterior glandular capsule which overlies the nerve and the parathyroid bodies. This is represented by the lower two thirds of the posterior portion of the capsule. I am convinced by my own experience that it is entirely possible, in some cases at least, to strip from the posterior capsule the parathyroids and thus remove the entire capsule. This is best done by working from the upper pole downward, and using a piece of gauze to do the stripping, always, of course keeping directly against the smooth, shiny glandular capsule and noting at all times that nothing is left on the capsule. The recurrent laryngeal nerve is by the same procedure insured from injury. I do not advocate the plan of entire capsular removal because the parathyroid bodies are sometimes embedded in the capsule, or even lie completely within the gland, and in such cases would of course be endangered or removed by the removal of the capsule. I simply make the point that I believe it may be safe.

5. *The Question of Ligation.*—When should ligation be done? How often is it necessary? Ligations are indicated only when the actual removal of a necessary amount of the thyroid gland is known to be hazardous. Since this extra hazard occurs in only two classes of goiter, the highly vascular and the severely thyrotoxic, it is evident that ligations are justified only when one of these conditions is present, and in the latter class only in case the metabolic rate is high, great exhaustion is present, tachycardia and arrhythmia marked and, in general, a state of collapse is imminent. In the highly vascular case, ligation greatly limits the amount of hemorrhage if operation is later attempted and often is of itself a sufficient method of cure. Kocher, though not the first to employ ligation in the cure of goiter, was the first to employ the plan extensively, and in properly diagnosed and carefully classified cases. Kocher pointed out the uselessness and even danger in ligations for the cure of cystic and colloidal goiter. In such cases, cutting off the blood supply to an already crippled gland, it is evident, may so lessen the production of thyroxin as to promptly result in myxedema. In milder thyrotoxic cases, while the surgical risk is yet good, ligation is helpful, but cannot be considered the best procedure, since thyroidectomy gives more permanent and curative results. Ligation is undoubtedly a most valuable, though a more or less temporary measure in dealing with the shattered thyrotoxic case, for it may be done when the greater operation of resection would prove fatal. Ligation of both upper poles after the plan of Stamm and Jacobson is rapid and safe, and the results are often astonishingly good. It is a common observation that after proper ligation the pulse rate falls, tachycardia subsides, sleep is induced, appetite improves, and altogether the vitality, which had reached the danger point, is revived. In severe exophthalmic goiter, Plummer estimates

that ligation reduces the metabolic rate about fifteen points in the succeeding eighteen days, which, of course, greatly lessens the hazard of the final thyroidectomy.

Improvement following ligation does not usually continue to the point of final cure. After a varying time the blood and nerve supply to the gland, which was partially cut off by ligation, is more or less restored, and then the former hypertoxic state sets in again. Before this period arrives complete thyroidectomy should be done provided it is reasonably safe.

Many opinions have been expressed as to which thyroid vessels should be ligated. In my few cases I have ligated only the upper poles, the ligation requiring only a few minutes under a local anesthetic, and being painless and shockless. To ligate the lower thyroid vessels is nearly as difficult as the resection of the gland, and hence the complete operation should be chosen rather than inferior ligation. With the improved technic of today, and with proper preparation of the patient for operation, the use of ligation becomes increasingly limited.

6. *Extent of Removal.*—One of the most important questions the surgeon must settle as he proceeds with the thyroid operation is, How much of the diseased glandular stricture should be removed? On this decision either cure or disaster may depend. One writer says that a portion as large as a hen's egg should be left. Another thinks a remnant as large as a walnut should be left. A third believes that since the normal thyroid gland weighs from 20 to 30 gm., this amount is sufficient to leave. Still others say that one fifth or even one tenth of the whole should be left. So many opinions give the impression, which is probably correct, that nobody knows exactly how much to leave, for it must be true that each case is different, and therefore an amount which would be more than should be left in one case might, if taken as a standard for another, result in hypothyroidism. If the gland is cystic or colloidal, and much of the normal secreting structure is impaired, the removal of so much as nine tenths would probably be hazardous. In hyperplastic, thyrotoxic or exophthalmic goiter it is conceivable that four fifths or even nine tenths of the gland might safely be removed. Like many other problems in surgery, the question of how much to remove is one that must be settled during the operation, after the gland is exposed and when the extent of its pathologic condition may be more or less accurately determined. On this point the question is one that must be determined by the surgeon's own judgment and experience. It is neither easy nor safe to follow those who say leave a stated proportion, for it is evident that to do so, to estimate such an amount with any degree of accuracy during the operation, could not be done. Another factor also enters into the question, namely, the degree of lost function in the gland resulting solely from the greatly lessened blood supply incident to the thyroidectomy. One upper and one lower pole is almost certainly ligated, and not infrequently both upper poles are blocked. To underestimate the future effect of these ligations, and therefore to remove a maximum portion of the thyroid, just as though the portion removed constituted the entire change in the secretive power of the gland, might end in disaster. It would seem wise, therefore, certainly safer always to err on the side of leaving too much rather than too little of the gland.

Of course this advice, if followed, will sometimes result in the necessity of secondary operation; but if so secondary operation may be justified on the ground that it is possible to cure hyperthyroidism, whereas hypothyroidism as a result of excessive surgical zeal is not amenable to surgery.

7. Lobectomy Versus Translobular Resection.—Another point, although more of esthetic interest than of surgical value, relates to the question as to whether the operation should consist of a lobectomy, partial lobectomy, or of a translobular resection. Of course the question largely settles itself in cases in which only one lobe is involved. Some years ago, operators almost invariably performed a more or less complete lobectomy even though the opposite lobe also was enlarged, though to a less extent. Gradually the tendency has been to perform an operation that will leave the neck symmetrical, and it is obvious this cannot be done unless surgical consideration is given to all the lobes. Lobectomy has its advantages. It can be more quickly done. Less loss of blood attends lobectomy, and less oozing of blood and serum follows during the first few days. Since either lobectomy or translobular resection is equally safe if preformed with an equal degree of skill, and since the curative result is exactly the same, the foregoing points in favor of lobectomy are not good argument for its performance; for whatever the final result as to cure of the patient may be, if the patient's neck remains deformed, disappointment to the patient and to friends is certain to follow.

PERSONAL EXPERIENCE

My personal operative experience is based on 150 cases. Compared with that of others, this small number would not justify a report were it not that my observations are made somewhat from the point of view of the laryngologist rather than from that of the general or abdominal surgeon.

I have had no death that was in any way connected with the thyroid operation; one death occurred more than three months afterward, and was due to recurrence of the hyperthyroidism. The patient, a woman, aged about 30 years, had in extreme degree the symptoms of hyperthyroidism with enlargement of the right lobe of the thyroid. After resection of this lobe she was greatly improved and returned home in two weeks. Unfortunately, her whole family was of that class which feels the imperative necessity of constant bedside presence, and of visible expression of apprehension. Attending physicians were of the belief that this attitude of the family was largely responsible for the fatal result.

The lack of mortality in my cases is perhaps in part due to the fact that 80 per cent. of all my cases have been nontoxic goiter, and of these nearly all the earlier patients had enlargement only of the central lobe. These patients were nearly always in good health except for pressure symptoms and nervousness. Such cases are good surgical risks, and hence if thyroidectomy is performed according to the principles of modern surgery, the percentage of recovery should be near 100.

My first thyroid operation was in February, 1890. The patient was 16 years old, and was in perfect health except for a choking sensation due to the presence of a pretracheal tumor as large as a pullet's egg, which on removal proved to be an enlargement of the thyroid isthmus. At that period solutions of mercuric chlorid were used in all operations, and were freely used in the removal of this goiter. I recall that much bleeding was encountered and that mild infection followed, even though accepted antiseptic precautions were employed. The operation was performed outside a hospital. A good recovery took place, but with more scar than follows present procedures.

In August, 1896, I examined a Miss —, of Centerville, Ind., who complained of difficult respiration and sensations of choking. There was no external tumor, but when the tongue was depressed deeply a large bluish mass could be seen above the epiglottis. The woman was 40 years of age, and I suspected malignancy of an enlarged lingual tonsil. After several examinations covering a period of two or three weeks, there seeming no evidence of malignancy, I succeeded in passing a large wire loop over the growth and in removing it gradually by snare. It was larger than an English walnut, thickly traversed by veins, and slightly lobulated, though smooth. It proved to be thyroid tissue, evidently an aberrant thyroid. The distressing symptoms were relieved, and there was no evidence of return several months later, after which time no further information was received.

Three cases were for large abscessed thyroids. Two of these were in women recently confined, in which the breaking down of the gland was so extensive and advanced that the diagnosis could be made by the history of the cases and palpation of the tumor. My third case was that of a man about 35 years of age, a railroad fireman, who had carried a large goiter, which evidently was a simple hypertrophy, for many years. He had had what he stated was influenza in the fall of 1918, and, he alleged that the disease settled in his neck, causing him to remain in bed many weeks. When first examined by me there seemed an enormous, hard, bilobular goiter present, accompanied by fever, pain and stiffness of the neck. Abscess seemed almost certainly present. At operation both lobes were so thoroughly hollowed out by the suppurative process as to give ground for the thought that hypothyroidism might result, although until now no such symptom has developed.

In three instances, cartilaginous formations were encountered during the glandular resection. Under the finger one of these felt cylindric and corrugated. Had it not been for the fact that the object lay far external to the median line, and that the trachea could be outlined in its normal position, it could easily have been mistaken for the windpipe.

Only one patient has had any degree of vocal impairment. This was in the nature of a slightly "changed" voice, as she expressed it. On examination of the vocal cords, perfect movement was present and therefore no injury to the recurrent nerve had occurred. The vocal difficulty was due, no doubt, to the stiffness and temporarily impaired mobility of the accessory muscles of the larynx that were severed at operation. I have not seen this patient for a long time, and presume she now has no complaint.

One postoperative hemorrhage occurred. The patient, a man, aged 38, with large bilobular enlargement, was operated on at 2 p. m. by translobular resection, and the wound closed over a dry field. At 1 a. m. next day, the nurse reported that hemorrhage was taking place. The gauze dressings were wet, and blood had trickled into the bed. The neck was ballooned to an enormous size. The wound was immediately opened in the operating room, under strict asepsis. No anesthetic of any kind was used. The sutures of fascia and muscle had all pulled apart, and several ounces of blood clot filled the cavity. This blood clot was scooped out with the hands and inspection made for active bleeding points, but none were found, the entire wound being dry. The sutures were reinserted, morphin and proctoclysis were given, and an uneventful recovery followed. A general oozing evidently caused the trouble.

Four cases were partially substernal. No special difficulty occurred in operating in three of these, but the fourth, a man, aged 65, and stoutly built, presented numerous points of interest and danger. The thyroid was large, bilobular and of long standing. Gradually the left lobe had encroached on the trachea and larynx until at the time of operation the larynx lay under the angle of the jaw on the right side. Respiration was labored, and, when the patient sat quietly, could be heard 20 feet away. As a result, both heart and lungs were greatly impaired, and although he seemed resigned to a possible unfavorable outcome, there was harmful apprehension concerning it. In lifting the large substernal mass of goiter from its bed there were a few moments of anxiety because of intensely labored breathing, and several times it was felt wise

to drop back the substernal portion and allow the patient more air until such time as it might be wholly withdrawn and removed. The trachea was torn in one place. The rings on one side were partly absorbed and weakened, and this part of the trachea was finally supported by suturing to the pretracheal fascia and muscles. Some blood found its way into the trachea, giving rise to cough and bloody expectoration during the succeeding few days. Complete recovery occurred, the patient being better now after two years than at any time for a score of years preceding.

My remaining patients were thyrotoxic or exophthalmic, and included almost every degree of severity. I have felt that the safety of these, as shown by their survival of the operation, was due in great measure to trustworthy diagnosis and adequate preoperative preparation.

In only three cases was ligation necessary. Preoperative preparation in these failed, all thyrotoxic symptoms continuing throughout a prolonged period of rest and medication. One of these patients was in bed for three months, yet the pulse rate continued 130 when she was absolutely quiet, and would rise to 150 on slight movement. She was greatly emaciated, slept almost not at all, sweat profusely, and presented altogether a condition quite unfavorable to complete thyroidectomy. The two upper poles were ligated at the same operation under local anesthesia, with almost no disturbance to the patient. Appetite and sleep improved and the pulse rate fell as low as 68 within a week, remained below 90 for two weeks when it began to rise, and in eighteen days was 100. Complete thyroidectomy was safely performed at this time, and was followed by uneventful recovery. Within three months this patient was following an almost normal life. The other two ligations were satisfactory, but the results were not so striking.

RELATIONSHIP OF DISEASED TONSILS TO GOITER

Much interest has been shown by many operators in the relationship of diseased tonsils to goiter. Shurley, Tinker and others have written on the subject and believe that diseased tonsils are an important causative factor in most cases. In the last six years I have made accurate note as to the presence of diseased tonsils in all goiter cases. More than 90 per cent. of all cases that I have examined have had clearly evident disease of the tonsils, and judging them from the most modern point of view as to what constitutes a diseased tonsil, I think practically all may rightly have been classed as having foci of infection in the tonsil. In more than 50 per cent. of my cases of goiter in which operation was performed during this period, the tonsils were removed before the thyroidectomy, sometimes as long as a year previously, in the hope that the goiter operation might thus be avoided. It seems certainly true that after the thyroid is once diseased the removal of the tonsils has little appreciable beneficial effect on the thyroid disease. Indeed, I have seen the thyroid rapidly enlarge and the thyrotoxic symptoms increase after the performance of a most complete tonsillectomy. These observations do not, however, form a good argument against the possibility that the diseased tonsil may have been the original focus from which the thyroid received its infection. Indeed, the frequent presence of infected tonsils in thyroid cases points almost certainly to a connection between the two diseases; but the point I wish to make is that clinical experience seems to justify the belief that when the thyroid is once diseased, from whatever source, the removal of the tonsils has but little effect on the future course of the thyroid ailment, but does, of course, improve the physical condition of the patient, and that tonsillectomy is, therefore, to be recommended as a preoperative measure of great value.

FINAL RESULTS

A correct statement of the percentage of final cure in my series of thyroidectomies cannot be made. I have been in correspondence with, or have seen most of the patients months or years after the thyroidectomy. I know of no dissatisfied patient after two years. It is not unusual for thyrotoxic patients to expect a too rapid cure, and to resume early a mode of life that is prohibitive of complete cure. These usually learn from experience their limitations; and when they finally accept them, recovery takes place. Many toxic goiter patients find it necessary for economic reasons to return to some occupation at an early date. Such patients are often mothers with small children, and these feel the necessity of resuming household cares at once. Strangely enough, these mothers often recover under most trying environment. Of course, all nontoxic goiters are well as soon as recovery from the operation takes place. Exceptions must be made for those cases in which pressure has set up respiratory difficulties, and especially when the trachea has been severely damaged.

ABSTRACT OF DISCUSSION

DR. EMIL MAYER, New York: I wish Dr. Barnhill would tell us whether he omitted to read that part of the paper in which the differential diagnosis of the condition was made. The reason I ask is that quite recently I saw a patient who had been advised by a prominent surgeon to have an operation performed on her thyroid. She had no pressure symptoms, no tachycardia, nothing that would indicate the effect of a diseased thyroid, except a swelling of the neck. She was a young woman, and was naturally averse to having an operation performed that would leave a scar. To my mind she had no thyroid and required no thyroid operation, because it was simply a bronchocele. How frequently that occurs, perhaps, the essayist will be able to inform us. In this instance the patient made a very good recovery. The hypodermic needle evacuated fluid, and a few injections of iodine resulted in a cure with disappearance of swelling and no scar tissue.

DR. NORVAL H. PIERCE, Chicago: May I ask the essayist to tell us what constitutes a diseased tonsil?

DR. JOSEPH C. BECK, Chicago: I am somewhat disappointed in Dr. Barnhill's paper. While I hoped that he would say that he operated on the thyroid, my thought was that he would bring out the importance of the laryngologist's connection with surgery, particularly where he is indispensable, as when the patient has tracheal collapse from a large thyroid or when there is present a substernal or a subclavicular thyroid which makes operation practically impossible for the general surgeon. There is nothing better than to have the laryngologist see the patient before anesthesia is induced or before the operation is undertaken under local anesthesia, and with a tracheal catheter or a bronchoscope do an intubation before the operation is begun. You have all, perhaps, witnessed the dilemma in which the general surgeon finds himself when he attempts to operate in a case of substernal or subclavicular tumor. It is only for a short period of time, but long enough to put the patient in jeopardy. Another thing I hoped the doctor would bring out was the question of operating on the larynx and trachea in the presence of a large thyroid. We want men to take up borderline surgery. If we are claiming to do other operations on the neck we should know the anatomy, and if there is a condition of laryngeal and tracheal disturbance from the thyroid and it must be removed, it is a question of whether you wish to do it or not.

DR. THOMAS E. CARMODY, Denver: I have a patient who has a patent thyroglossal duct. Every time he has an attack of influenza he gets an infection of this duct with swelling of the thyroid. Recently, during one of these attacks, I succeeded in getting some of the pus from the duct. One of

our pathologists, after taking a culture, injected it into a rabbit. The rabbit was dead in forty-eight hours, and a very much enlarged thyroid gland was found.

DR. JOHN F. BARNHILL, Indianapolis: In answer to Dr. Mayer as to the differential diagnosis, I state in the paper that every possible means is used to differentiate these cases and to classify them so that by no possibility could any case that is not a surgical goiter reach the surgeon. I have received aid in difficult cases from the internist who is skilled in every feature of diagnosis, and thus have more certainly avoided overlooking any point in diagnosis that should not be overlooked. Some of these borderline cases are exceedingly difficult to diagnose. Dr. Pierce asked if I could tell when a tonsil is diseased. I would answer briefly: if we find the patient has an occasional sore throat, or a continuous sore throat, be the tonsil large or small, if we are able to express infective material from the crypts of such tonsils, if the tonsils are hypertrophied and appear sore, if there is a history of general aching, muscular soreness and stiff joints, if, in addition, the patient has pains in the neck, shoulders and back, then I think we may assume that the tonsils are diseased, and are a menace to health. If I understand Dr. Beck, he expects the laryngologist to stand by during thyroid operations performed by an abdominal surgeon, and to meet emergencies that may arise. It seems to me that since the laryngologist knows what these emergencies are likely to be, and has the apparatus for meeting them, that he, if properly trained surgically, should be equally competent to perform the thyroidectomy. During my earliest work I kept a tracheotomy set at hand that I might use, if necessary, but no occasion has ever arisen for using it, even in the substernal cases of goiter. A tracheotomy, when necessary in patients with thyroid enlargement, would be done exactly as a tracheotomy in any other case would be done. The trachea is cut down on, the isthmus of the thyroid is divided and retracted without difficulty, while, of course, all vessels are ligated as one proceeds. The enlarged thyroid would not add to the danger of the operation.

HEART DISEASE AS A PUBLIC HEALTH PROBLEM *

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In presenting a plea for a wider recognition of the public health aspects of heart disease it is well to begin with an attempt to visualize, in some degree at least, the size of the problem involved. This is not altogether an easy matter, for it is obvious that neither statistics illustrating the incidence of the disease nor those showing the mortality from such disease will give a complete idea as to the importance and size of the problem. The economic aspects of the subject are clearly related to the degree of disability that the disease entails and the length of time that such disability is likely to exist. Accurate information on the latter points is not available, and I shall not dwell on this aspect of the subject now further than to remind you of the familiar facts that in patients suffering from disease of the heart a certain degree of physical disability often exists for a good many years, and that before death finally occurs there is usually a period of complete disability and dependence on others, which may extend from several months to several years.

If we turn now to the question of the incidence of heart disease and its mortality, we find at hand statistics that will enable us to form a fairly accurate judgment concerning the size of the problem. The figures of the local draft boards during the war show that

among the men of the country of military age the rejections for organic disease of the heart amounted to 30.74 per thousand. Of the men accepted by the local boards and subsequently examined at the camps by army surgeons, the rejections for heart disease averaged 11.56 per thousand. This brings the total rate of rejections for heart disease up to 42.3 per thousand, or 4.25 per cent. In other words, among 5,000,000 men of military age, more than 200,000 were disqualified for service because of heart defects. It is doubtless true that in these examinations a good many men with organically sound hearts were included among those rejected; but the error is offset, in part at least, by the fact that many men with the milder forms of disease of the heart were accepted for military service. In considering these figures it should be remembered that they fail to include two very important types of heart disease—that due to syphilis and that due to degenerative changes—which are only rarely seen in men of military age. Statistics from civil life are not easy to obtain. Almost the only ones available are those of results of the examination of applicants for life insurance policies, and these vary considerably in the different companies depending on the caution or liberality exercised in the acceptance of applicants with what seem to be minor heart defects. In one of the

DEATHS IN THE U. S. REGISTRATION AREA DURING 1917

	All Ages		Ages 40 and Over		
	Number	Per Cent. of All Causes	Number	Per Cent. of All Causes	Per Cent. of All Ages
All causes.....	1,066,711	100.0	566,323	100.0	55.0
Pulmonary tuberculosis.....	93,290	8.7	35,151	6.0	37.7
Cancer.....	61,429	5.8	55,929	9.5	91.0
Cerebral hemorrhage and apoplexy.....	62,417	5.9	59,822	10.2	95.8
Lobar pneumonia.....	74,577	7.0	43,236	7.4	58.0
Kidney disease.....	82,657	7.7	70,725	12.1	85.6
Heart disease.....	128,719	12.1	110,426	18.8	85.8

large and carefully managed companies, during the period from 1915 to 1918, the rate of rejection for heart defects was 24.4 per thousand, in spite of the fact that persons with the more obvious forms of heart disease are not likely to apply for insurance.

A report of the Department of Health of New York City, covering over 250,000 examinations made by school medical inspectors during the year 1918, revealed an incidence of heart defects among schoolchildren of 1.6 per cent. This would indicate that among the schoolchildren of New York there must be approximately 20,000 with evidences of some cardiac disorder.

When we turn to mortality statistics for information concerning the size and importance of the heart disease problem, we find some very interesting comparative figures. The accompanying table is taken from a recent instructive statistical paper on this subject by Mr. Frederick L. Hoffman, vice president and statistician of the Prudential Insurance Company of America. From this table it is seen that diseases of the heart were responsible for almost one eighth of the deaths of all ages and for almost one fifth of the deaths in persons of 40 years of age and over.

These various figures, then, give us some idea of the numerical size of the heart disease problem in the different age periods and show the affection to be one of the more common of the chronic diseases, even during childhood. They do not, however, necessarily prove that affections of the heart should be singled out

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from many other common diseases as deserving of special attention from the standpoint of the public health. Indeed, the movement, which is now gathering headway, for the improvement and coordination of existing agencies for the relief of sufferers from heart disease and for arousing interest and cooperation in the problems of prevention has come into existence not so much because of the frequency of cardiac disease as because of the conviction that our present methods of dealing with the problem involve enormous economic waste and immeasurable suffering, much of which is unnecessary and preventable.

AGENCIES IN NEW YORK

It may be of some interest to review briefly the history of this movement so far as it concerns New York City. The initiative came from a small group of social service workers and hospital physicians who were much impressed by the lamentable need of facilities for the proper after-care of cardiac patients who had been discharged from the hospitals after more or less complete reestablishment of their heart compensation. In many instances the direct cause of the breakdown had been the laborious character of the work engaged in; and the two essentials for the preservation of their regained health—prolonged convalescent care and an opportunity to secure work of a less exacting sort—were nowhere to be had. The first tentative effort to remedy these conditions came in the establishment in 1911 of an outpatient heart clinic in Bellevue Hospital under the charge of Dr. Hubert V. Guile, and the success which attended this modest undertaking has been due to Dr. Guile's enthusiasm and perseverance and to the sound principles on which the clinic was based. It was held in the evening in order to secure the attendance of working patients. It included periodic examinations of all enrolled patients, no matter how well they might feel, and, perhaps most important of all, it had the services of an intelligent social service worker whose duties included the visiting of the patient in his home, the education of the patient and his family, the improvement of home conditions, and often the securing of some lighter or more suitable form of work. The results of the clinic in saving heart cripples from periods of decompensation and in enabling them to continue as wage earners have been surprisingly successful, and it has served as a model for the large number of dispensary heart classes that have since been opened.

In the following year (1912), an effort to solve this urgent problem was made along quite different lines by the formulation of plans which led to the incorporation of the Trade School for Cardiac Convalescents. This had for its object the maintenance of a country convalescent home, in which laboring men with crippled hearts could be given protracted convalescent care under favorable conditions and careful supervision, and at the same time could be taught a more suitable and less exacting trade. This arrangement, which was frankly an experiment, yielded much useful and interesting information. It showed that, under favorable conditions and supervision, such heart cripples could perform fairly laborious work for the greater part of the day, not only without injury, but apparently with actual benefit to their damaged hearts. Although this proved to be an expensive method of dealing with the problem, it served as a valuable object lesson to the larger convalescent homes, and was instrumental in opening the doors of these to a class of patients which

up to that time had been looked on as unsuitable for such institutions.

In the meantime, interest in the problem of the heart cases had been growing steadily, so that in 1915 the time seemed ripe for the formation of an organization which should deal in a comprehensive way with the various problems related not only to the care and relief of heart patients but to the even more important matter of prevention. The result was the incorporation of the Association for the Prevention and Relief of Heart Disease. The objects of this association, as defined in its first statement, were: to gather information on heart disease; to develop and apply measures that will prevent such disease; to seek and provide occupations suitable for heart disease patients; to promote the establishment of special dispensary classes for such patients; to extend the opportunities for adequate care of cardiac convalescents; to urge the provision of permanent institutional care for such cardiac patients as are hopelessly incapacitated for self support, and to encourage the establishment of associations with similar objects in other cities.

In the furtherance of these objects, a central office was opened and an executive secretary secured. It was felt that the first and most promising field of activity was the encouragement of the opening of special cardiac classes in the dispensaries throughout the city, modeled after that of Bellevue Hospital. The response on the part of dispensary physicians was prompt and cordial; the difficulty in most cases lay only in the securing of funds for the employment of a social service worker, without whose services, it was realized, the classes could not hope to operate successfully. In spite of this difficulty, our entry into the war found New York City with twenty or more of these cardiac dispensary classes in successful operation. For the period of the war it was found necessary to suspend the activities of the association; but a considerable number of the cardiac classes continued to function, in spite of the great dearth of physicians. The work of the association was resumed last autumn, and has rapidly gained momentum. Its accomplishments up to the present may be thus outlined:

1. The encouragement of the formation of special cardiac dispensary classes. At present twenty-seven such classes are in operation, in which some 3,000 heart patients are registered. Most of these classes are designed especially to care for working men, and for that reason are held in the evening. There are, however, among them eight classes devoted to the care of children with heart diseases.

In order to bring together the physicians engaged in the dispensary care of heart patients, there has been formed, under the auspices of the parent organization, an association of cardiac clinics, in which the special problems of these clinics are considered. As a result of these conferences, some progress has been made in standardizing the work of the clinics; that is, the classification of patients with respect to their degree of disability, the types suitable for treatment in convalescent homes, methods of treatment, etc.

2. The increasing of facilities for the care of suitable heart patients in convalescent homes.

Up to the time interest was aroused in the welfare of the cardiac patients, convalescent homes, almost without exception, discriminated against this class of convalescents. The much more liberal policy which has since been adopted by most of these institutions has been due largely to the example set by the trustees

of the Burke Foundation at their splendid convalescent home at White Plains. Here, under the wise and far-sighted policy of the director, Dr. Frederick Brush, convalescent heart patients, both adults and children, have been accepted in steadily increasing numbers, and have had the advantage of a protracted stay and of suitable occupational therapy. In all, more than 2,000 such patients have been cared for by this institution during the last six years, and the results in properly selected cases have been most gratifying. At present the convalescent hospital maintained by St. John's Guild is arranging to provide for 150 children with heart disease, and the doors of various other similar institutions have been opened to this class of patients.

3. The arousing of greater interest in the welfare of schoolchildren with heart disorders. It is recognized that the proper medical examination and supervision of children during school age offer exceptional opportunities, not only for the shielding of crippled hearts from further damage, but also for the prevention of the type of heart disease prevalent at that time of life. The association has given its active support to various efforts directed toward these ends, such as more frequent and complete physical examinations of schoolchildren, with special attention to diseased tonsils and teeth and to adenoids; greater protection in the schools for the heart cripples, and education of the parents, the teacher and the family physician as to the importance of tonsillitis, slight rheumatic and "growing pains," and as to the need of greater care during convalescence from the acute infectious diseases, etc.

The question of the desirability of the segregation of cardiac children in special classes in the schools is being given careful study. Through the cooperation of the board of education, this experiment is being carried out in several of the schools, under supervision by certain of the dispensary heart clinics; but it is yet too early to know whether or not the plan is deserving of general application.

4. The accomplishment of a good deal individually by the social service workers in the various dispensary heart classes, in the matter of providing heart cripples with more suitable occupation. During the last two or three years, however, a great part of this burden has been taken over by the Employment Bureau for the Handicapped, maintained by the Hospital Social Service Association. In this extremely difficult field of practical philanthropy this bureau has achieved notable success, partly no doubt because of the unusual demand for labor of all sorts, but chiefly because of the exceptional degree of intelligence, perseverance and tact displayed in the carrying on of the work.

PREVENTION OF HEART DISEASE

Progress in that phase of the problem which relates to the *prevention* of heart disease has, naturally, been slowest and least appreciable. This subject is so extensive and so many sided that a discussion of it cannot be included in this short paper. It seems evident, however, that efforts in this direction must follow the three lines which correspond to the three great causes of heart disease; namely, the prevention of rheumatic infection and its complications, the prevention of syphilis and its late effects, and the postponement of the degenerative changes incident to the later years of life. That the task is beset with difficulties does not justify us in failing to undertake it; rather its difficulties, as well as its size and its importance,

call on us the more loudly for a determined and sustained attack on it. Such an attack obviously demands concerted action on the part of investigators, clinicians and various public health organizations. It would seem as though the coordination of these various agencies could best be accomplished through a national organization formed on the lines of the Association for the Prevention and Relief of Heart Disease in New York City. There are signs in many parts of the country of an awakening of public interest in the heart disease problem. Special heart clinics are already in operation in Boston, Chicago and other cities, and the formation of a national organization dedicated to this object would seem to be the next logical step. The history of every national organization of similar character has shown the enormous gain in momentum that results from such coordination of effort and unity of purpose.

121 East Sixty-Second Street.

ABSTRACT OF DISCUSSION

DR. ALEXANDER LAMBERT, New York: In the prevention of heart disease neither sanitation nor inoculation will answer. It is a question of personal hygiene and education, and the disease when once acquired handicaps permanently. The great cause of heart disease up to the age of 30 is sepsis or rheumatism. Seventy-six per cent. of rheumatic children under 10 years of age have affected hearts. Of 500 cases of rheumatism in all ages studied in Bellevue Hospital a few years ago, 56 per cent. showed some form of chronic heart disease. After 30 years of age, another great cause of heart disease is syphilis, and syphilis injures the heart and arteries not in the late secondaries, as is generally believed, but often in the early secondaries. Such a syphilitic usually breaks down at about 45. After 50 years it is the degenerative process producing atheroma which causes most of the cardiac diseases. The form of heart disease which injures most is that chronic condition around the auriculoventricular valve, closing slowly but surely, forming mitral stenosis. Although this begins in the early years of life it usually cripples the patient between 33 and 38 years of age. What is the best thing to do with these people? Dr. Guile, who founded the cardiac clinic in Bellevue Hospital, taught his cardiac patients three things: to avoid alcohol, tobacco and stairs. It is not a question of the valves involved, but of the myocardium. Each man must learn to gage the ability of his heart to withstand certain exertions and to learn the limitations of his exertion. It is the duty of the clinician to find out when and under what conditions these morbid processes begin and what can be done for them during the living hours of the patient. In Bellevue Hospital the total number of rheumatics since 1914 has continually diminished and there has been practically an even diminution in the total admitted of all ages. Since 1914, also, the dental clinics have been struggling with the teeth and the children's clinics with tonsils. Since 1914, a diminution is shown of the ratio of cases admitted between 20 and 30 years of age compared with the total number of cases coming into the hospital. So that for these years both the total number and the ratio to total number have diminished; hence attention to both tonsils and teeth has helped. I found that 65 per cent. of rheumatics showed bad teeth and 35 per cent. showed bad tonsils. Bad teeth seemed more to blame than bad tonsils for all ages. The syphilitic cardinals predominate over the septic types in the hospital today; previously the rheumatic cardinals formed the majority. The prevention of sepsis, syphilis and arterial degeneration is what must be taught to improve public health in relation to heart disease.

DR. G. C. MCKINNEY, Lake Charles, La.: Dr. Conner mentioned that 1.6 per cent. of schoolchildren in New York City have heart lesions, and Dr. Lambert drew attention to the teeth and tonsils. I would like to call attention to the fact that Dr. Lambert said "bad tonsils" and not "hypertrophied

tonsils," because a tonsil may be very bad although not larger than a peanut. This expression "hypertrophied tonsils" should be dropped from the medical nomenclature. It means nothing whatever.

DR. WILLIAM H. MERCUR, Pittsburgh: The one special feature of Dr. Conner's work which always impressed me as most valuable and practical he did not especially emphasize. He devised and carried out a plan by means of which suitable occupations can be taught to hospital patients who are suffering from advanced cardiac lesions; patients whose compensation constantly breaks down whenever their former occupations are resumed. Those of us who are constantly seeing such patients must have observed with what regularity they return time and time again, either for hospital or private care, and always with greater frequency, until finally they can no longer work. A very large proportion of these patients, if taken early, and proper facilities given them, can be educated to earn their living in other ways, by carefully selecting more suitable occupations for them, in which their physical exertion is not out of proportion to their reserve cardiac strength. Such patients can thus have their life and usefulness prolonged for years and incidentally save our hospitals hours and hours of time. Few cities in this country have developed this idea to the extent New York has, and its success is chiefly due to the consistent efforts which Dr. Conner has made, not only to inaugurate this work but to see that his patients receive this necessary training. Those interested in carrying out this excellent idea in other cities would do well when they are in New York to look up the Sharon Work Shop, 84 Lexington Avenue, where this instruction is given.

DR. JOHN P. DAVIN, New York: We have a form of tenement house in New York that should be put out of commission, and that is the five story "walk-up." I am sorry that that tenement house was put up under the auspices of the Tenement House Commission. It was put up with the intention of doing away with the evils of the old tenement house. But there is nothing more conducive to heart disease in children who have tonsil trouble, than living on the fifth floor of a New York apartment building.

DR. B. A. LEDBETTER, New Orleans: One of the most important points to bring out in regard to this question of heart disease is the fact that the medical profession as a whole knows so little about it. Of all the organs in our body the heart is less understood than any other. I can look back on an experience of twenty-five years in examining a great number of people for insurance companies, and finding loud murmurs. Guided by my textbooks I felt sure that a person with such loud murmurs would be dead in a few years, yet some of those people are just as well now as they were then. The most serious heart diseases are unaccompanied by murmurs. On the other hand, a great number of murmurs are absolutely harmless. So long as the muscle is good the heart will work all right. It depends on the reserve that heart has, and it is by that that you must judge the case. At the necropsy, the valves in a great many of the cases are absolutely perfect. Do not think that because a man has a heart murmur you must lay him up. At the same time, however, we must not forget that with all these cases of heart disease, even mitral insufficiency, which is the least harmful of all heart diseases, the death rate is double that of the ordinary run of people. So that even in the mild cases you have to watch the patient. In those cases, we must find out what that heart can do. Then let the patient go ahead and do these things. He is going to die of something else. The same thing applies to schoolchildren. Many children come to us with heart murmurs. We cannot tell the damage done to that heart by listening to the murmur. Study the child. Do not stop that child from playing simply because it has a heart murmur. That child will stop himself if there is any serious damage to the heart.

DR. LEWIS A. CONNER, New York: I am entirely in sympathy with most of the sentiments of Dr. Ledbetter. We have to be very careful in protecting people with heart disease, but we have to be just as careful to protect healthy people from the stigma of heart disease. Quite as much

damage can be done in one direction as in the other, and success can come only from a better knowledge of the significance of heart murmurs. Only a very small percentage of them are really indicative of organic damage. I should like to emphasize the importance of the special heart dispensary classes in the management of heart patients who have had a breakdown and have been discharged from the hospital with their compensation more or less completely reestablished. It has been shown conclusively that such outpatient supervision can do much to prevent subsequent breakdowns and can save such patients from repeated visits to the hospital ward. But, while much can be done to save the already damaged heart from periods of decompensation, the great problem is that of the prevention of heart disease. There are three distinct types of damage: that due to rheumatic infection in early life, the syphilitic lesions of middle life and the degenerative types of trouble which are seen chiefly in the later years of life. The opportunities in this field of prevention are very great, indeed, if we can but get cooperation between the laboratory workers, the clinicians and the various public health organizations.

OUTLINE OF A SCHEME FOR WRITING THE NATURAL HISTORY OF SYPHILIS *

SANGER BROWN, M.D.
CHICAGO

Of the diseases that affect the human race, syphilis is certainly among the most formidable; and while within the last decade or two, owing to the brilliant development of laboratory craft, our conceptions of the malady have been materially extended and clarified, no corresponding progress has been demonstrated in the matter of prevention and cure.

About fifty years ago, before the natural history of pneumonia had been established, the scientific programs of medical society meetings, and the pages of medical journals presented a liberal display of papers extolling the specific virtues of various remedies in the treatment of that disease. When its natural history was understood, however, it immediately became obvious that nearly all the advocated measures of treatment had been more or less harmful and, indeed, in not a few instances had directly contributed to a fatal result. While the revelation of its natural history has not so far led to the discovery of a cure for pneumonia, it certainly cleared the field for action and has mitigated much suffering and saved many lives. If the natural history of syphilis were known, advantages might be expected similar to those referred to in regard to pneumonia.

In the treatment of any disease, the practitioner's ability to assess correctly the value of the remedies employed must depend on his knowledge of its natural history. It is recognition of the importance of this maxim that has prompted me to propose a plan for writing the natural history of syphilis; for so far this has not been satisfactorily accomplished, nor at the present time is there anywhere evidence of a movement in this direction.

Two outstanding obstacles bar the way when the task of ascertaining the natural history of syphilis is contemplated: One of these is created by the social and moral stigmas with which, according to popular verdict, syphilis stamps its victims. The other owes

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

its existence to the protracted duration of the disease. Without my attempting either to state or to discuss the different views entertained at present regarding the course and curability of syphilis, probably all will agree that, in order to obtain the most accurate possible knowledge of the natural history of the disease, critical observations should cover the entire lifetime of a great number of patients, from birth when possible, but in any event beginning with the primary infection.

That the necessary histories can be secured and profitably studied only by an earnest and sustained coordinated effort of our profession may appear more obvious if some of the conditions incidental to the work are briefly stated.

NECESSITY FOR COOPERATION

In a considerable proportion of cases, a syphilitic patient, whether treated or not, regains his usual health within a period of two or three months of his primary infection, and even though during this period adequate clinical notes had been made, in many instances and for various reasons the physician is afforded no further opportunity of amplifying his record. Not until twenty years later perhaps, when symptoms of tabes or paresis appear, is the medical history resumed. Assuming that the clinical notations cover the remainder of the patient's life, including a necropsy, and that the professional services throughout were of the highest order, then so far as supplying a valuable contribution to the study of the natural history of syphilis is concerned, the commendable efforts of the several physicians connected with the case are largely wasted, because for a considerable period the patient would not have been under medical observation at all, and because it would rarely happen that the notes covering the period of initial infection would be available to the physician in charge during the final stages. Incomplete histories would be of only limited value for the purpose in view. In order to carry the proposed investigation to successful accomplishment many hundreds, perhaps thousands, of complete histories must be available for competent analysis. Manifestly these can be accumulated only by some sufficient scheme of cooperation.

For the purpose of enlisting and maintaining the interest and cooperation of the patient, appropriate propaganda should be prepared. This should appeal to his altruism; should convince him that his own interests would be best conserved by continuing for the remainder of his life under close medical supervision; should assure him that his acquiescence would in no way compromise his rights of professional privacy, and should make it clear that thenceforward without incurring any additional financial obligation he would receive the highest grade of medical service anywhere obtainable.

While many patients for various reasons would undoubtedly decline the terms submitted, it does not seem improbable that a sufficient number might accept and adhere to them to meet the requirements of the proposed investigation.

Conceding that it is important to obtain the specified histories; that a sufficient number of physicians might be induced to volunteer their services for the work incident to their production, and that the necessary cooperation of patients could be secured, practical plans for the successful prosecution of the project present themselves for consideration.

PROPOSED COMMITTEE AND ITS FUNCTIONS

The investigation of a subject like this one, which challenges the serious concern not only of the nation but also of the whole human race, and which for its successful prosecution requires the coordinated effort of a large number of well qualified physicians, should obviously be conducted under the auspices of the American Medical Association, our strongest, most representative and most authoritative medical organization. The appointment of a standing committee for this purpose would in my opinion constitute a legitimate expansion of the activities of the Association.

Assuming that a committee had been formed as suggested and was prepared to proceed with the work, meetings would have to be held to determine its scope, and methods to be adopted in carrying it forward. A campaign might be conducted to enlist the interest both of the laity and of the profession. Appropriate papers might be prepared and presented where they would be most effective. The services of both the lay and the medical press might be sought. The profession might be canvassed for volunteers who would be willing to contribute their services to the actual work of taking histories according to the prescribed methods. A manual setting forth the most approved and serviceable information on the subject of syphilis might be compiled for the instruction and guidance of workers.

In anticipation of flagging interest, the committee might see to it that close relations with the volunteers were maintained so that timely assistance and encouragement could be given. This would involve considerable correspondence and possibly quite numerous personal interviews, lectures and demonstrations. In the event of interruption of the relations between an observer and a patient, a method should be devised to secure continuation of the clinical record. Provisions would have to be made for analyzing, classifying and filing the histories, which would require both medical and clerical service.

The foregoing outline of the duties which would be required of the proposed committee demonstrates that, from the first, funds would be needed, and that it would be idle to attempt to carry the work to a successful issue without the assurance that ample funds were available.

CARRYING OUT OF THE PLAN

For the purpose of contributing to a more definite understanding of the proposed plan, let it be assumed that all desired conditions had been met. Then in some populous center, a constituent society of the American Medical Association, in which to initiate and develop methods for taking, collecting and filing the specified histories, should be selected. Those willing to participate actively in the work would have to organize; and from the first, to insure progress, the organization would require the services of a qualified paid executive. It is quite possible that the advisability might become apparent, as the work proceeded, of providing hospital accommodations for a limited number of patients presenting symptoms demanding special facilities for their satisfactory observation. As experience ripened, units might of course be multiplied as desired. Several units would naturally suggest the necessity of a central bureau from which all authority must emanate and to which a report of all activities must be submitted as the central committee might direct.

The scheme certainly sets a formidable task. It offers neither individual fame nor pecuniary reward; and while some beneficial results, especially from the

educational side, might be expected in the first decade, fifty years would probably be required for completion of the investigation, so that few if any of the earliest workers could hope to witness the full results to which their efforts had contributed. A strong spirit of altruism, high courage and energy are demanded for the initiation and prosecution of the subject. Hesitancy, criticism, and excuses are only natural under the circumstances; and yet, from the clinical side, unless we accept present methods of study and practice as final, a critical survey of the situation discloses no satisfactory alternative.

It may be stated here that a large standing army, providing its permanence could be secured, presents some exceptionally favorable conditions for study along the lines suggested. Some valuable results of work done in the Austrian army have already been published. But at best the range of military practice, under ordinary conditions, is not comprehensive enough to meet all the requirements of the proposed investigation; and furthermore, it does not include the highly important educational features to which reference has been made.

QUESTIONS THAT WOULD BE ANSWERED

In my opinion, from the clinical side the submitted scheme more than any other promises to shed needed light on such questions as:

1. What are the immediate and remote effects of various methods of treatment?
2. What proportion of syphilitics develop paresis or tabes?
3. Does any method of treatment influence liability to paresis or tabes?
4. In what proportion of cases does the Wassermann test remain positive in spite of all methods of treatment?
5. What are the various relations between cerebrospinal fluid and blood Wassermann findings? From a study of these can liability to paresis or tabes be predicated?
6. Can the wife of a syphilitic patient who is symptom free but has a positive Wassermann test acquire a positive Wassermann test from her husband without ever manifesting any symptoms of infection? And if so is she immune from further reinfection? And what is her liability to paresis and tabes? Similar questions would, of course, apply to the children of syphilitics.

This list of questions is intended to be merely illustrative; the investigation should undoubtedly cover the whole range of syphilitic pathology, and if the suggested committee be appointed, this should be duly recognized in its membership.

I respectfully submit that none of these or similar questions can be answered satisfactorily until the natural history of syphilis has been written.

PROPOSED RESOLUTIONS

I submit the following preambles and resolutions for your consideration:

WHEREAS, The deleterious effects of syphilis on the mortality and morbidity of the human race are so prevalent and so severe as to challenge the most serious attention of the entire medical profession; and,

WHEREAS, In the scientific study of any disease, knowledge of its natural history is an item of cardinal importance; and,

WHEREAS, Owing to the protracted course of syphilis, a continuous and complete clinical record of a given case can be secured only through the services of several successive medical observers; and,

WHEREAS, It is highly desirable that a sufficient number of completed histories be accumulated and preserved, and made easily accessible to students; and,

WHEREAS, For the successful accomplishment of the purpose set forth above, the interest and cooperation of a considerable number of the best elements of our profession as represented in the membership of the American Medical Association are necessary; therefore be it,

Resolved, (1) That the Section on Nervous and Mental Diseases of the American Medical Association recognizes the importance of ascertaining the natural history of syphilis and of making this history accessible and in form serviceable to students of medicine; further,

Resolved, (2) That the Section on Nervous and Mental Diseases of the American Medical Association respectfully requests the trustees of the American Medical Association to appoint a committee from the sections most immediately concerned, whose duty it shall be to devise practical means and methods of accomplishing the foregoing specified purpose; and further,

Resolved, (3) That the representatives of this section in the House of Delegates be requested to present these preambles and resolutions to the House of Delegates, and to ask its endorsement.

59 East Madison Street.

ABSTRACT OF DISCUSSION

DR. HUGH T. PATRICK, Chicago: No one could question the wisdom of this matter if it could be carried out. We all agree that it is something devoutly to be wished for. The difficulties lie in the details of carrying out the plan, but if they can be worked out by a committee so as to be made practical, as indicated by Dr. Brown, we have reason to believe that the necessary funds can be procured. Papers have been read to show that the incidence of tabes and paresis has no relation whatever to the previous treatment for syphilis; that tabes and paresis occur just as frequently in patients who have previously received good treatment for syphilis as in those who have not; and papers have been published to prove just the contrary.

DR. W. S. LINDSAY, Topeka, Kan.: Twenty years ago I treated a young man who had syphilis with the old-time salvarsan. About ten years ago several Wassermann tests were made, but the results were negative. He came to me for certification for marriage. On the basis of these negative reports, I signed his certificate. He has continued to have negative Wassermanns, but the woman he married, whom I knew in childhood, as I had known him, had a still-born child and after that a positive Wassermann. She has had a second stillborn child and continues to have a positive Wassermann in spite of arsphenamin treatment.

DR. CHARLES D. HUMES, Indianapolis: I have been confused with the utter lack of knowledge regarding the date of infection, the amount of treatment that has been given, the nature of the after-care, if any, the character of the medical treatment, and the medical status of the patient immediately preceding the neurologic break. If those factors could be eliminated it would be a tremendous help to us and no doubt save many patients from the serious after-effects of syphilis. But until we can remove all the elements of human frailty and commercialism, it is very difficult to get patients to return to the office for so-called free consultation.

DR. C. R. WOODSON, St. Joseph, Mo.: I am heartily in favor of the resolutions that have been presented. The carrying and resisting capacity of men varies greatly, and it is hard to tell who will or who will not have paresis or tabes. I believe that paresis is less frequently found in those who have had thorough treatment than in those who have not had such treatment, but more particularly in those who have all "plus" habits, rather than in those who have excellent habits. A pathologist of some experience has expressed the belief that paresis was extremely rare, and perhaps never existed in those men who have never dissipated. I do not remember having observed this but if so it is in line with my belief of the effect of the "plus" habits.

DR. SANGER BROWN, Chicago: This paper was not intended to bring up any discussion on the course of syphilis but simply to outline a plan which might enable us to secure reliable data to work with when we wish to establish the value of any particular method of treatment that might be employed in the disease. Before the natural history of pneumonia was understood, a considerable part of the programs of medical meetings was taken up with papers extolling the specific virtues of certain remedies in the treatment of that disease. In the past few years the programs of medical meetings have shown a similar display in regard to syphilis. After the natural history of pneumonia was demonstrated and understood, the papers ceased, and it was understood that the extolled specific remedies had been, for the most part, meddlesome and harmful and in some cases directly contributory to a fatal result. It is quite possible that when the natural history of syphilis is understood, similar results may be noted.

RADIUM TREATMENT OF CANCER OF THE ESOPHAGUS UNDER ROENTGEN-RAY CONTROL *

R. WALTER MILLS, M.D.

AND

JOHN S. KIMBROUGH M.D.

ST. LOUIS

Cancer of the esophagus is one of the most distressing diseases. The inability to swallow adequate amounts of food and water, the regurgitation, strangling and sternal oppression, and the appallingly rapid loss of weight and strength characterize a disease that is truly terrible. To meet the appeals of the patient, who is abject in his willingness to undergo any sort of treatment, the physician has nothing to offer. The situation is uniquely hopeless from a radical standpoint, saving possibly the efforts of a few heroic surgeons whose specialized skill is usually not available or applicable. Palliative treatment is distressing and unsatisfactory. It is an added humiliation that cancer of the esophagus probably gives the earliest symptoms, is readily possible of at least as early diagnosis as any internal carcinoma, and that metastases occur late. It is obviously advisable to present any feature of a treatment that offers a prospect of relief, or with the greatest caution a possibility in its ultimate development of a cure of the disease. It is with this feeling that we report a few cases treated with radium under roentgen-ray control, emphasizing that the series is small and that the cases have been under observation at the longest only eighteen months.

There is as yet very little literature on the treatment of cancer of the esophagus by radium. The method seems to have been first used independently by Einhorn and Exner. Exner¹ reports three cases treated by the application of 60 mg. of radium, mounted on a bougie, to the region of the stricture for periods of twenty or thirty minutes on a number of successive or alternate days. In 1904, Einhorn² reported nine cases of esophageal cancer treated by radium. Later, seven

additional cases were reviewed.³ Special applicators of the bougie type were employed. Still later, Einhorn⁴ reviewed a series of seven cases of cancer of the stomach treated by radium, two of which involved the cardia and presumably the abdominal esophagus since they are referred to as esophageal lesions. A larger amount of radium, 70 mg., left in situ as long as six hours was employed. The matter of filtration is not emphasized. Results were palliatively beneficial. A formal report of a considerable series of cases is that of Janeway, Barringer and Failla⁵ from their work at the New York Memorial Hospital. These authors report twenty-two cases of cancer of the esophagus treated by radium. On account of their experience with the use of radium in other conditions, their report is comprehensive as to the demands and difficulties of the method applied to cancer of the esophagus. A. E.

Hayward Pinch⁶ reports one case of cancer of the esophagus treated by radium, and mentions another. Great improvement resulted in the case reviewed, gastrostomy being averted. Death from metastases occurred a year later without recurrence of dysphagia. The patient was "twice treated with a powerful emanation tube for fifteen hours." Chevalier Jackson⁷ goes at some length into the technic of radium therapy in cancer of the esophagus as to principles of filtration and especially the employment of esophagoscopy in the emplacement of the radium. He mentions Mr. Walter G. Howarth as obtaining excellent results through the employment of 100 mg. of radium left in situ for periods of eight hours on two or three occasions within a few days. Dr. C. W. Hanford⁸ has treated two cases of esophageal cancer with radium. One of the patients died from rupture of the

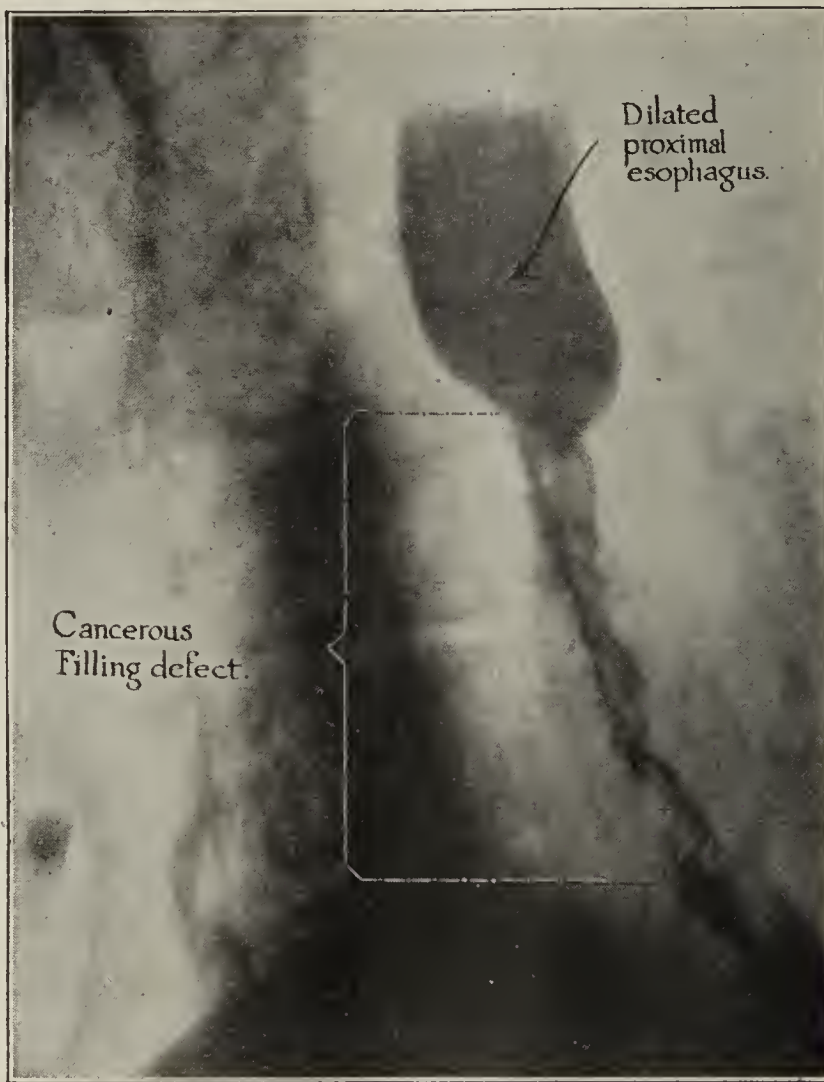


Fig. 1.—Carcinoma of the esophagus with extensive filling defect and dilated proximal esophagus. Roentgenogram taken during an act of deglutition, just before introduction of radium carrier, showing the extent and degree of involvement of the esophagus. Compare with Figures 2, 3 and 4 of same patient with same treatment.

esophagus. The second patient was materially benefited, but was lost track of after the second treatment.

The highly beneficial and probably at times curative effects of radium in certain carcinomas, notably in cancer of the cervix uteri, is an established fact. Abbe⁹ reports a case of this disease in which

3. Einhorn, Max: Radium Treatment of Cancer of the Esophagus, J. A. M. A. **45**: 8 (July 1) 1905.

4. Einhorn, Max: On the Value of Radium Treatment in Cancer of the Digestive Tract, Med. Rec. **80**: 609 (Sept. 23) 1911.

5. Janeway, Barringer and Failla: Radium Therapy in Cancer, First Report, 1915, New York, Paul B. Hoeber, 1917, p. 156.

6. Pinch, A. E. Hayward: A Report of the Work Carried Out at the Radium Institute, London, from Jan. 1, 1917, to Dec. 31, 1917, Radium **2**: 49 (July) 1918.

7. Jackson, Chevalier: Peroral Endoscopy and Laryngeal Surgery, St. Louis, the Laryngoscope Company, 1915, p. 452.

8. Hanford, C. W.: Personal communication to the authors.

9. Abbe, Robert: The Present Estimate of the Value of Radium in Surgery, Med. Rec. **86**: 279 (Aug. 15) 1914.

* Read before the Mississippi Valley Medical Association, Louisville, Ky., Oct. 23, 1919.

* Owing to lack of space, this article is abbreviated by the omission of several case reports. The complete article appears in the reprints, a copy of which may be obtained on application to the authors.

1. Exner, A.: Ueber die Behandlung von Oesophagus-Karzinomen mit Radiumstrahlen, Wien. klin. Wchnschr. **17**: 96 (Jan.) 1904.

2. Einhorn, Max: Observations on Radium, Med. Rec. **66**: 164 (July 30) 1904.

the patient is alive and well nine years after treatment.¹⁰ At first sight it would seem that radium should be equally effective in the treatment of cancer of the esophagus. The treatment of cancer of the esophagus, however, is a more difficult matter. The problem resolves itself into a question of the effective irradiation of the lesion without harm to contiguous normal tissue or stimulation of any portion of the growth, and is naturally connected with the matter of dosage and the mechanics of application.

The beneficial action of radium on malignant tissue is due to its selective retrogressive action on the cancer cell when used in a dosage still not harmful to normal tissue. When one is attempting to utilize this principle in the practical therapeutic use of radium, certain difficulties are encountered. First, what may be termed the coefficient of tolerance of normal as compared to

pathologic tissue is not as great as would be ideal, and second, the devitalizing action of radium on malignant tissue rapidly decreases with its distance from such tissue. This decrease is approximately as the square of the distance. The thickness of a malignant tumor not being known, it follows that it is desirable to use as strong a dose as will be tolerated by surrounding normal tissue incidentally exposed to its action. In cancer of the uterus, conditions are maximally favorable, as it is possible on account of anatomic conditions to irradiate, in the center of a mass, the cancer-infiltrated uterus. Even if normal uterine tissue is injured, surrounding structures and reactions are such that protection is developed. The beneficial results of radium treatment in uterine carcinoma are due to the fact that under such conditions large dosage can be used. To cite another instance of effective radium therapeutics in which other conditions make possible other technical procedures, in superficial carcinoma, as of the lip, relatively large doses of radium can be utilized through centralization of application and protection of normal surrounding tissues by filters. The problem offered by carcinoma of the esophagus is quite different from that of other malignant conditions in which favorable results have been obtained. We have to do with a tumor whose exact thickness is unknown and usually not uniform. Not only is there no surrounding tissue of a protective nature, but instead, the thin-walled esophagus is in contact with vital structures whose devitalization may lead to ulceration and perforation. The situation of

cancer of the esophagus renders exact centralization of application and protective procedures mechanically difficult.

There is as yet no accepted criterion as to the amount of irradiation that the normal esophagus will tolerate. While this would at first thought suggest a safely minimum dose, it must be recalled that if benefit is to be derived the dose must be large enough to be definitely active throughout the entire tumor, because smaller doses, while favorably affecting immediately contiguous malignant tissue, may reach more distant portions of the growth so weakened as to be stimulating rather than inhibiting. If there is to be a prospect of a cure of the disease, it would seem dependent on a considerable dose being employed. The situation as regards cancer of the esophagus is not one that indicates temporizing. The disease, saving possibly a rare

surgical cure, is fatal, and its course is attended by suffering and a distressing lessening of morale. If in any condition a treatment embodying an element of risk is justifiable, it is so in this instance. It would seem that the maximum dose compatible with a fair degree of safety must be conceded as the primary requisite. The problem secondarily is one of precise application and protection. Regarding the first difficulty, it is hoped that this presentation may offer aid; of the second, it less definitely suggests possible help.

Requisites to the successful emplacement and continuous application of radium in cancer of the esophagus are: (1) a knowledge of the location and physical peculiarities of the tumor and the resulting stricture, especially as to location, extent, direction, and the degree of stenosis; (2) a

means of effective and nontraumatizing canalization of the cancerous stricture; (3) a mechanical means of maintaining the radium in direct application with the tumor; (4) a ready means of frequent observation as to the position of the radium during the period of treatment, and (5) a careful selection as to dose, filtration, and frequency of treatment guided by such experience as we have and the individual peculiarities of the case.

Esophagoscopy has heretofore been utilized by some to accomplish certain of these ends. Esophagoscopy plus careful measurement will ascertain the location of the proximal portion of the tumor. Sounding by olive tip bougies or gastrostomy will serve to locate its probable distal boundary and give a general idea of the luminal inequalities of the stricture and determine its degree. Esophagoscopy can through recovery of

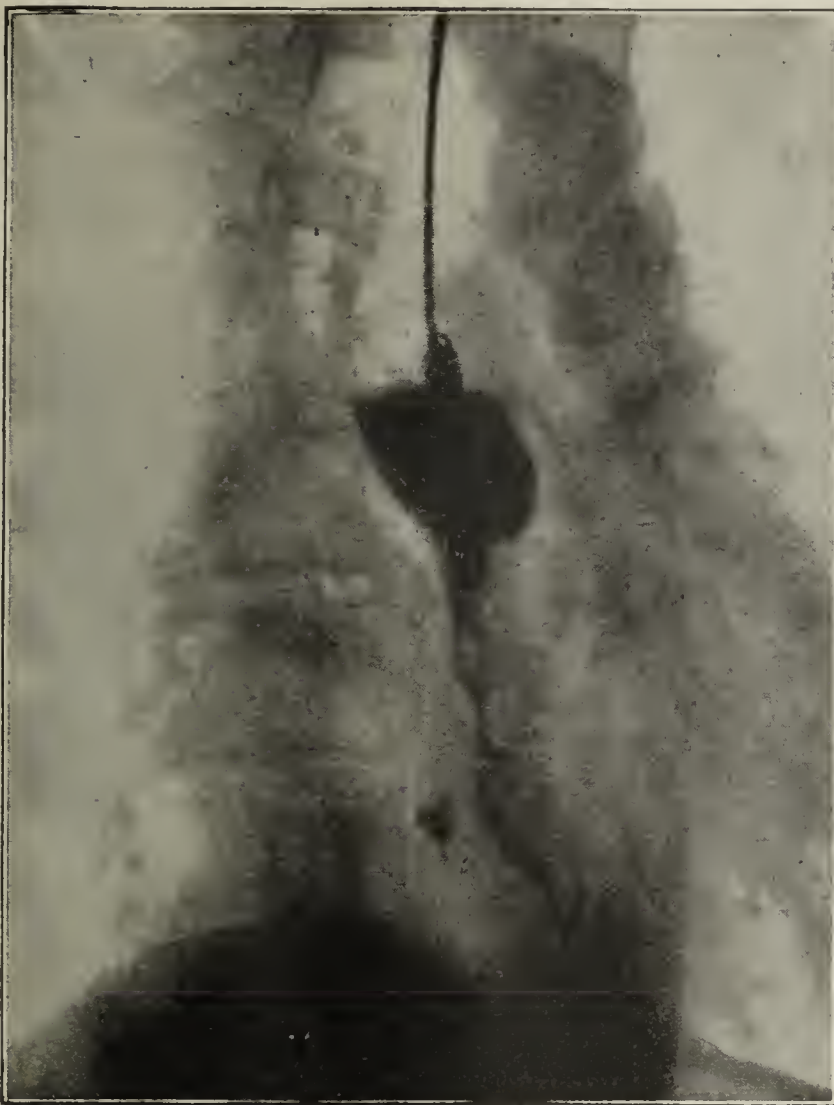


Fig. 2.—The radium-bearing capsule is shown just canalizing the upper reaches of the cancerous stricture.

means of effective and nontraumatizing canalization of the cancerous stricture; (3) a mechanical means of maintaining the radium in direct application with the tumor; (4) a ready means of frequent observation as to the position of the radium during the period of treatment, and (5) a careful selection as to dose, filtration, and frequency of treatment guided by such experience as we have and the individual peculiarities of the case.

¹⁰ The patient still remained well in October, 1919, ten years after the initial treatment (personal communication to the authors).

tissue establish the diagnosis, though not admirably according to present surgical teaching. Esophagoscopy might serve to map out the topography of the stricture in certain unusual instances in which it was not so great but that it could be canalized by the esophagoscope. It will also serve as a means of emplacing radium, at least within the upper reaches of the cancerous stricture. Esophagoscopy can best determine tissue reaction after a radium treatment. The procedure has as its disadvantages those natural to such an instrumentation. In most instances it cannot give a definite knowledge of tumor topography but only of the proximal end of the stricture. It furnishes no means of ascertaining the permanence of location of the radium after it is initially placed without frequent instrumentation, and then no clue as to its location and relation to the tumor when it is necessary to place it below the initial stricture, as is frequently the case.

The roentgen ray has advantages over esophagoscopy for certain of the purposes in question, and may be successfully utilized to serve ends impossible by it, especially in that it furnishes means of frequent and convenient observation as to the location of the radium in any level of the stricture during the entire treatment. The foregoing is a very important matter, as it has been found that the radium terminal almost invariably sooner or later slips into lower portions of the stricture or beyond it, less frequently above into the dilated esophagus. Again, the use of fluoroscopy during the emplacement of the radium capsule is an effective means of aiding in the canalization of the cancerous stricture visualized by the patient's having just previously swallowed a small amount of bismuth in suspension.¹¹ It is frequently an advantage to bend the

wire carrier slightly at its attachment to the radium capsule so that the terminal is deflected at a slight angle. Torsion on the oral end of the wire applicator, and the placing of the patient at different angles will make it possible to guide the terminal directly into the stricture. In certain cases of marked cancerous stenosis, the tip of the radium terminal may be made to engage within the proximal portion of the stricture; but further progress is prevented by the degree of narrowing. In such instance, under careful fluoroscopic control the tip may be left engaged in the stricture, the walls of the esophagus above being protected by the distention of the esophagus proximal to the

stricture by a bismuth mixture. It will usually be found on later observations that, owing to the continuous gentle pressure exerted by the spring of the wire applicator, the radium gradually canalizes the lower levels of the stricture. In case the stricture is not visualized at any time, it may be made apparent by the simple expedient of having the patient swallow a teaspoonful or two of bismuth medium alongside the wire applicator.

It is difficult to understand how any approximation of the radium to the body of the tumor can be effected by other than some sort of visually controlled method; a matter that is fundamental and the importance of which is becoming more and more recognized. In many cases the strictured lumen is devious, and opens from the proximally dilated esophagus to one side. It is remarkable what aid can be obtained by fluoros-

copy. A threatened false passage is strikingly indicated. The cause of failure to canalize any portion of the stricture is shown to be usually due to impingement of the terminal against the wall of the stricture on account of an abrupt curve rather than to a local narrowing. Plates taken and developed between efforts at introduction and as a record of emplacement at any given time are helpful.

While less appealing, the roentgen-ray diagnosis of cancer of the esophagus in expert hands, taken in conjunction with the clinical history, will probably attain as high a percentage of accuracies as can be realized by esophagoscopy. Occasionally the roentgen ray serves to visualize the actual shadow of the esophageal tumor silhouetted between those of the heart and the spine. If a technic can be evolved that will do this with any constancy and especially in other than the diagonal poses, it will be of great

advantage, as the actual extent and various thicknesses of the mass can be determined and the radium not only more effectively placed but a basis established for control of tissue-protective unilateral filtration, this with the view of using larger dosage when conditions make it desirable. Most hopeful in this regard is a technic developed along the same lines as in gallbladder work, namely, strong fixation of the patient, the use of small diaphragms, extreme care as to the suspension of respiration, and a careful technic of exposure adapted to the individual patient. Fast screens are best used to obtain speed in exposure necessitated on account of transmitted movement from the heart's impulse. The roentgen ray also serves as a means of determining the results of treatment, so far as the degree of stric-

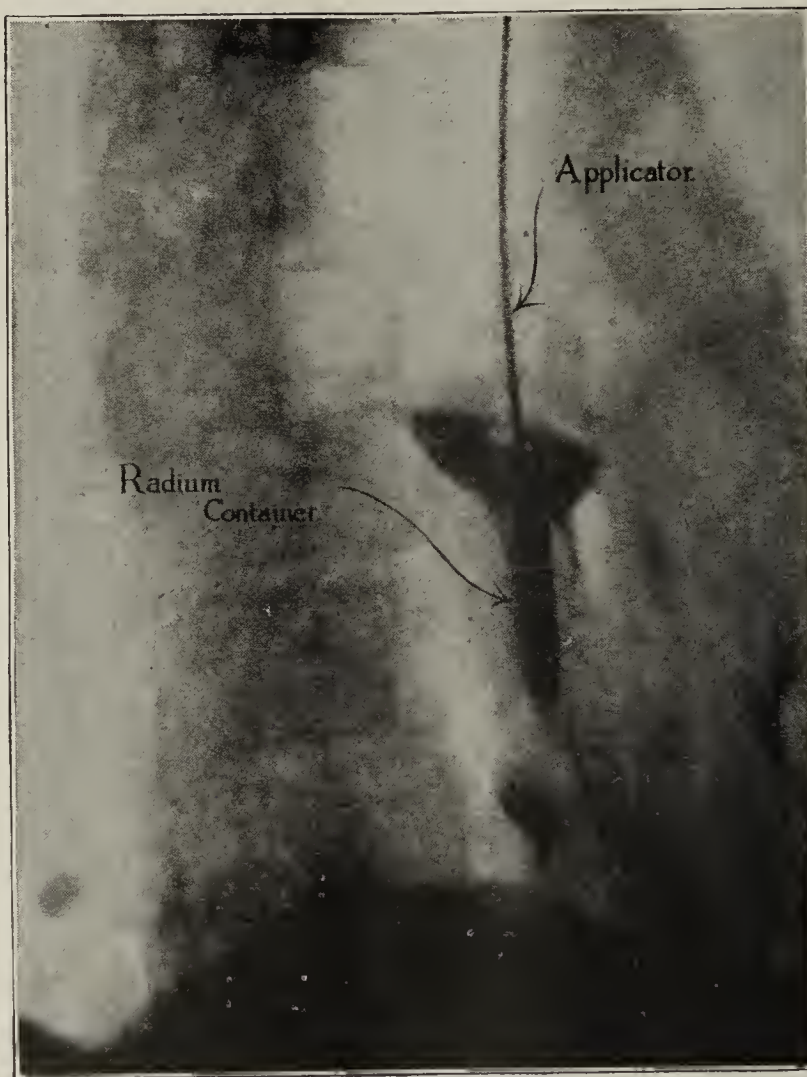


Fig. 3.—The radium capsule is shown as left in situ during the first half of the six-hour treatment. Note that the normal esophagus above the cancerous stricture is protected by the distention of the dilated esophagus. The capsule is left in this position for three hours, and then further introduced to treat the lower half of the lesion, as shown in Figure 4, for the remaining three hours.

11. Bismuth in small amounts gives a slightly heavier shadow than does barium.

ture and to some extent of the change in the tumor is concerned. The roentgen-ray control of irradiation of cancer of the esophagus has all the unique advantages and gives the peculiar satisfaction and surety that is characteristic of the use of the roentgen ray elsewhere. As an aside, the roentgen-ray method of control may be used in other esophageal instrumentations, such as the divulsion of strictures with opaque bougies and as one of us (Mills) has used it for some two years in the treatment of cardiospasm with a special bismuth-containing lead-mounted dilator. The dilatation of cardiospasm under roentgenoscopic control is a revelation.¹² In comparing esophagoscopy and the roentgen ray for the control of the treatment under discussion, it is not implied that either alone should be relied on if advantages possessed by either method are unique for certain purposes. Both should be used according to the indications.

SUMMARY OF TECHNIC

An initial roentgen-ray study of the position and physical peculiarities of the tumor is made by both screen and plate, a simple mixture of bismuth subcarbonate in water being used as a means of visualization, and, when the stricture is not great, bismuth suspended in artificial buttermilk. If plates are taken an instant¹³ after the patient is told to swallow a mouthful of the barium-containing substance previously held in the mouth while in pose, the stricture and distal esophagus will usually be visualized. If the stricture is of high grade, the act of swallowing tends to force through it bismuth previously swallowed and retained above the stricture. When the stricture is less marked, the fact that the contrast substance does not pass through the cardia as rapidly as usual, possibly through inhibition in the conductivity of the nervous impulses governing peristalsis, is a help in visualizing the lower esophagus.

The patient is given a preliminary injection of morphin and atropin one-half hour before the radium

treatment is begun, the dose obviously as indicated. It is impossible to overestimate the value of this procedure in quieting the patient and making the endurance of a six-hour application possible without undue suffering. Many patients sleep through most of the treatment. Occasionally, in marked strictures, a spoonful of olive oil one-half hour before treatment is helpful in relaxing secondary spasm. Preliminary bouginage is occasionally useful. The radium enclosed in a container composed of German silver 0.5 mm. in thickness and further filtered with 0.5 mm. of brass and a thickness of rubber is mounted as a terminal on a slightly springy drawn silver wire encased in a rubber tube. It is introduced after the manner of an ordinary esophageal sound. A wire applicator has been used by others. In certain cases in which the abdominal esophagus was involved, the radium with its filters

was encased in the end of a rather small stomach tube, as it was sometimes found that the wire carrier could not readily and safely take the rather abrupt curve of this portion of the esophagus. The wire applicator or stomach tube bearer is anchored by means of a bridle bandage about the patient's head (Fig. 5). The radium is left in situ for six hours at each initial treatment. Cases were treated on from one to seven occasions. The frequency and number of treatments and the length of other than the initial treatment was occasionally varied somewhat to meet individual indications; also as much as thought advisable in an effort to determine the most effective procedure. Nearly all our work has been done with 50 mg. of radium element. It is probable that the use of radium emanation not available to us would have advantages over the element on account of the more advantageous form

of applicator that it would permit. Our greatest difficulty has been due to the thickness, length and rigidity of the radium-containing receptacle with its filters, which precluded satisfactory introduction in certain marked and irregular strictures.

The immediate results of the treatment were in most instances beneficial, sometimes strikingly so as to the relief of the dysphagia. No case treated failed of improvement in this regard. The improvement in several was almost immediate, within twenty-four hours, possibly owing in part to a bouginage action of the radium capsule. A gain in weight occurred in most cases. Curiously, the results of treatment are not reflected by a reduction in the local esophageal deformity and stenosis commensurable with the functional improvement—possibly owing to loss of local distensi-



Fig. 4.—The radium capsule is here shown in the lower half of the cancerous stricture, where it is left in place during the second three hours of the treatment. Were esophagoscopy alone used, such an emplacement would be impossible of observation.

12. Fluoroscopic control of cardiospasm dilatation shows that it is difficult to cause the dilator to straddle the site of spasm, and still more difficult to cause it to remain in place during the divulsion. It also shows that the best way to accomplish this is to introduce the dilator beyond the hiatus oesophagi, to distend it very slightly, and then pull it into the area of the stricture and, while holding it in place with considerable traction, inflate still more. The roentgen ray also strikingly shows that the standard dilator is much greater in diameter than is necessary. The spastic area is never dilated to anything like the full diameter of the dilator at the time pain is elicited. Judging by those divulsions that have been done under fluoroscopic observation, it is difficult to understand how full dilatation of the spastic area could be accomplished without danger of rupture of the esophagus. When full dilatation is accomplished, the dilator is probably either above or below the seat of spasm. The moderate distention referred to above is entirely adequate to accomplish the most beneficial results.

13. This time varies somewhat according to conditions in the individual case, but is usually about three seconds.

bility. In several cases there was a return in a degree of the dysphagia, usually relieved by another treatment. The reestablished dysphagia in some instances seemed of the nature of intermittent spasm. The late return



Fig. 5.—Method of fixation of the radium carrier by means of a bridle bandage.

of the dysphagia may be due in some cases to secondary contractures. It may be mentioned that radium burns result in dense scar. Perhaps, with added knowledge, late careful dilatation by bougies might be beneficial; we have not attempted it.

The propriety of reporting and reviewing a small series of cases under observation only a short time may justly be questioned. On the other hand, we feel that this is advisable under the circumstances. If workers delay reporting cases until several years have passed and final conclusion as to the value of the method is reached, valuable time will, indeed, be lost. We can at least profit by one another's disasters, which are usually prompt. The matter of dosage, too, can be helpfully influenced if cases showing immediate beneficial results are reported. Again, carcinoma of the esophagus is relatively rare. If we delay until any considerable series of radium-treated cases is accumulated, the development of the method will be prolonged. A presentation of cases, even with definite limitations, will help develop an interest in the method and serve as an incentive to earlier diagnosis which is, after all, the prime requisite on which our hopes are built.

Our own tentative results may be thus summarized: Eleven cases were treated. No case was treated which might be considered a cure, though one patient is alive and in good shape eighteen months after the first treatment without evidence of metastasis. The esophagoscope shows no appearance suggesting present carcinoma. Others have been under observation less than a year. No case treated could be considered early, and most of them were frankly advanced. There was but one case in which there was evidence of metastases, and in that instance there was involvement of the stomach as well as the abdominal esophagus. Five patients have died, one possibly of perforation

resulting from the treatment. In six cases the dysphagia has been strikingly improved. In four additional cases the improvement in swallowing has been definite, though intermittent. Seven cases were improved as to general condition. In certain of these generally improved cases the result was so striking as to indicate that the treatment is strongly advisable even when there is no possibility of a cure. There seems no question but that life is prolonged by the treatment. The patients are usually enabled to continue their work. Not the least of the benefits is the improvement in morale. The work, instead of being gruesome, is made gratifying by the pitiful appreciation of the patients.

A mention of the results of others in the treatment of cancer of the esophagus by radium is fitting, though these instances are few. In Exner's cases, favorable results were considered indicated by decrease in the degree of stenosis as determined by bouginage. In Einhorn's series, the majority of cases were palliatively improved, and decrease in the local lesion was considered indicated in certain instances by increased distance of the stricture from the incisors. Janeway, Barringer and Failla may be thus quoted: "The series of cases reported by no means justifies a gloomy outlook. Cases too late for a cure by radium can receive palliative relief." But one patient was sufficiently benefited to encourage belief in complete retrogression (this case had been under observation a little more than a year). Five cases were definitely improved. One patient who

improved had an advanced lesion at the time treatment was begun. Fifteen patients were not improved; the authors felt on account of the advanced state of the lesion and the too frequent treatments. Pinch reports a case of epithelioma of the esophagus treated by radium. The patient lived one year, dying from metastases. As far as the local condition was concerned, the treatment was eminently satisfactory: "infinitely better than could have been obtained by gastrostomy." Chevalier Jackson mentions having treated cases of cancer of the esophagus by radium and states

that he has seen marked favorable effects in inoperable cases, but so far no cures. He prefers to wait several years before passing judgment. He speaks of the help-



Fig. 6.—Distention of the normal esophagus during the swallowing of one large mouthful of contrast substance. The plate is taken during an act of deglutition with a very short exposure. Note how any small defect must be evident if present.

fulness of surgery in the condition, and of having seen no case amenable to operative treatment in which he would consider the use of radium justified. He mentions Mr. Walter G. Howarth as obtaining excellent results by the method. Hanford obtained material benefit in one of the two cases treated by him.

The question of the treatment of cancer of the esophagus by radium versus surgical treatment should be mentioned. If the lesion is definitely early and favorably situated and the rare surgical experience available, surgery may be the method of choice. Actually, such a combination will rarely occur. Possibly as the importance of early diagnosis becomes more appreciated and the surgery of the lesion is developed, operative treatment will be more frequent.

As to palliative treatment, the indications are that radium therapy is the best that has yet been suggested; at least, patients may live to die of less agonizing

not only in the treatment of cancer of the esophagus by radium, but also in other esophageal instrumentalizations.

REPORT OF CASES

CASE 2.—Mr. L. C. B., alive eighteen months after the first treatment, was in fairly good condition when first seen; he was 20 pounds underweight. The case was moderately advanced; he had been sick six months. The lesion was moderately limited, affecting the lower esophagus, with moderate stenosis. Marked improvement followed the treatments, especially the third at five months. The weight increased from 121 pounds to 130 pounds in thirteen months, yet there was only moderate improvement in the dysphagia. The fourteenth, fifteenth and sixteenth months were bad on account of intermittent dysphagia, symptomatically suggestive of cardiospasm, though the roentgen-ray findings were against such. During the sixteenth month, there was a sudden improvement in swallowing, there being practically no difficulty. The patient takes a general diet, including such articles as turkey, cranberries, sardines, and pork tenderloin. Roentgen ray reveals definite improvement in esophageal canalization, though still a narrow area. Esophagoscopy reveals local narrowing with semilunar-like horizontal bands only in the strictured area. The patient is holding his weight at 113 pounds and is working as a porter. Four radium treatments were given, two the first five days, the third after five months, and the fourth in the fifteenth month. The treatments were well tolerated. This case may be classified as highly successful, with palliative if not curative result. The lesion is demonstrably improved, as visualized by roentgen ray. The dysphagia has greatly improved. The result has been so good as to make diagnosis questionable, though there was no other



Fig. 7.—How the esophagus distal to a quite marked stricture is filled during the act of swallowing. The defect in this instance is that of a fairly early carcinoma. Note how sharply its limitations are shown. The shadow of the tumor itself is also apparent.

consequences than result from esophageal stenosis. From a consideration of all factors, the possibility of the ultimate cure of certain cases of cancer of the esophagus by radium must be held a possibility.

The method just described would undoubtedly be more effective if patients could be secured in an early stage of the disease, rather than, as in our cases, when the condition was advanced and even desperate. It is sad that it must almost seem a part of the classical anamnesis of cancer of the esophagus and stomach to have the patient relate that he was at first seen by one or more physicians who gave him medicine without an examination. Cancer of the esophagus can be diagnosed in a few seconds by the roentgen ray. It seems amenable to radium therapy in the same way as does cancer of the mouth, which it histologically resembles. If the cooperation of the profession can be secured and the importance of early diagnosis realized by them, it will be a great advantage.

CONCLUSIONS

The method of treating cancer of the esophagus by radium is hopeful. The most encouraging feature in the small series of cases treated is the relief of the dysphagia. The roentgen ray gives valuable help through establishing a knowledge of the peculiarities of the individual lesion, as an aid in the emplacement of the radium and in the control of its localization. Its use suggests other possibilities as to its employment.

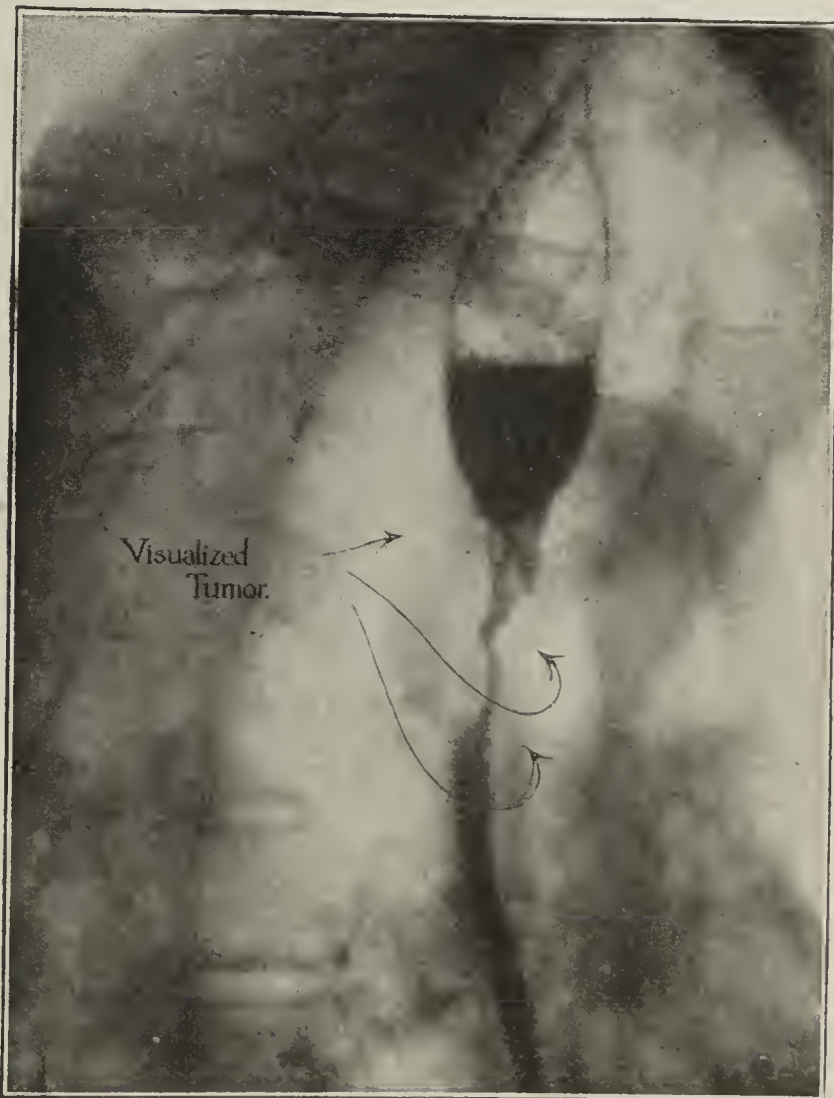


Fig. 8.—Shadow of the cancer itself asymmetrically surrounding the defective portion of the esophagus and probably extending below on its anterior wall.

reason to suspect other than carcinoma. The Wassermann test was three times negative. There was no previous history of dysphagia or esophageal traumatism.

CASE 3.—Mr. P. M. died suddenly four months after the first treatment and four weeks after the last treatment,

apparently in profound shock; he was cyanotic, etc.; the trouble began with a chill; he was able to take nourishment. Otherwise, there was nothing to suggest perforation; he had definitely improved, and was at work. When first seen he was in fair shape, but was 20 pounds underweight. There was a moderately early lesion at the juncture of the second and lower thirds of the esophagus, with moderately marked stenosis. Four radium treatments were given, with only slight temporary improvement in the dysphagia, yet the patient's general condition definitely improved. At the end of six weeks, his condition was worse. His weight diminished from 124½ pounds to 112 pounds. Bougie dilatation was necessary before the emplacement of radium. Three additional radium treatments were followed by marked improvement in dysphagia, with the patient regaining weight to 125 pounds and apparently in good shape. He worked as a laborer to the end. The treatments were well tolerated. This case may be classified as having a moderately successful palliative result, the symptomatic improvement being greater than roentgen-ray findings indicated. This patient's death was possibly due to perforation.

CASE 7.—Mr. C. H. is now alive, six months after the first treatment. His general condition when first seen was fairly good. It was a moderately advanced case. He had been sick four weeks, and was 25 pounds underweight. There was a fairly extensive lesion at the juncture of the upper and middle thirds of the esophagus. There was a moderately marked stenosis. The patient's general condition immediately improved markedly. He gained 10 pounds during the first month. There was a marked improvement in dysphagia for two months. During the third month there was a slight recurrence of dysphagia, though he was able to eat rice, carrots and cabbage. He lost 4 pounds in the third month, though he still weighed 6 pounds more than when first treated. The weight loss was possibly due to inability to obtain suitable diet. He was not working regularly, but was able to do light work. Two radium treatments over a period of three days were given, the first irradiating the upper half of the stricture, the second the lower half; a third radium treatment at three months and a fourth at five months after the initial treatments were given. At present there is rather more dysphagia than after the initial treatment, probably because it has never been possible to canalize the lower zones of the stricture on account of an unusual curve. At present he is able to eat a semisolid diet, oat meal, milk toast, rice, etc. The treatments were well tolerated. The patient's general condition is fairly good. This case may be classified as having a definitely successful palliative result. Roentgenoscopy indicates improvement in the lesion, especially as to canalizability, though there is still definite evidence of stricture.

CASE 8.—Mr. L. J. C., who is still alive, six months after the first treatment, was in fair condition when first seen. There was quite a limited lesion involving the abdominal esophagus. Probably this was a fairly early case, the patient being sick only two months, with a 40 pound weight loss. There was only slight stenosis. There was a marked improvement in his general condition. He gained 12 pounds in the first three months. There is absolutely no dysphagia at present. He is working steadily, though he was not able to before receiving treatment. Two treatments were given, the

second at three months. The radium was encased in the terminal end of a stomach tube (on account of the curve of the abdominal esophagus). There was no difficulty in retention in situ. The treatments were well tolerated. The general result may be classified as good. There is practically entire relief of dysphagia. The condition suggests a possibility of ultimate cure. The roentgen ray reveals structural improvement in the lesion and good canalization of the involved esophagus. It is a question as to whether he should not have been more vigorously treated initially or subsequently.

Wall Building.

TUMORS OF THE RENAL PELVIS

WILLIAM E. STEVENS, M.D.

SAN FRANCISCO

Papillomas, although not uncommon in the bladder, are seldom found in the pelvis of the kidney, and comparatively few cases have been reported in the literature. The case that I present is unique in that the tumor of the pelvis was apparently secondary to the

bladder growth; at any rate, no symptoms of renal involvement occurred for more than one and a half years after the appearance and destruction of the bladder papilloma. I have not been able to find a similar case recorded in the literature. Occurring primarily in the pelvis of the kidney, the grafts are supposed to be carried by the urine to the lower portion of the urinary tract, such as the ureter and bladder. In my



Papillary epithelioma of the renal pelvis.

case the late involvement of the pelvis is more difficult of explanation. Possibly extension occurred through the lymphatics. Of interest also is the fact that in cases previously reported this condition has been found only in patients under 60 years of age, and it has usually been multiple.

REPORT OF CASE

M. S., a man, aged 70, unmarried, bartender, had suffered from slight pain in the right lumbar region during the last year. He had noticed blood in the urine for the last twenty-four hours. His father died of "prostate gland trouble" at 70, his mother of diabetes at 73, a brother of pulmonary tuberculosis at 40, and his other brother of "rheumatism," at 56. He had measles when a child, gonorrhea in 1871 and in 1904, a genital sore in 1907, and dysentery in 1899. In 1913 he noticed blood in the urine, and was troubled with frequent urination. Cystoscopy at this time revealed a pedunculated papilloma to the left of the left ureteral orifice. The symptoms disappeared following removal of the tumor with snare and cautery. Nineteen months later, January, 1915, he was in the hospital for two weeks because of severe pain in the right kidney region. His urine contained a trace of albumin, many hyaline, granular and cellular casts and some pus, but no blood cells at the time. Catheterization of the ureters revealed a few pus cells in the urine of the right kidney. The symp-

toms disappeared following rest in bed. Three years later, April, 1918, he entered the hospital because of blood in the urine. Examination of the urine at this time disclosed many blood cells, a trace of albumin and a few pus cells, but no casts. Cystoscopy revealed an inflamed bladder mucosa and somewhat bloody fluid escaping from the right ureteral orifice. Comparative functional kidney tests were negative. The urine was free from blood at the end of a week, and the patient left the hospital. Six months later he reentered, stating that he had suffered from slight pain in the right lumbar region for the last year and that he had noticed blood in the urine for the last twenty-four hours. Cystoscopy again revealed bloody fluid escaping from the right ureteral orifice. The bladder mucosa was normal. Functional kidney tests gave diminished values on the right side. The wax-tipped catheter showed no evidence of calculi. Pyelography demonstrated a right kidney pelvis somewhat elongated laterally and the ureter entering the pelvis at a right angle. A diagnosis of tumor of the kidney was made, and operation was advised and accepted. A large papilloma the size of a walnut was found when the pelvis was opened. No evidence of ureteral involvement was present.

COMMENT

As in vesical growths, two types of papilloma of the renal pelvis are recognized, the benign, which is usually pedunculated, and the malignant, which is usually sessile. The former has the characteristic tendency to assume the latter type.

Etiology.—Several theories have been advanced to explain the etiology of these tumors. The fact that stone has occurred as a complication in 15 per cent. of the cases reported has led to the belief that the traumatism associated with this condition is often responsible for the epithelial proliferation. Morogna, quoted by Judd, believes that they are due to aberrant ectodermal inclusions during the period of development, the growth of which has been excited by some inflammatory process.

Symptoms.—Unless because of the position or size of the tumor obstruction is present, the symptoms most commonly noted are hematuria, intermittent in character, and some frequency of urination. In the presence of obstruction, pain is a prominent symptom.

Diagnosis.—If a history of vesical papilloma is present, pelvic tumors should be easier of diagnosis in the early stage than tumors of the parenchyma. Cystoscopy often reveals blood ejected from the corresponding ureteral orifice, and pyelography will disclose a deformity of the renal pelvis. If obstruction exists in addition to pain, hematuria will often be found, and a diminution in the size of the kidney following the emptying of the pelvis will be observed.

Differential Diagnosis.—Roentgenography and the wax-tipped catheter are of value in excluding calculi. The absence of tubercle bacilli and pus cells from the urine, together with a negative roentgenogram, exclude tuberculosis, and the pyelogram demonstrates a normal pelvic outline in the renal varix, so-called essential hematuria and nephritis. The intermittent character of the bleeding serves to differentiate pelvic tumors from those of the parenchyma of the kidney, as in the latter, bleeding is usually continuous. The history of bladder and especially ureteral papilloma justifies a strong suspicion of pelvic involvement.

Treatment.—Because of the frequency of recurrences and the tendency of the benign type toward malignancy, nephrectomy is indicated in every case of papilloma of the pelvis of the kidney. As the ureters are involved in the majority of cases, ureterectomy is also advisable.

Shreve Building.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

CELLUFLOUR.—Cellulose Flour-D. C. L.—Commercially pure cellulose in the form of flour.

Actions and Uses.—CellufLOUR is used as a means of filling out reduced diets as in the Allen treatment for diabetics. It is a nonnutritive food substitute used to give bulk to foods, thus serving to satisfy hunger without furnishing nourishment.

Dosage.—CellufLOUR, after admixture with bran, baking powder, eggs, "India gum," or liquid petrolatum in varying proportions may be used for the preparation of imitation bread, muffins, cookies, griddle cakes, pie-crust, etc. These preparations may be seasoned with salt, spices or saccharin.

Manufactured by the Dietetic Cellulose Laboratory, Chicago. No U. S. patent. U. S. trademark applied for.

Purified and bleached wood pulp, straw pulp or cotton fibre is further treated to facilitate grinding to flour.

CellufLOUR is white to grayish white in color; odorless and tasteless.

DIAPROTEIN PREPARED CASEIN FLOUR.—Casein to which has been added 4 per cent. of a leavening mixture composed of sodium bicarbonate, monocalcium phosphate and sodium aluminum sulphate.

Actions and Uses.—This flour is employed in cases such as diabetes, etc., in which carbohydrates are contraindicated.

Dosage.—Diaprotein prepared Casein Flour is said to be adapted for the preparation of bread, cake, muffins, biscuits, etc.

Manufactured by the Diaprotein Company, Chicago. No U. S. patent. U. S. trademark applied for.

BENZOCAINE (See New and Nonofficial Remedies, 1920, p. 33).

Anesthesin-Abbott.—A brand of benzocaine complying with the N. N. R. standards.

Manufactured by the Abbott Laboratories, Chicago. No U. S. patent or trademark.

Instruction in the History of Medicine at Medical Schools.—Haberlin (*Deutsch. med. Wchnschr.*, Dec. 18, 1919) recommends that courses in the history of medicine be established in all medical schools and that students should be required to take at least one full semester course. No one can be an investigator in the true sense of the word in the field of any science who does not inform himself as to what has been accomplished in his field of study before his own advent on the scene. In our own times, those empirics who trust to luck and have no regular plan of investigation that they follow are all too well known. Only through a knowledge of history can we form a certain judgment in regard to the many doctrines and therapeutic methods that spring up only to disappear again soon. As Vetter emphasized: "History alone encourages us to enter on a doubtful experiment, comforts us if we fail, warns us of the results of error, which so often, committed by a single person, is expiated and cursed by millions of people. The history of error is, then, the teacher of truth trained in the school of misfortune." The history of medicine, as of any science, brings before our eyes the struggles and strivings of thousands and thousands of human beings who have sought to discover the laws of almighty Nature and to use their thus acquired knowledge for the welfare and blessing of suffering humanity. It leads the student away from the realistic employments of the medical profession as found at the bedside of patients, in the laboratory and at the dissecting table; lifts his mind to that which is ideal and humanitarian, and fills his heart with noble enthusiasm for the dignity of his calling and the welfare of humanity.

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SATURDAY, JUNE 5, 1920

THE CHEMOTHERAPY OF CHAULMOOGRA . OIL

Although many innovations have been attempted in the empiric treatment of leprosy, the use of chaulmoogra oil seems to have survived that of almost all the other "herbaceous remedies." This product is at present extensively employed and seems to produce amelioration in the majority of lepers to whom it has been administered persistently. With this record of therapeutic promise it was natural to expect a greater refinement of the crude oil which would perhaps result in isolation of the "active principle," or at any rate furnish a product more easily administered for remedial purposes by other than oral channels. Various fatty acids or mixtures have been separated from chaulmoogra oil within the last thirty years and administered by mouth to lepers, with indifferent success. In 1916 and subsequently, Sir Leonard Rogers¹ in India first attempted the therapeutic use of some of the fatty acids of chaulmoogra oil in subcutaneous and intravenous medication, employing them in the form of their sodium salts as soluble soaps.

Last year, considerable interest was awakened by the significant contribution of Holman and Dean² on this subject. They fractionated chaulmoogra oil by saponification; but instead of employing the undesirable soaps, they prepared the liquid ethyl esters of the fatty acids obtained from the oil. These esters are superior for subcutaneous administration. They have caused reactions in leprosy lesions with subsequent improvement; and several of the patients treated with the new products have become bacteriologically negative so that they could be paroled from segregation. Here, then, is the promise of progress, despite the fact that many new remedies have been hailed vociferously for the treatment of leprosy, only to be relegated after a brief trial to the list of forgotten medicaments.

What is the scientific explanation for the efficacy of chaulmoogra oil and its derivatives? Is the now demonstrated therapeutic action direct and bactericidal to the micro-organisms of leprosy, like that of arsphenamin on the spirochetes of syphilis, or does it act in some indirect and physiologic way to promote immunity? To these questions Walker and Sweeney³ have addressed themselves. Their investigations have demonstrated that chaulmoogra oil contains bactericidal substances that are about one hundred times more active than is phenol. The antiseptic potencies are attributable to the fatty acids of the chaulmoogric series, chaulmoogric and hydnocarpic acids, and possibly lower isomers of the series. The bactericidal action is specific for the acid-fast group of bacteria, to which the causative organism of leprosy belongs, the products being inactive against all other micro-organisms studied. It may be urged against the probability of the bactericidal property of chaulmoogra derivatives, as an explanation of therapeutic results, that their limits of potency in vitro are far below those of the therapeutic intravenous dosage in leprosy in which the drug may be calculated to exist in a dilution of 1:500,000 or greater of body weight instead of 1:100,000 found necessary in the laboratory. However, so long as the precise behavior of the fatty acids in the body is not known and the possibility of their concentration in the environment of the parasites cannot be denied, the factor of dosage need not offer a stumbling block to the hypothesis of chemotherapy offered. The drug may be stored in the tissues and thus ultimately reach a concentration essential for bactericidal action. This may explain the long time required for effective therapeutics. Or, again, the chaulmoogra products, even when present in suboptimal concentration, may inhibit or damage the lepra bacillus to a degree that renders it subject to the natural immunity responses of the host. For the present it does not seem necessary to invoke the hypothesis of special physiologic responses provoked by the introduction of the drugs.

Tuberculosis also involves the presence of acid-fast bacteria in its lesions. Hence it has been proposed to attempt for this disease a therapy similar to that of leprosy. The bactericidal action of the chaulmoogric acids against all members of the acid-fast group of bacilli, together with the clinical results obtained from their use in leprosy, as Walker and Sweeney point out, have furnished theoretical grounds for the application of the same products to the therapy of tuberculosis. The California bacteriologists have ascertained³ that the fatty acids of cod liver oil, the salts of which constitute the so-called "sodium morrhuate," do not possess the special bactericidal activity

1. Rogers, Leonard: Preliminary Note on the Use of Gynocardates Orally and Subcutaneously in Leprosy, *Lancet* **1**: 288 (Feb. 5) 1916; Leprosy Cases Treated by Sodium Gynocardate and Chaulmoogra Intravenously, *ibid.* **2**: 682 (Nov. 3) 1917; Two Years' Experience of Sodium Gynocardate and Chaulmoograte Subcutaneously and Intravenously in the Treatment of Leprosy, *Indian J. M. Res.* **5**: 277 (Oct.) 1917; *Brit. M. J.* **1**: 147 (Feb. 8) 1919.

2. Holman, H. T., and Dean, A. L.: Chaulmoogra Oil in the Treatment of Leprosy, I, Chaulmoogra Oil Mixtures; II, Fatty Acids of Chaulmoogra Oil, *J. Cutan. Dis.* **37**: 367 (June) 1919.

3. Walker, E. L., and Sweeney, M. A.: The Chemotherapeutics of the Chaulmoogric Acid Series and Other Fatty Acids in Leprosy and Tuberculosis, I, Bactericidal Action; Active Principle; Specificity, *J. Infect. Dis.* **26**: 238 (March) 1920.

of the corresponding chaulmoogric compounds, and hence cannot lay claim to a similar advantage which has been ascribed to them in the therapy of tuberculosis. The actual chemotherapeutic value of the chaulmoogric acid compounds in the treatment of infections due to the acid-fast group of bacilli, notably tuberculosis, remains to be proved by experiments on animals and then by clinical trial. It seems wise, however, to repeat the warning of Walker and Sweeney that the clinical tests of chaulmoogrates in tuberculosis should await the experimental investigations now in progress; for, as they remind us, the indiscriminate use of such drugs may arouse false hopes and be not without danger to the patients.

MORTALITY CLASSIFIED FROM A NEW STANDPOINT

One of the important advantages of well classified statistics of human mortality lies in the help they may afford toward the formulation of correct hygienic precepts. For example, a large amount of data collected in this country has been interpreted to signify that "the increase in the death rate with advancing years is not in accordance with a natural law, but the result of various factors susceptible of important modification." It is, indeed, highly imperative to establish such a contention on an incontrovertible basis. Thus, if we admit that many chronic diseases which figure prominently in middle life as causes of death are due to environmental factors, to improper living, mental and physical strain, dietary errors, and infections, a campaign of correction is eminently justified. If, on the other hand, hereditary and racial factors, the migrations of races and other essentially uncontrollable influences enter into the problem, it may be far less promising to attempt to avert conditions that are inherent and inavertible rather than acquired and remediable.

Raymond Pearl,¹ of the Department of Biometry and Vital Statistics at the Johns Hopkins University, has recently made an attempt to estimate the importance of some of the biologic factors that enter into mortality. Instead of classifying deaths according to special pathologic causations, such as bacterial infections, metabolic upsets and mechanical disturbances, he has arranged a large number of mortality statistics on the basis of organologic breakdown. In his own words, "the underlying idea of this rearrangement of the causes of death is to put all those lethal entities together which bring about death because of the functional organic breakdown of the same general organ system. The cause of this functional breakdown may be anything whatever in the range of pathology."

When figures showing the relative importance of ten different organ systems in human mortality were arranged for the United States registration area, for

England and Wales, and for São Paulo, Brazil, the relative order of importance of the parts of the organism that first cease to function and cause death was essentially the same in the three cases. Pearl's data show that in the United States, during the period investigated, more deaths resulted from the breakdown of the respiratory system than from the failure of any other organ system of the body. The same thing is true of England and Wales. In São Paulo the alimentary tract takes first position, with the respiratory system a rather close second. The tremendous death rate in São Paulo chargeable to the alimentary tract is chiefly due to the relatively enormous number of deaths of infants under 2 from diarrhea and enteritis. Nothing approaching such a rate for this category as São Paulo shows is known in this country or in England. Pearl points out that in all three localities studied, the respiratory system and the alimentary tract together account for rather more than half of all the deaths biologically classifiable. These are the two organ systems which, while physically internal, come in contact directly at their surfaces with environmental entities (water, food and air) with all their bacterial contamination.

The alimentary canal and the lungs are, in truth, only invaginated surfaces of the body. Along with the skin, they must share the attack of environmental invaders; but the skin, having special protective layers, is naturally more resistant than the mucosa of the other surfaces mentioned. When the protective resistance of these external surfaces of the body fails, the blood and the circulatory system become invaded; hence they stand next in the order of importance in functional breakdown. The complex nervous system is responsible for more deaths than is the excretory system to which the kidneys belong.

Arrangement of the organologically classifiable death rates under the primary germ layers (ectoderm, mesoderm and endoderm), from which the organs concerned develop embryologically, shows that more than half of all biologically classifiable deaths result from a breakdown and failure further to function of organs arising from the endoderm in their embryologic development, while only 8 to 13 per cent. can be regarded as a result of breakdown of organ systems arising from the ectoderm. The remaining 30 to 35 per cent. of the mortality results from failure of mesodermic organs. The fact that mortality grouped in classes that rest on such a biologic basis is, according to Pearl, strikingly similar in such widely dissimilar environments as the United States, England and southern Brazil, is significant. It raises the question as to whether, after all, environment is the predominant factor in human mortality. It is too early to speculate on the hygienic significance of this tentative evidence. It is interesting to note, however, that efforts to improve the public health have of late been directed against affections involving the most prominent groups of organs, the respiratory system

1. Pearl, Raymond: On the Embryological Basis of Human Mortality, *Proc. Nat. Acad. Sc.* 5: 593 (Dec.) 1919.

and the alimentary tract, for which failure of function is a cause of death. In the first of these groups, in which phthisis, lobar pneumonia and bronchitis belong, substantial progress has already been made.

CHARACTERISTICS OF BENCE-JONES PROTEIN

Although many years have elapsed since Bence-Jones first described the appearance of what was long assumed to be an albumose in the urine in certain pathologic cases, the nature of the nitrogenous compound thus excreted has by no means yet been clearly elucidated. The designation "albumose" was due to the peculiar reactions of the substance which seemed to distinguish it from the proteins usually found in pathologic urine. Thus, the Bence-Jones substance is precipitated by salt and heat, much as are coagulable proteins; but frequently it will redissolve when the temperature is further raised, and will reprecipitate on cooling. In view of this, at one time the opinion was ventured that the Bence-Jones "albumose" represented a product of the partial degradation of tissue or blood proteins which is excreted like any proteose.

Subsequent studies in various cases, usually exhibiting multiple myelomas, have made the designation "albumose" untenable and have placed the substance in a class with other simple native proteins. Hence the designation "myelopathic albumosuria" has given way to Bence-Jones proteinuria. Proteoses are toxic when they are introduced to any extent into the blood stream. Taylor¹ and his associates at the University of Pennsylvania Medical School have injected the isolated Bence-Jones protein directly into the circulation of animals without provoking untoward symptoms. Furthermore, the blood of such injected animals clotted normally, which is not the case when true proteoses are introduced.

Even more convincing with respect to the independent identity of the Bence-Jones protein is the fact that, like other individual proteins, it has specific anaphylactic potencies. The Philadelphia investigators first showed this conclusively with protein isolated from the urine of their patient. Recently, Abderhalden² of Halle has actually separated Bence-Jones protein, with characteristic behavior toward heat, from the blood of a person who excreted such a substance into the urine. This blood protein was specific in its anaphylactic reactions. Animals sensitized with it responded with the characteristic "shock" only when the same protein was injected; not to other serum proteins. These facts speak further against the alleged proteose nature of the Bence-Jones substance, for proteoses, as a rule, are not specific antigens in anaphylactic tests.

Whence in the body is this *sui generis* protein, circulating in the blood along with the common plasma proteins and passing the kidney filter when the latter do not pass, derived? There is apparently nothing essentially "foreign" about it, as animals seem to retain and catabolize Bence-Jones protein injected into them in considerable quantity. We can go no further today than summarize the probabilities in the words of recent investigators.¹ The Bence-Jones protein is of endogenous origin and more or less independent of the food intake. It might either be derived from the tumor cells of the myeloma, or be produced through an interrupted or aberrant synthesis of some normal body protein. The biologic indications of close relationship to the normal blood proteins, and the enormous quantities produced would seem to favor the second alternative. The question remains obscure. It is interesting to note that Abderhalden's latest patient showed myeloma-like tumors of the bones at necropsy.

Current Comment

THE AMERICAN MEDICAL DIRECTORY: COOPERATION DESIRED

In 1905, after careful consideration, the Board of Trustees recommended, and the House of Delegates of the American Medical Association approved, the publication of a medical directory, in the belief that such publication would be in the interest of the medical profession. Since that time six editions of the Directory have been issued, and though this has been done at a financial loss, the undertaking has been generally regarded with satisfaction as one of the altruistic enterprises of the Association. At the present time the Seventh Edition is in course of compilation, but under most extreme difficulties. While the price of paper has doubled since the last edition was published, and the labor wage has more than doubled in the last five years, thus enormously increasing the expense, the difficulties to which we refer are not financial. To obtain and classify the data requires a large number of skilled clerical workers. And right here is our difficulty: skilled clerical workers are almost unobtainable at any price, and, in fact, it is impossible to get sufficient ordinary clerical help. This difficulty can be overcome, in part at least, if physicians who receive circulars from our Directory department will promptly respond to the request for data concerning themselves. In most instances this means simply filling out the blanks clearly and returning them. Further aid will be rendered if physicians who have moved during the last two years, or whose names are not correctly listed in the Directory will send corrections at once. We make no apology for this appeal for cooperation because the Directory belongs to the members of the medical profession; it is their Directory. If they cooperate in the manner requested, the difficulties under which the new edition is being issued will be largely removed.

1. Taylor, A. E., and Miller, C. W.: Studies in Bence-Jones Proteinuria, J. Biol. Chem. **25**: 281 (June) 1916. Taylor, A. E.; Miller, C. W., and Sweet, J. E.: Studies in Bence-Jones Proteinuria, II, *ibid.* **29**: 425 (April) 1917.

2. Abderhalden, E.: Ein Fall von Bence-Jonesscher Albuminurie, Ztschr. f. physiol. Chem. **106**: 130 (July) 1919.

"CHRISTIAN SCIENCE" AND THE MATERIAL PRESS AGENT

The letter from the "Christian Science Committee on Publication" which appears in the Correspondence department of this issue is further evidence of the smooth functioning of the publicity department of the late Mrs. Eddy's organization. Let there appear anywhere a published item that may seem, either directly or remotely, to refer unfavorably to "Christian Science" and forthwith the editor receives a letter from the local "Committee on Publication" supplemented, possibly, with a flood of letters from members of the cult. Woe to the newspaper man who exposes, be it ever so gently, the fallacies of "Science" which is miscalled "Christian." One can but admire the well-oiled publicity machinery of the "Christian Science" organization. Its upkeep must be heavy but it hits on all cylinders. If the medical profession maintained a publicity department that cost a hundredth part of the "Christian Science" press agency, hands would be raised in holy horror and from the house-tops would come the cry: The very foundations of our civil liberties are threatened. Whatever the "Christian Scientists" believe about the immateriality of disease—and just what they do believe is not clear—they are obviously of a mind when it comes to maintaining a material publicity department with material funds.

SPECULATIVE SCIENCE AND ENDOCRINOLOGY

The human body contains a certain number of bones and a certain number of muscles, but nobody knows how many glands. The function of the bones is fairly well understood; the purpose of the muscles is easily comprehended from their structure and action; but our knowledge of the function of all but a few of the glands is in the theory stage. If some one were to suggest that the function of the muscles is to control the will, there would be no lack of evidence to prove that the function of the will is to control the muscles; but when a speculative philosopher arises to remark that the interstitial cells of this or that tissue secrete a hormone whose function it is to govern the duration of life, thousands are ready to give him credence. It is this state of affairs which has called forth the following, which we quote from an editorial in a recent issue of the *British Medical Journal*:

"The speculative philosopher is always with us, and during the last few years has found his chief medical field of activity in the ductless glands and their secretions. Here he has been extremely busy, with the result that the number of such 'glands' has grown almost equal to the number of different tissues in the body; while the number of internal secretions and hormones postulated has become no less enormous. Indeed, it may be said, not unfairly, that with many writers who deal with the subject the only proof of the existence of a hormone nowadays required is that it should seem to be demanded by theory."

There is danger that the great accomplishments in medicine of the last two decades have left the medical mind in too receptive a mood. Some physicians, we

fear, are accepting theories on plausibility rather than on evidence. Such a condition is dangerous, because in such soil the pretender and quasiscientist thrive. "Prove all things; hold fast that which is good" should be the scientific attitude.

PUBLICITY—WITH RESERVATIONS

During the last few years municipal, state and federal departments, whose function it is to protect the public health, have done valuable service by issuing bulletins, periodically, giving information of interest and value to the public. The Department of Health of the City of New York publishes monthly a *Food and Drug Bulletin* which, as the name denotes, deals with the activities of the department in protecting the citizens of New York from fraud in foods and drugs. The information these bulletins contain is interesting and instructive. But it does not go far enough. While describing various cases of fraud or adulteration in food and drugs that occur monthly, the *Bulletin* does not give the names of the offending individuals or firms. We read in a recent issue, for example, that some "well-known biscuit manufacturers" of New York City complained that the 105,000 packages of crackers and biscuits that the Navy Stores were selling to the highest bidder "were moldy, musty, rancid and unfit for human food." Investigation proved that the complaint was without foundation and was "undoubtedly malicious or interested." Why not give the name of the "well-known biscuit manufacturers" who attempted to interfere with the sale of these goods? We read, too, that "a soda water manufacturer in the Bronx" was convicted and fined for using dirty sugar syrup; that in a "cocoanut factory in the Borough of Brooklyn" inspectors found floor sweepings of shredded cocoanut being "reconditioned" and toasted to be put on the market as "Toasted Cocoanut"; that inspectors seized 2,590 pounds of wormy almonds which were being shelled and salted in a nut factory for the market; that the "owners of a large candy factory" were convicted and fined for having 4,000 pounds of unwholesome condensed milk in their possession, intended for use in the manufacture of caramels; that a corporation manufacturing "an inferior grade of compound catsup," having corn-meal as its principal ingredient, was convicted of having 2,150 pounds of unwholesome corn-meal in its manufacturing room; that the owner of a candy factory was fined for having in his possession a quantity of unwholesome prunes and apricots; that a "large baking company" was fined for using wormy raisins in its cakes and another "baking firm" was also fined for using wormy flour in breadstuffs. Then there was the grocer who was fined for offering 7,000 pounds of unsound groceries for sale, and the "large cereal manufacturer" who was fined for packing unclean and contaminated cereals for human consumption. All of these cases are of vital interest to the citizens of New York City and they show that the health department of that city is doing good work. We believe, however, that the greatest deterrent to offenses of this kind is full publicity. To give the public the facts and to avoid casting suspicion on the innocent, the *Bulletin* should publish the names and

addresses of the guilty parties. The fines in such cases are, as a rule, absurdly inadequate, and disproportionate to the profits that may be made by sophistication.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Pasadena Hospital Assured.—The recent campaign for the fund to build a new and greater hospital in Pasadena is reported to have resulted in bona fide subscriptions of more than \$500,000.

New State Officers.—At the annual meeting of the Medical Society of the State of California held in Santa Barbara, May 11 to 13, under the presidency of Dr. Henry A. L. Ryfkogel, San Francisco, Coronado was selected as the next place of meeting, May 10 to 12, 1921, and the following officers were elected: president, Dr. John C. Yates, Coronado; president-elect, Dr. John H. Graves, San Francisco; vice presidents, Drs. William Duffield, Los Angeles, and Joseph H. Catton, San Francisco; secretary, Dr. Saxton T. Pope, San Francisco (reelected).

COLORADO

Postgraduate Lectures.—The lecture teams of the postgraduate lecture course, arranged by the Colorado State Medical Society, attended the monthly meetings of county societies at Canon City, La Junta, Trinidad and Colorado Springs, May 4. This course of lectures, which has been continued through the winter, promises to become very popular. It will be readjusted somewhat and the personnel of the teams changed in some instances, before another year.

Honor to Dr. Work.—The Pueblo County Medical Society gave a banquet at the Minnequa Club, Pueblo, May 7, at which about fifty were present, to Dr. Hubert Work, in honor of his election as president of the American Medical Association. Dr. Herbert A. Black presided as toastmaster and a number of addresses were made. The guest of honor in his response said that his election was a graduation from a course of training which began in the county society and led up through the state society and the national association, and the distinction shown to him was made possible because of the loyalty of the members of his county society.

Congress of Ophthalmology and Oto-Laryngology.—The Colorado Congress of Ophthalmology and Oto-Laryngology will be held in the County Society Assembly Hall, Metropolitan Building, Denver, July 23 and 24, under the auspices of the Colorado Ophthalmological and Colorado Oto-Laryngological societies. Arrangements will be in the charge of a joint committee consisting of Drs. Edward Jackson, Denver; Melville Black, Denver; James J. Pattee, Pueblo; Thomas E. Carmody, Denver; Robert Levy, Denver; William H. Crisp, Denver; Edward R. Neeper, Colorado Springs, and Harry L. Baum, Denver. All ethical practitioners of these specialties are invited to be present.

CONNECTICUT

Health Board for Yale.—The health and sanitary safety of undergraduates of Yale University are hereafter to be guarded by a university board of health patterned after those of great cities. Dr. James C. Greenway, New Haven, will be chairman of the board and will have a staff consisting of physicians and sanitary inspectors. The board of health will make health regulations for the control of students and will undertake personal supervision of their health.

New State Officers.—At the annual meeting of the Connecticut State Medical Society held in New Haven, May 19 and 20, it was decided to hold the meeting for 1921 at Hartford, May 18 and 19, and the following officers were elected: president, Dr. George Blumer, New Haven; vice presidents, Drs. William H. Judson, Danielson, and William H. Donaldson, Fairfield; secretary, Dr. Charles W. Comfort, Jr., New Haven; treasurer, Dr. Phineas H. Ingalls, Hart-

ford; delegates to the American Medical Association, Drs. John E. Lane, New Haven, and Walter R. Steiner, Hartford, and alternates, Drs. Charles J. Bartlett, New Haven, and Frank K. Hallock, Cromwell.

GEORGIA

Medical College Buildings Remodeled.—The buildings of the Atlanta Medical College, opposite Grady Hospital, are to be remodeled at the cost of \$33,360, and when completed will be used as part of the hospital. The trustees of Emory University have offered the buildings to the city, rent free, on condition that students from the medical school of the university be allowed to hold their clinics in the hospital.

ILLINOIS

Medical Society Organized.—Physicians of Moultrie County met in Bethany, April 13 and organized the Moultrie County Medical Society, electing Dr. William P. Davidson, Sullivan, president; Dr. Richard W. Denney, Bethany, vice president, and Dr. Samuel L. Stevens, Dalton City, secretary-treasurer.

Illegal Practitioner Fined.—W. F. Hughey, a magnetic healer at Pana, was arrested by the Department of Registration and Education of the State of Illinois for violating the provisions of the Medical Practice Act and was fined \$50 and costs. The court also compelled Hughey to return a fee of \$42.50 which he had collected the day he was fined from a woman in Pana.

New Sanatorium Building Needed.—The burning of the main building of the Edward Sanatorium, Naperville, crippled the work of the institution and of the Chicago Tuberculosis Institute very materially. The building which was burned housed the bed cases and furnished the examining rooms, laboratories, roentgen-ray rooms, treatment rooms and administration offices of the sanatorium, and was the important center for the cottages.

KENTUCKY

Trachoma Bureau Established.—Kentucky has established a bureau of trachoma and blindness as a part of the state board of health with an appropriation of \$7,500.

All-Time Health Service Provided.—Muhlenberg County has availed itself of the services of an all-time health officer. The cost of this work will be \$10,000 a year, of which \$5,000 is furnished by the federal and state health departments, and \$5,000 by the county.

Honor to Dr. McCormack.—At the ninth annual conference of school, city and county health officers and public health nurses, tribute was paid to Dr. Joseph N. McCormack, Bowling Green, who had served forty years with the state board of health. It was decided that a committee be appointed to arrange for the painting of a portrait of Dr. McCormack to be presented to the health officer with the stipulation that it hang for all time in the executive offices of the state board of health. Dr. Arthur H. Keller, Paris, was made chairman of the committee.

MARYLAND

Anniversary of Association.—The twenty-third anniversary of the Baltimore County Medical Association was celebrated by a banquet held at the Hotel Rennert, Baltimore, May 26. Dr. Junius W. Stephenson of Cornell University was the principal speaker and Dr. John W. Harrison, president of the association, Middleriver, was toastmaster. The other officers of the association are: vice president, Dr. Henry A. Naylor, Pikesville, and secretary-treasurer, Dr. George S. M. Kieffer, Baltimore.

Demonstration to Show Nutritive Value of Milk.—Eight organizations in cooperation with the Women's Civic League of Baltimore gave a demonstration at Osler Hall, May 26, to impress on the public the nutritive value of milk. The National Dairy Council, the United States Department of Agriculture, the state college of agriculture, the city board of health, the public instruction committee of the Medical and Chirurgical faculty, the Johns Hopkins School of Hygiene, the Maryland State Dairymen's Association and the Junior League all were represented. Dr. Mary Sherwood, Dr. William Travis Howard, Jr., Dr. Marion B. Hopkins, Dr. Henry Barton Jacobs and Dr. James H. Mason Knox, Jr., spoke while moving pictures were shown. In the afternoon, Dr. Elmer V. McCollum opened the session, and Dr. William H. Welch, President Munn of the National Dairy Council and Dr. Albert F. Woods, president of the State College of Agriculture, also spoke.

MASSACHUSETTS

Personal.—Dr. William J. Brickley, Boston, has been appointed associate medical examiner (coroner) for Suffolk County, succeeding Dr. Oscar Richardson, resigned.

Advanced Course in Medical Science.—Recognizing the great need for competent specialists in medical science, Harvard Medical School has established a new course leading to the degree of Doctor of Medical Sciences. The first two years of work of this course is substantially identical to that of the regular students, and this work is followed with two years' concentration work in one of the laboratory departments.

MICHIGAN

Hospital Association to Meet.—The annual meeting of the Michigan Hospital Association will be held in Wayne County Medical Building, Detroit, June 8 and 9, under the presidency of Dr. Warren L. Babcock, Grace Hospital, Detroit.

MINNESOTA

Hospital Association to Meet.—The annual meeting of the Minnesota Hospital Association will be held in Duluth the first week in September under the presidency of Dr. Louis B. Baldwin, University of Minnesota Hospital, Minneapolis.

Federation of Public Health Agencies.—A federation of all volunteer public health agencies of Hennepin County was recently incorporated in Minneapolis as the Hennepin County Public Health Association. Each organization will carry on its own particular phase of public health activities and retain its individuality, but the work of all the organizations will be under the supervision of the administration board of the federation, on which each member organization as well as the Minneapolis Health Department is represented. Among the special projects planned are public education, the cure and prevention of cancer, the establishment of free nutritional and dental clinics, the promotion of open-air schools, education in dental hygiene and the establishment of a health center.

MISSOURI

Medical Veterans Organize Society.—The medical and dental officers of St. Joseph who served in the World War held a meeting, May 17, at which they organized with the name "Medical and Dental Veterans of the World War," and elected Dr. William L. Kenney, president.

Personal.—Dr. Leon Paul Forgrave has been elected vice president of the St. Joseph Board of Health, succeeding Dr. Louis J. Dandurant, St. Joseph, resigned.—Dr. Hasbrouck De Lamater, city health officer of St. Joseph, has resigned and has been reappointed director of hygiene in the public schools.

Southwest Missouri Physicians Hold Meeting.—At the annual meeting of the Southwest Missouri Medical Society, held in Springfield, May 21, the following officers were elected: president, Dr. Edward C. Wittwer, Mountain Grove; vice presidents, Drs. Otto C. Horst, Springfield, and Charles H. Orr, Ash Grove; recording secretary, Dr. Edwin F. James, Springfield; corresponding secretary, Dr. Joseph W. Love, Springfield, and treasurer, Dr. Lee Cox, Springfield. The association adopted resolutions in memory of Dr. Herbert Staples Hill, Springfield, for many years secretary of the society.

NEBRASKA

Report of Health Bureau.—The consolidated report of the bureau of public health, November, 1919, shows a total of 380 Wassermann tests on blood and spinal fluid for 1919 under the state venereal law providing for free blood and spinal fluid examinations. More than 190 ampules of arsphenamin were distributed and more than 5,000 cases of venereal diseases were reported by physicians.

New State Officers.—The fifty-second annual meeting of the Nebraska State Medical Association was held in Omaha, May 24 to 26, under the presidency of Dr. H. Winnett Orr, Lincoln. Dr. Miles S. Moore, Gothenburg, was made president-elect; Drs. Ernest A. Creighton, Red Cloud, and Wesley L. Curtis, Lincoln, were elected vice presidents; Dr. Roy D. Bryson, Callaway, was elected councilor for the ninth district; Dr. Norman T. Johnston, Upland, councilor for the tenth district; Dr. Hugh E. Mantor, Sidney, was reelected councilor for eleventh district, and Dr. Alfred J. Stewart, Mitchell, was reelected councilor for the twelfth district; Dr.

Joseph M. Aikin, Omaha, was reelected a delegate to the American Medical Association, and Dr. Willson O. Bridges, Omaha, was elected alternate. The next annual session will be held in Lincoln. One of the features of the meeting was the address by Dr. James L. Greene, Hot Springs, Ark., at the banquet, May 25, on "The Treatment of Neural Syphilis."

NEW JERSEY

Child Hygiene Conference.—The first conference on child hygiene of statewide character, called by the department of health, is to be held by the New Jersey Bureau of Child Hygiene at Asbury Park, June 12 to 14. The New Jersey legislature has granted the largest appropriation ever made by a state for this purpose—\$150,000.

NEW YORK

Chiropractic Bill Vetoed.—It is reported that Governor Smith of New York has vetoed the bill recently passed by the New York legislature providing for a separate board of chiropractors.

Amendment to Labor Law.—An amendment to the labor law, passed by the legislature at its last session, provides that after July 1, 1920, children employed in mercantile establishments shall be subject to physical examinations of the same kind required in the case of children working in factories. These examinations are to be made by medical inspectors on the staff of the state industrial commission.

New York Hopes to Deport Alien Insane.—It is estimated that about 800 alien insane who are being cared for by the institutions of this state will be deported with the 6,000 alien insane in this country whom the United States Bureau of Immigration is planning to send back to Europe. The sending back to their home countries of these patients will greatly relieve the congestion in the institutions for the insane in this state.

Removal of Prohibition Restriction.—The Medical Society of the County of Rensselaer at its last meeting adopted a resolution that representatives in Congress be requested to introduce a bill to amend Section 7 of the National Prohibition Act to the end that the restrictions contained therein as to the amount of spirituous liquor, beer or light wine that may be prescribed for the use of any patient may be removed or modified, and appointing a committee with instructions to confer with medical societies of the state and throughout the United States to secure concerted action and to provide for ways and means to bring to the attention of Congress the desirability of the proposed amendment.

New York City

Personal.—Dr. Simon Flexner of the Rockefeller institute has been elected an associate member of the French Society of Tropical Pathology.

Hospital Drive Extended.—The campaign to raise \$2,000,000 for the New York Post-Graduate Medical School and Hospital will be continued through the summer. Among the recent gifts were \$10,000 from Mrs. E. H. Harriman, \$1,000 from Mrs. J. Henry Watson, \$1,000 from the employees of the Brooklyn Rapid Transit Company and \$500 from the Allis-Chalmers Manufacturing Company. The fund on May 28 totaled \$1,277,176.57.

Health Organization of America Offers Fellowship.—This organization offers one year in Teachers College, Columbia University (September, 1920, to June, 1921) for the study of modern health education in the elementary schools, to be awarded for the best graded plan and outline for interesting children in the establishment of health habits. Details will be furnished on application to the Child Health Organization of America, 156 Fifth Avenue, New York City.

Health Department Tests Accuracy of Thermometers.—The sanitary bureau of the department of health has made a survey of a number of clinical thermometer manufactories in and out of the city and has submitted reports. To demonstrate to physicians and nurses the utter worthlessness of some of the thermometers on which they have been depending, 156 clinical thermometers taken from physicians and nurses were tested. Of these, eighty-four, or 54 per cent., were found defective, while seventy-two, or 46 per cent., were found acceptable. No repeated reading could be made, and all tests necessary to determine the accuracy of the thermometers were not carried out in full; hence it is probable that some of the thermometers passed would prove defective if subjected to all the tests which are necessary to determine a good thermometer. In view of the results

of these tests, an appropriate amendment to the sanitary code and regulations to govern the selling, holding or keeping for sale of clinical thermometers in this city is under consideration by the department of health.

NORTH CAROLINA

Hospital Association Elects Officers.—At the annual meeting of the North Carolina Hospital Association, Dr. James M. Parrott, Kinston, was elected president, and Dr. John Q. Myers, Charlotte, secretary and treasurer.

Public Health Work for State Society.—A special committee appointed at the recent meeting of the state medical society has made its report urging that a permanent committee be named to prepare a plan for public health administration.

Personal.—Dr. Andrew J. Crowell, Charlotte, has been appointed a member of the state board of health, succeeding Dr. Edward C. Register, deceased.—Dr. Dan E. Sevier, Asheville, has been elected a member of the state board of medical examiners for nurses, succeeding Dr. Thompson Frazier, term expired.—Dr. Margery J. Lord, Asheville, has been appointed a missionary to the Presbyterian board and assigned to duty as a medical missionary in the Belgian Congo, West Africa.

OHIO

Cabot in Fremont.—Dr. Hugh Cabot of the University of Michigan spoke before the Toledo Academy of Medicine, May 14, on "Appendicitis."

State Public Health Organization.—A new association was organized at Columbus, May 12, known as the Ohio Public Health Association and the following officers were elected: president, Dr. Chester B. Bliss, Sandusky; vice presidents, Dr. Lucian G. Locke, Portsmouth, and Mrs. W. C. Marshall, Selma; secretary, Dr. Robert G. Patterson, Columbus, and treasurer, Mr. Theodore S. Hunter, Columbus.

Personal.—Dr. Kell M. Ellsworth, Dayton, was found in his home, May 19, suffering from a knife wound of the throat, and is under treatment in the Miami Valley Hospital.—Dr. Elwood Miller, Springfield, has been elected superintendent of the District Tuberculosis Hospital in that city, succeeding Dr. Rush R. Richison, who resigned to accept the position of health officer of Springfield and Clark County.—Dr. Dallas K. Jones, Wooster, has been appointed health commissioner of Wayne County.

Academy Activities.—On May 14, Dr. Charles Claude Guthrie, professor of physiology and pharmacy of the University of Pittsburgh School of Medicine, made a report before the one hundred and second regular meeting of the experimental medicine section of the Cleveland Academy of Medicine on "Experimental Studies on the Heart with Particular Reference to Fundamental Properties of Heart Tissue and Their Power on the Interpretation of Surgical Functional Disorders."—At the regular meeting, May 28, Dr. Thomas W. Salmon, New York City, medical director of the National Committee for Mental Hygiene, spoke on "What a Psychiatric Clinic Can Do for Cleveland." In his remarks, he stated that Cleveland has approximately 8,000 insane and feeble-minded in need of hospital care, and that it has no provisions for the care of these persons. He recommends that the state provide 2,000 more hospital beds for the insane; a hospital for the feeble-minded with a capacity of 2,000; 200 beds at the city hospital for handling the nervous cases; three mental clinics at the Lakeside and city hospitals and a location near the public square.

Illegal Practitioners Convicted.—The Ohio State Medical Board reports that five persons were convicted of practicing medicine in that state without licenses: Helen Platz, Cleveland, previously convicted of illegal practice of medicine, rearrested and after hearing in Euclid Township on May 10 was bound over to the grand jury.—A. B. Foster (unlicensed), Cleveland, arrested and convicted of illegal practice of medicine on May 11. It being the second offense, he was given a jury trial before Judge Terrell and a sentence of \$500 and six months in the workhouse was imposed.—"Dr." Clarmax Gillum (unlicensed), Cleveland, convicted in the Municipal Court of Cleveland and fined \$100 and costs and told to leave the city.—Mrs. Erato Zacharatos, Canton, pleaded guilty in the Probate Court of Canton, on May 13, to practicing medicine without a license and was fined \$25 and costs.—Mike Boldis, Akron, arrested on May 13 for illegal practice of medicine, pleaded guilty before Judge O'Neil in the Municipal Court of Akron and was fined \$100 and costs.—Dr. R. M. Sproul, Lima, charged with furnish-

ing 70 grains of chloral hydrate to an alleged drug addict, is said to have pleaded guilty and to have been fined \$100, May 7. The defendant stated that he had been practicing without a license since 1902 and was ignorant of the fact that a state license was required.

OKLAHOMA

New Hospital Association Officers.—The annual meeting of the Oklahoma State Hospital Association was held in Oklahoma City, May 19, and the following officers were elected: president, Dr. Fred S. Clinton, Oklahoma Hospital, Tulsa; vice presidents, Drs. John A. Hatchett, El Reno Sanitarium, El Reno, and Arthur S. Risser, Blackwell Hospital, Blackwell; executive secretary, Mr. Paul H. Fessler, University Hospital, Oklahoma City; treasurer, Dr. John H. White, Muskogee Baptist Hospital, Muskogee; delegate to the American Hospital Association, Dr. Charles L. Reeder, Tulsa Hospital, Tulsa, and alternate, Dr. George A. Boyle, Enid Hospital, Enid.

PENNSYLVANIA

Health Code to Protect Water Supply.—Private corporations, acting in a public or quasi public capacity, are directly affected by a new sanitary code which the advisory board of the state health department has adopted. The new sanitary code, drafted by Chief Engineer Charles A. Emerson, Jr., of the state health department, is included in a complete revision of the orders and regulations of the advisory board.

Philadelphia

Jefferson Commencement.—The ninety-fifth annual commencement of Jefferson Medical College was held at the Academy of Music at noon Saturday, June 5. Admiral William C. Braisted, Surgeon-General, U. S. Navy, delivered the valedictory address, his subject being "Joseph and Benjamin or Scientific Opportunities and Civic Obligations." There were 165 in the graduating class.

Memorial Tablet.—In the front hall of the Jefferson Medical College, a bronze memorial tablet was erected by the class of 1919, bearing the following inscription:

The Jefferson Medical College. The Class of 1919 has erected this tablet to Commemorate the Military Service of 1,187 Commissioned Officers of the Medical Corps of the Army and Navy, 431 Enlisted Men of the Students' Army Training Corps and an Unknown Additional Number of Other Graduates and Undergraduates of the Jefferson Medical College who, in the World War, Served their Country's Cause on Every Field, to their Own Credit and the Added Glory of their Alma Mater.

Personal.—Dr. E. B. Krumbhaar, Flourtown, has been appointed director of the pathologic laboratory of the Philadelphia General Hospital and clinical pathologist in the Bureau of Hospitals.—Dr. J. E. Burnett Buckenham has resigned as superintendent of the Municipal Hospital for Contagious Diseases.—Dr. Edgar Fahs Smith, retiring provost of the University of Pennsylvania, was a guest of honor at a dinner given by nearly 500 members of the faculty of the University of Pennsylvania at Weightman Hall, May 26.

TENNESSEE

Personal.—Dr. Willis S. Alexander was elected mayor of Ridgely, May 5.—Dr. Stanton H. Barrett has resigned as city director of health at Chattanooga.—Dr. Edward B. Wise, Chattanooga, has been appointed city physician of Chattanooga.

Charter Asked for Health Clinics.—Application has been filed for a charter for the Knoxville Health and Welfare Association. The future home of the association is to be in the McClung Building and will be ready for occupancy July 1, and will house the children's free clinic, the state anti-tuberculosis clinic, the American Red Cross general clinic and the United States Public Health Service.

VIRGINIA

Children's Hospital.—The Dooley Hospital, Richmond, recently constructed at a cost of \$55,000 and to be devoted exclusively to children, has recently been opened. It has a capacity of forty-two patients.

Appropriation for Health Work.—The Board of Supervisors of Henry County have voted an appropriation of \$5,000 to place the county in line for a year's cooperative health campaign with the state board of health on the county unit plan.

Tuberculosis Clinics.—The series of clinics held in Prince Edward County, by the Virginia Tuberculosis Association,

were crowded to their capacity. Dr. Dean B. Cole, Richmond, medical director of the association, and his assistants examined 255 persons who applied, of whom 166 were white and sixty-nine colored. Of the total number examined, 200 gave negative results.

To Guard Health of State Prisoners.—The board of directors of the penitentiary, Richmond, passed resolutions, May 4, looking to the improvement of conditions in the medical systems of the state prisons. These provided that the president of the board of directors of the penitentiary draw up, for adoption by the board of medical examiners, forms to be used by the surgeons of the penitentiary and state farm in examining convicts on admission and on release, and directed the surgeons to make a thorough examination of every person now at these institutions and hereafter, within forty-eight hours after admission, to make a similar examination of every prisoner at these institutions, and furthermore to make a similar examination of every prisoner before release and to record the findings in detail on the forms furnished by the board.

CANADA

University News.—Queen's Medical College, Kingston, Ont., is preparing for a forward movement. All salaries have been increased and six new professors added. The general hospital is to be enlarged. It is now thought that it will not be necessary to remove to Ottawa which was a live question a few months ago. About a million dollars is now in sight for improving the general hospital.

Personal.—Dr. H. C. Cruickshank, who served twelve months overseas and was wounded, has been appointed director of laboratories, medical department of health, Toronto. —Dr. Dowell Young of Cornell University has been appointed professor of biology in Dalhousie University, Halifax, in place of Prof. C. Moore, resigned. —Dr. J. W. Ross is Canadian Government Commissioner in China. —Dr. Joseph Edwards Midgley, formerly of St. Thomas and St. Mary's, Ont., but recently of Brooklyn, has returned to Canada and will probably practice in Toronto. —Dr. Samuel H. McCoy, formerly of St. Catharines, Ont., and Toronto, after returning from overseas, is at present in Ottawa, where he is working on the Canadian medical history of the war.

Ontario Medical Association.—The annual meeting of the Ontario Medical Association was held in Toronto, May 25 to 29. Work was commenced by the board of general purposes having a conference, and as this is composed of representatives from the city and county societies it is now considered an important body. Some of their recommendations were: that special classes should be established by school boards for the training of mentally defective; that there should be stringent immigration laws to prohibit the bringing in of mental defectives, legislation to prevent their marriage, and better education of medical students on the subject of psychiatry; a recommendation that the number of government liquor dispensaries in Ontario should be increased (now seven in Ontario) and that these stores should be kept open Saturday afternoons and Sundays. President Frederick W. Marlow, Toronto, regretted the lack of attendance at medical meetings. He said that there should be some law to compel medical men to take either graduate courses from time to time, or to compel their attendance at the medical meeting. There was something wrong in a system that allowed a man to graduate and then go along as he wished for many years whether he studied or not. He emphasized the need of more hospital accommodations as well as more nurses. That he did not mention the need of more physicians suggests that there are now enough and to spare. Dr. Nelson W. Percy, Chicago, associate professor of clinical surgery, University of Illinois, read a paper on the transfusion of blood which should be carried out after careful selection of the donor. He dealt with its use in pernicious anemia. Dr. Edward C. Rosenow, Mayo Clinic, Rochester, Minn., delivered an illustrated address on experiments in influenza, which was much appreciated. Dr. Charles W. Service, Chengtu, West China, addressed the meeting on the medical needs of China, particularly on insanitary conditions which were the greatest problem in health matters there. There was widespread disease due to neglect, poverty and ignorance which ran the death rate to 40 to 50 per thousand in adults and from 50 to 70 per thousand in children. He appealed particularly for interest in the West China Medical School. Higher fees for insurance examinations was a live topic of discussion. In the various sections the papers were listened to with keen appreciation and elicited much

discussion. The following officers were elected: president, Dr. James Huerner Mullin, Hamilton; vice presidents, Drs. Frank J. Farley, Trenton, and Frederick Arnold Clarkson, Toronto; secretary-treasurer, Dr. Thomas C. Routley, Toronto.

GENERAL

Mary Putnam Jacobi Fellowship.—The Mary Putnam Jacobi Fellowship for 1920-1921 has been awarded to Dr. Sophie Getzowa of the University of Berne, Switzerland.

American Association for Advancement of Science.—The 1922 meeting of the American Association for the Advancement of Science and Affiliated and Associated Societies will be held in Toronto, Ont., during the Christmas holidays of 1921, under the auspices of the city of Toronto, University of Toronto and Royal Canadian Institute.

Gastro-Enterologists Elect Officers.—At the annual meeting of the American Gastro-Enterological Society held in Atlantic City, May 3 and 4, the following officers were elected: Dr. Joseph Sailer, Philadelphia, president; Drs. Allen A. Jones, Buffalo, and James C. Johnson, Atlanta, Ga., vice presidents; Dr. Frank Smithies, Chicago, secretary (reelected); Dr. Horace W. Soper, St. Louis, recorder, and Dr. Clement R. Jones, Pittsburgh, treasurer.

Surgeons Elect Officers.—At the forty-first annual meeting of the American Surgical Association held in St. Louis, May 3 to 5, under the presidency of Dr. George E. Brewer, New York City, the following officers were elected: president, Dr. John B. Roberts, Philadelphia; vice presidents, Drs. Harvey G. Mudd, St. Louis, and James F. Mitchell, Washington, D. C.; secretary, Dr. John H. Gibbon, Philadelphia (reelected); treasurer, Dr. Charles H. Peck, New York City, and recorder, Dr. John H. Jopson, Philadelphia (reelected).

Conference of State and Territorial Health Officers with the Surgeon-General of the U. S. Public Health Service.—At the annual conference of state health officers with the U. S. Public Health Service, held in Washington, D. C., May 26 and 27, it was recommended that the Conference adopt the Standard Railway Code outlined through its committee. The following resolution was added:

Resolved, That any laws concerning the sanitation of public conveyances and public railway stations should contain a clause penalizing the public for befouling such conveyances and such stations, for we recognize that unclean and befouled public conveyances and stations are made so by dirty people and they should be penalized for their filth.

Relative to the bill H. R. 10925 S. 3250 (known as the Sheppard-Towner Bill) making provision for promoting the care of maternity and infancy in the several states, and the new federal and state health agencies known as "A Federal Board of Maternal and Infant Hygiene" and "State Boards of Maternal and Infant Hygiene," thereby created, it was stated that the establishment of new or competing health organizations, federal or state, weakens the efforts of the existing legally constituted health agencies. It was therefore

Resolved, That it is the sense of the Eighteenth Annual Conference of the State and Territorial Health Authorities with the United States Public Health Service that the objects of the Sheppard-Towner bill for the public protection of infant and maternal life be strongly endorsed; and,

Resolved further, That it is the sense of this conference that the Federal administration of this act should be under the supervision and control of the Public Health Service, and in states, of the state health authorities; and that the sections of said bill relating to administration be changed to accord with these suggestions; and,

Resolved further, That this resolution be laid before the committees on education and labor of the House and Senate by a special committee representing this conference.

A resolution on rural health work was introduced by the statement that over 53 per cent. of the population of the United States is rural and the food supply for our whole nation is dependent on production in the rural districts. Physical defectiveness and preventable diseases have been found by extensive careful studies to be as prevalent in our rural as in our urban population and only about 3 per cent. of our rural population is served by local whole-time health departments approaching adequacy. The application of the principle of federal aid extension to rural health promotion appears entirely logical, consistent with the theory and established practices of our system of government and is urgently needed at this time. A resolution was adopted endorsing the principles of legislation contemplated by the Lever Rural Health Bill introduced in the Sixty-Sixth Congress and agreeing to advocate such principles with a view to bringing about a nation-wide popular demand on the Congress of the United States for such legislation.

LATIN AMERICA

Nicaraguan Asylum for Paupers and Feeble-minded.—There was opened recently, at Managua, an asylum for paupers and demented.

Plague in Mexico.—It is stated from Mexico that there have occurred several cases of bubonic plague in the port of Vera Cruz, and President Wilson has offered to send hospital ships, physicians, nurses and medical supplies immediately.

New Medical Posts in Cuba.—The department of public instruction of Cuba has ordered the appointment of assistants to three chairs in the medical school, namely, medical pathology, practical pharmacology and therapeutics applied to stomatology.

School of Odontology in Uruguay.—There has been established in Uruguay a school of odontology connected with the faculty of medicine. The preparatory studies will be the same required for entrance to the school of medicine. The course in odontology will last four years.

Personal.—Dr. Henrique da Rocha-Lima has returned to Rio de Janeiro from Germany, where for several years he has been privat-docent for tropical diseases at the Institute for Ship and Tropical Diseases at Hamburg.—Dr. Henrique Molina has been appointed rector of the University of Chile. He has recently spent two years in research in this country. His published works include "Philosophia americana" and a refutation of Bergson's theories.

Plague in Brazil.—The *Brazil Medico* states that the local authorities of the state of Rio Grande do Sul have informed the central government that there is no need for outside help to combat the plague as no new cases have been reported for more than a month in the seven stations along the railroad where sporadic cases had developed, a total of nineteen in all. The contagion was traced to a cargo of grain at Uruguayana and here there were forty cases, but no new cases for a few weeks have been discovered, and the disease nowhere assumed epidemic form. The Rockefeller Foundation is organizing a hookworm campaign in that state in cooperation with the local health authorities.

FOREIGN

Gift for Bacteriologic Research.—Our French exchanges relate that "Mr. M. Douglas Flattery, an American philanthropist, has presented the Institute of Bacteriology at Lyons with 100,000 francs for an annual scholarship for a student who will specialize in laboratory work on the bacteriology of infectious diseases."

Suspension of Ophthalmologic Journal.—It is announced that the *Zentralblatt für Augenheilkunde*, founded and edited by Prof. J. Hirschberg for forty-three years, is to suspend publication. Michel's (formerly Nagel's) *Jahresberichte über die Leistungen und Fortschritte im Gebiete der Ophthalmologie* is also to stop publication with 1920. The back numbers from 1914 are to be made up to the current year.

Suspension of the "Archives de Médecine Expérimentale."—The Archives founded by Charcot for recording research in experimental medicine and pathologic anatomy now announces that with the close of the twenty-eighth volume it suspends publication. Its swan song is an article by Garnier and Reilly on the anatomic findings in various organs with acute yellow atrophy of the liver; Catsaras' study of metastasis by retrograde lymphatic routes; an account of experimental research by Achard, Leblanc and Binet on the blood changes during carbon oxychlorid poisoning, and of Achard and Gaillard's experimental research on various flours.

Deaths in the Profession in Other Countries

Sir Henry Burdett, London, founder and editor of the *Hospital and Nursing Mirror*, author of Burdett's "Hospitals and Charities," the "Hospitals and Asylums of the World," "Official Nursing Directory" and many other works on hospitals, medical sociology, and fiscal matters, aged 73, died recently.—Dr. A. Pasteur of Geneva, aged 90.—Dr. Sarda, professor of forensic medicine at the University of Montpellier, aged 66.—Dr. Julio Palma, professor of histology at Bahia, Brazil, until retired.—Dr. J. O. de Azevedo of the chair of medical chemistry in the same faculty. He was also deputy from the province.—Dr. G. Marchetti of Brescia, Italy, succumbed to smallpox contracted professionally.—Dr. A. Ceradini, director of the Laboratorio Micrografico Municipale of Milan and president of the Reale Società di Igiene.—Dr. F. Camaggio, instructor in surgical anatomy at the University of Naples.—Dr. R. Livi, instructor in anthropology at the University of Rome.

Government Services

Banquet to Admiral Barber

The officers on duty and the patient officers at the naval hospital, Fort Lyon, Colo., gave a banquet, April 29, to Rear Admiral George H. Barber, M. C., U. S. Navy, on his retirement from command of the hospital.

Honorary Degrees to Admirals Braisted and Stitt

Rear Admiral William C. Braisted, Surgeon-General, U. S. Navy, delivered the principal address at the ninety-fifth commencement exercises of Jefferson Medical College, June 5. The college conferred the honorary degree of LL.D. on Admiral Braisted, and the honorary degree of D.Sc. on Rear Admiral Edward R. Stitt, M. C., U. S. Navy, head of the naval medical school.

French Surgeons Honored

General Tuffier, chief surgeon of the French Army, who was delegated to represent the French government at the American Surgical Congress in St. Louis, was the guest of honor at a luncheon given by Dr. James F. Mitchell at the Metropolitan Club, Washington, May 8, at which Major-General Merritte W. Ireland, Surgeon-General, U. S. Army; Rear Admiral William C. Braisted, Surgeon-General, U. S. Navy, and Colonels Mathew A. Delaney and William H. Moncrief, M. C., U. S. Army, Dr. Livingston Farrand, director of the American Red Cross, and Dr. John M. T. Finney of Johns Hopkins University were also present.

Health Conditions of the Army

The incidence of communicable diseases is slightly lower than last week, although the admission and noneffective rates are about the same. There were only twenty-five new cases of measles reported from all stations during the week; one new case of scarlet fever reported from Camp Taylor, and one from the Western Department. Camp Dix reports one new case of diphtheria and Brooks Field, Texas, reports the admission of five diphtheria carriers. The Southern Department reports twelve admissions for malaria, seven of which were at Brownsville. Camp Upton is the only large camp reporting a case of pneumonia. The death rate for disease, 4.3, is considerably higher than last week although but fourteen deaths from disease were reported. Tuberculosis was reported as the cause of six deaths and pneumonia of two.

New Legislation for Army Medical Corps

Surgeon-General Ireland states that 1,000 additional medical officers will be required in the Army, under the provisions of the Army Reorganization Bill which has just been agreed to in conference by the Senate and House committees. This new legislation provides for a commissioned personnel in the Medical Corps numbering 1,820. The Army has, at the present time, only about 800 medical officers.

This new Army legislation has been drafted with the view of attracting medical men of the highest character and qualifications to the Army, and offering unusual inducements to them after they have entered.

Physicians who are now in the Medical Reserve Corps and who served during the World War can reenter the Regular Army up to the age of 58 years.

No person below the age of 48 can be appointed in the grade of colonel, or below the age of 45 in the grade of lieutenant-colonel, or below the age of 36 in the grade of major. Appointments in the grade of first lieutenant shall be made from the Medical Reserve Officers between the ages of 23 and 32; and in the grade of second lieutenant from enlisted men of the Medical Department between the same ages, who have had at least two years' service.

The bill provides that hereafter an officer in the Medical Corps shall be promoted to the grade of captain after three years' service, to the grade of major after twelve years' service, to the grade of lieutenant-colonel after twenty years' service and to the grade of colonel after twenty-six years' service.

The new legislation gives to the commissioned officers of the Medical Corps permission to attend technical, professional

and educational institutions and hospitals for special training at government expense. Such privilege has never been heretofore accorded medical officers, although it has been granted by legislation to the engineers, artillery and other corps of the Army. The bill permits 2 per cent. of medical officers to have the privilege of this special training at educational institutions and hospitals each year. Heretofore medical officers who desired to undertake special study or investigation of the latest development of medical science were given leave of absence for a few months each year, and the cost of tuition at educational institutions was paid by the individual officer.

Surgeon-General Ireland looks on this provision of the new legislation with much approval and is confident that it will be of practical benefit to medical officers.

The bill also provides special inducements to the enlisted men in the medical department by providing that the Medical Administrative Corps shall be composed of men from the enlisted service who may become commissioned officers in the grades of captain and first lieutenant after five years' enlisted service.

The bill authorizes the Secretary of War to maintain military training camps during fixed periods each year. It is the intention of the Surgeon-General to utilize the services of officers in the Medical Reserve Corps at these training camps, where theoretical and practical instruction may be imparted to such officers along military lines.

In this way, medical reserve officers will have special training in the event a national emergency should require their call to the regular service.

It is likely that this Army bill will go to the President for signature early in June.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

COLORADO

Denver—Lingenfelter, G. P.

TENNESSEE

Lebanon—Bryan, N. A.

TEXAS

Sequin—Anderson, R. B.

PENNSYLVANIA

Philadelphia—Target, J. D.

Pittsburgh—Rafferty, D. G.

VERMONT

East Calais—Dwinell, F. P.

Foreign Letters

PARIS

(From Our Regular Correspondent)

May 6, 1920.

Infanticide and Professional Secrecy

A midwife was prosecuted in the court of correction at Vesoul because of her failure to give prescribed notice to the civil authorities of the birth of an infant. The midwife had been called by telegraph, but arrived on the scene twelve hours after delivery of the child. The young mother confessed that she had strangled the newborn infant, and the midwife consequently confined her efforts to delivery of the placenta. This fact was used in her legal argument that she had not "attended the delivery of the child." The French laws impose on the physician, midwife or any other attendant at a confinement, the duty of reporting the birth of a child, in absence of the father, but the judicial penalty is not applicable unless the defendant has attended the birth. The court did not concur in the opinion of the midwife, but decided that any person who assists at the various phases of confinement, especially delivery of the child and the placenta, must be considered an attendant at childbirth. The midwife also raised the further objection that she could not legally make the notification because she would thereby have revealed the infanticide. Having learned of this crime through confession of the patient and in the exercise of professional duty, she was held to professional secrecy which would have been violated by giving notice of the birth. The court, not agreeing with the view, held that the scruple of not denouncing the patient was inadmissible for the reason that the obliga-

tion of birth notification rested on physicians and midwives with the same severity as on all other attendants, even though such notification might lead to discovery of a crime. The midwife was therefore sentenced to pay a fine.

Prophylaxis of Diphtheria

The prevention of diphtheria was the subject of discussion at the last meeting of the Société de Pédiatrie. A committee appointed to make a study of the question has expressed regret that present sanitary legislation does not place effective weapons at the disposal of the health officers. The report led to an interesting discussion, in the course of which Dr. J. Comby remarked that in spite of serotherapy, diphtheria was still responsible for a considerable mortality in Europe and elsewhere. For some years no progress has been made in serotherapy and Comby thinks that by preventive measures should be sought the success not hitherto attained by serotherapy. On the other hand, disinfection is difficult and vexatious.

Dr. Louis Martin claimed that Comby showed himself a decided pessimist in his evaluation of serotherapy; before the days of antitoxin, there were 1,432 deaths per annum from diphtheria, whereas the present rate is 331. Curves plotted for five-year periods will show a steady decline, and, notable fact, in those countries with the most favorable rates, Holland and Belgium, the serum is distributed gratis.

Dr. Apert called attention to the great danger encountered by always treating the same diseases in the same wards; particularly resistant strains of micro-organisms are thus developed, an observation which was confirmed by Barbier.

Fees of Attending Physicians at Duels

Can a physician legally claim a fee for attendance on a principal in a duel? This question was submitted to a Paris justice of the peace by Dr. Logeais, who was called to attend one of the principals in a duel several months ago. The justice replied in the negative, for since the duel was an illegal act, it could not be made the basis of a legal action.

Laënnec Institute

A committee which was formed several months ago for a study of the best means of commemorating the centenary of the inventor of auscultation has decided on the creation of a Laënnec institute for the study, prevention and treatment of tuberculosis. Its principal activities will be the establishment of laboratories, dispensaries and sanatoriums, the organization of campaigns in France and abroad, and similar endeavors. The statutes of the institute have recently been adopted by the constituent general assembly which at the same time appointed the administrative council, the bureau of which consists of Professor Letulle, president, and Professors Gley, Calmette, Vaquez and Dr. Sergent, vice presidents.

The Income Tax and the Birth Rate

The Conseil supérieur de la Natalité has recommended to parliament that the exemption from income tax be fixed at 4,500 francs for unmarried, and at double that figure for married persons. It is also asked that the exemption prescribed for each child in a family be doubled for the fifth and each succeeding child.

A National Institute of Hygiene

At the last session of the council of the University of Paris approval was given to an arrangement between M. J.-L. Bréton, minister of hygiene, and Professor Roger, dean of the medical faculty, acting on behalf of the minister of public instruction. The agreement promises creation by the minister of hygiene of a national institute designed for the instruction of students in all matters pertaining to hygiene,

for the training of specialists in hygiene and of nonmedical technicians, and finally for the development by every possible means of scientific research as applied to hygiene.

LONDON

(From Our Regular Correspondent)

May 10, 1920.

Physiology of the White Man in the Tropics

The Australian Institute of Tropical Medicine is studying the effect of exercise under the influence of humidity and high temperature of nature. Previous experiments of this kind have been made only under artificial conditions. The problem was to ascertain whether the white man in the tropics reacts in a similar manner to heat exposure, at rest and at exercise, as in a temperate climate. In other words, does life in the tropics bring about a new adjustment (acclimatization)? It was found that slow exercise greatly increased the metabolism for a short period, but that a point was reached after which the rate of increase was much smaller. On walking 2 miles, the body temperature rose considerably (from 2 to 3 degrees), the blood pressure increased from 10 to 20 mm. of mercury, and the pulse rate from 20 to 37. This took place during the first half of the walk. But after the second half of the walk the temperature and pulse showed a much slighter increase, and the blood pressure even decreased. The decrease was probably brought about by dilatation of the superficial veins, which withdrew blood from the arterial system. Vigorous exercise for a short period—two or three minutes—increased the metabolism enormously, but the organism soon returned to normal, and the rectal temperature was not affected to any extent. Much greater increase of temperature was brought about by exercise than in a temperate climate because the high temperature and the humidity of the tropics interfered with the cooling mechanism. The experiments showed that it was impossible to continue heavy manual labor under tropical conditions for the same time as in a temperate region without raising the body temperature to a dangerous degree.

Shell Shock and Court-Martials for Cowardice

In the House of Lords an important debate took place on this subject. Lord Southborough called attention to the different types of hysteria and traumatic neurosis, commonly called shell shock, from which many soldiers suffered during the war; referred to the death penalty inflicted on men for cowardice, and moved that inquiry should be made into the expert knowledge derived by army medical authorities with the object of recording for use in time to come the experience of the war and advising whether some scientific method of dealing with such cases could not be devised. He said that it was now recognized that shell shock cases were examples of varying types of hysteria and traumatic neurosis. It was not confined to the untrained soldier, but was common in seasoned soldiers marked out for bravery. With regard to cases of dereliction of duty followed by court-martial and sometimes the death penalty, the evidence given in these cases should be examined in secret and the question considered whether some other course should not have been taken with regard to some of the men. Lord Horne, as an experienced general officer, supported the motion. From his personal knowledge he could say that if in the early days of the war there might have been cases of injustice, he confidently asserted that if there was a shadow of doubt or any suspicion that the crime committed had been caused by any form of hysteria, the result of shell shock, the sentence would not be confirmed until the accused had been under the observation of the medical authorities.

Viscount Peel, undersecretary for war, replying for the government, said that no doubt in former wars there were cases of shell shock, but they were not recognized as such. He was unable to say whether during the late war cases of injustice occurred; but immense trouble was taken at court-martial and in the subsequent proceedings that no one should be condemned to death unless for the gravest, most serious reasons and unless all morbid causes had been eliminated. When a soldier in his defense or in mitigation of punishment urged a substantial plea on mental grounds, medical witnesses were called, the court-martial was adjourned, and a medical board was held. At the adjourned meeting one or more members of the board were called as witnesses to give evidence as to the effects observed. A mental specialist was always included in the board. If there was the slightest ground for further inquiry, headquarters ordered a medical board to examine and report before any action was taken to confirm the death sentence. No sentence of death was carried out until confirmed by the commander-in-chief, who invariably consulted the judge advocate-general. Eighty-nine per cent. of the death sentences pronounced were commuted by the commander-in-chief. The total number carried out during the war was exceedingly small. Most of them were accounted for by cowardice (eighteen cases) and desertion (266 cases). The view of the government was that great advantage might be obtained by such an inquiry as was suggested. Many of the nervous and mental conditions encountered were entirely new to the medical officers. The motion was agreed to.

Struggle Between the Government and the Profession in Tasmania

The case of Victor Richard Ratten, a physician who obtained admission to the medical register of Tasmania by means of a diploma stated to have been granted by a defunct American medical school, has been previously discussed in THE JOURNAL. He incurred professional odium by remaining in government employment on the staff of a hospital on terms which the Tasmanian branch of the British Medical Association declared to be unacceptable to the profession. An inquiry into his credentials was then begun by the medical council. It was evidently regarded by the government as simply a move in the struggle between itself and the profession, for an act has been passed which deprives the council of the power to remove from the medical register physicians who have committed offenses or have obtained registration by fraud. The council can apply to the supreme court or to a judge for this purpose. The *Medical Journal of Australia* accuses the government of passing this act with a view to the particular case of Ratten. The medical council had been instructed by the Premier to investigate his case, but the act prevents the council from pursuing the inquiry beyond the limits prescribed by the government. The act also strikes at the profession in another way. Certain physicians have disregarded the resolutions of their colleagues by continuing to treat well-to-do persons in charitable institutions. The result was that their colleagues refused to meet them in consultation. The act provides that if any registered physician without reasonable excuse (the proof of such reasonable excuse being on him) refuses to consult with or render professional assistance in consultation to any other registered physician seeking such advice or assistance, he shall be guilty of an offense for which the penalty is not less than \$250 or more than \$1,000. It is expressly stated that "the expression 'reasonable excuse' shall not include any resolution or by-law or any agreement of any company, association or body of persons." Further, the act states that "any person, association, company or body of persons who, directly or indirectly, prevents or endeavors to prevent or aid in prevent-

ing in any way whatsoever any physician or nurse, or other person applying for appointment, accepting or holding any appointment in any state-aided hospital or charitable institution, shall be guilty of an offense for which the penalty is not less than \$125 or more than \$1,000. The Tasmanian branch of the British Medical Association is thus liable to be fined for an act which it is constantly doing. A result is that its official organ, the *Medical Journal of Australia*, has had to remove from its pages a notice requesting physicians to communicate with the honorary secretary of the branch before applying for certain government appointments. The *Journal* adds, however, that this will not help the government, for there is not a physician in the commonwealth who is not fully aware of the facts. Similar notices with regard to appointment appear in every number of the *British Medical Journal*. But in England there has always been more regard for the liberty of the subject than in countries supposed to be more democratic.

The Influenza Epidemic

From sixty-six deaths in the last week of January the deaths from influenza increased steadily in the large towns of this country till the week ending March 27, when they reached 392. Since that date there has been a gradual falling off to the present figure of 306.

RIO DE JANEIRO

(From Our Regular Correspondent)

May 1, 1920.

Influenza

In the months of January and February there was a slight increase in the cases of influenza, most of which were mild, and therefore did not influence the death rate.

The severe quarantine measures taken by the board of health compelling steamships to remain in Rio de Janeiro Harbor, for ten or more days without being allowed to disembark passengers or unload, caused great disappointment among business men. The Royal Mail Steamship Company even threatened to suspend traffic between European and Brazilian ports. Prof. Azevedo Sodré wrote strongly against these obsolete measures. After discussion, Dr. Chagas agreed finally to change this quarantine prophylaxis to sanitary observation of passengers.

New Medical Journal

A new medical journal, *Folha Medica*, has been founded. Its editors are Profs. Aloysio de Castro, Bruno Lobo, Silva Santos, Ernani Pinto, Roquette Pinto and Francisco Lafayette, and Drs. Aben Athar and Octavio de Freitas, and it will be published bimonthly.

Newly Appointed Alienists for the Insane Asylum

Dr. Rocha Vaz, recently appointed professor in the Medical School, has been replaced as alienist of the asylum by Dr. Ernani Lopes. Dr. F. Esposel has taken the place of the late Dr. Sá Ferreira.

Brazilian Physicians for the League of Nations

Drs. Afranio Peixoto and Belisario Penna have been appointed Brazilian representatives on the section of international hygiene of the League of Nations.

Hospital for Venereal Diseases

The late Candido Gaffrée, a well known millionaire, has left \$100,000 for the foundation of a hospital for the treatment of venereal diseases. His heirs have decided to establish stations in different parts of the city for this purpose. They also intend to open an institute for the application of radium and later a laboratory for medical research along the

lines of the Rockefeller Institute. Dr. Gilberto Costa has been named to be director of the venereal hospital.

Paraguay Invites Brazilian Professor

The government of Paraguay asked Dr. Aloysio de Castro, director of the Medical School of Rio de Janeiro, to choose a competent professor to occupy the chair of physiology in the Faculty of Asuncion. He chose first Dr. Alvaro Osorio de Almeida, who could not accept the call, and then Drs. Mauricio de Medeiros, Chagas Leite and Roquette Pinto, but none of them accepted. The invitation is still open.

Examinations for the Chair of Chemistry in the Medical School

Drs. Nascimento Silva, Nascimento Bittencourt, Alfredo de Andrade and Pecegueiro do Amaral have been designated by the medical faculty to examine the thesis of Drs. Del Vecchio and Barros Terra, applicants to the position left vacant by the death of Dr. Diogenes Sampaio.

Portuguese Donation for the Centennial

The Portuguese colony of Rio de Janeiro has decided to build a large hospital which will be given to the city of Rio de Janeiro in September, 1922. The board of directors and the technical staff will be Brazilians of Portuguese descent.

Schistosoma Mansoni and Schistosomiasis Observed in Brazil

Dr. Adolpho Lutz has published an interesting paper on this subject, in which he discusses schistosomiasis in Africa and other continents, especially in America; recent observations in the north of Brazil; a description of the genus *Schistosoma* and differential characters of *Schistosoma mansoni*; characteristics of the eggs found in the feces; the embryo or miracidium inside the ripe egg; ecdysis and free life of the embryo or miracidium; penetrations of the miracidia in mollusks; development of sporocysts of the first and second generation; description of the cercariae; conditions under which the cercariae leave the snail; penetration of the cercariae; evolution of *Schistosoma* in mammalia; symptomatology of schistosomiasis; complications and secondary affections; pathologic anatomy; prognosis; therapeutics; prophylaxis, and the danger of bathing in stagnant waters. He concludes that schistosomiasis in Brazil is usually not severe, and that the proportion of unobserved cases is rather large.

Marriages

JOHN FRANCIS CORBY, Major, M. C., U. S. Army, to Miss Helen Horsman Wilcox, both of New York City, May 22.

HAL McCLUNEY DAVISON, Atlanta, Ga., to Miss Alexivena Natasha Becklimesheff, at Vladivostok, Siberia, May 31.

WILLIAM TECUMSEH ELAM, St. Joseph, Mo., to Miss Eleanor Carlson of St. Louis, early in May.

ALLEN ROGERS BARROW, Newtonville, Mass., to Miss Mary Warren of Brookline, Mass., April 22.

ALBERT GRIFFITH MILLER to Miss Katherine E. Frutchey, both of Philadelphia, February 10.

JEFFREY NEESE ELDER, Hopewell, Va., to Miss Myrle Fagg of Christiansburg, Va., March 9.

JAMES NEWBEGIN WORCESTER to Miss Gertrude Fullerton, both of New York City, May 19.

SIMON STEIN LEOPOLD to Miss Loraine Livingston, both of Philadelphia, February 18.

DANIEL D. TALLEY, JR., to Miss Anne Hays Myers, both of Richmond, Va., April 29.

F. A. WHITE to Mrs. F. F. Brown of Wapanucka, Okla., at Durant, February 27.

Deaths

Stanton Abeles Friedberg ☉ Chicago; Rush Medical College, 1897; aged 44; died in the Presbyterian Hospital, May 27, following an operation for mastoiditis. He was assistant professor of laryngology and otology in his alma mater, and attending laryngologist to the Presbyterian and Durand hospitals; a member of the American Laryngological, Rhinological and Otological Society, and secretary-treasurer of the Chicago Society of Medical History. During the war he served eighteen months at home and in France as major, M. C., U. S. Army, receiving his discharge April 29, 1919. He was well known for his work in bronchoscopy and for research on bacteria carriers.

James Adrian Goggans, Alexander City, Ala.; University of the City of New York, 1877; aged 66; a member of the Medical Association of the State of Alabama; a pioneer surgeon of Central Alabama; formerly president of the Tri-State Medical Society of Alabama, Georgia and Tennessee, and vice president of the Southern Surgical and Gynecological Association; health officer of Tallapoosa County since 1871; died at the home of his brother, April 25, from carcinoma of the cecum.

Henry Lawrence Orth, Harrisburg, Pa.; University of Pennsylvania, Philadelphia, 1866; aged 77; a member and once president of the Medical Society of the State of Pennsylvania; formerly local surgeon of the Pennsylvania, Northern Central and Pittsburgh and Lake Erie railroads; superintendent of the Pennsylvania State Lunatic Hospital, Harrisburg, for twenty-seven years; a medical cadet in the Civil War; died, May 18.

William Hadley Slacer, Buffalo; University of Buffalo, 1873; aged 75; for many years chief of the medical staff of the Sisters' Charity Hospital, and physician to the Edward Street Orphan Asylum; local surgeon of the Michigan Central Railroad, and medical director of the Protective Life Assurance Society of Buffalo; died, May 16, as the result of injuries received several months before in a street car accident.

Emil Anderson Lynwood ☉ Chicago; Dearborn Medical College, Chicago, 1907; aged 44; captain, M. C., U. S. Army, with service overseas and discharged June 30, 1919; a patient in the United States Public Health Service Hospital, Forty-Seventh Street and Drexel Boulevard, Chicago; died in that institution, May 27, from diabetes.

Max Carl Breuer ☉ Buffalo; University of Breslau, Germany, 1890; aged 55; gynecologist to the Memorial Hospital, and consulting gynecologist to the Deaconess Hospital, Buffalo; died in the latter institution, May 19, from septicemia due to a wound received while performing an operation.

Ellen Broadway Smith ☉ Salem, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1892; aged 54; while crossing the street to her office, May 13, was struck by an automobile, sustaining a fracture of the skull and other injuries from which she died a few minutes later.

James Henry Spencer, Tacoma, Wash.; University of Louisville, Ky., 1889; aged 58; for several years physician in the U. S. Indian Service at Ashland, Wis.; a specialist in diseases of the eye, ear, nose and throat; died at Santa Cruz, Calif., May 13, from chronic interstitial nephritis.

James Landon Taylor, Highland Park, Mich.; Medical College of Ohio, Cincinnati, 1872; aged 80; for many years a practitioner of Wheelersburg, Ohio; was struck by a street car while crossing a street in Detroit, May 3, and died in the Receiving Hospital, Detroit, May 6.

William Hampton Blythe ☉ Mt. Pleasant, Texas; Vanderbilt University, Nashville, 1886; aged 67; for more than twenty years secretary of the Titus County Medical Society and local surgeon of the Cotton Belt system; died, May 6, from senile debility.

Joseph Wiley McClendon, Dadeville, Ala.; Jefferson Medical College, 1888; aged 53; a member of the Medical Association of the State of Alabama; local surgeon of the Central of Georgia Railroad; died in Baltimore, May 13, from arteriosclerosis.

Mary Miller, Philadelphia; New York Medical College and Hospital for Women, Homeopathic, New York City, 1878; aged 82; died in the Home for Indigent Widows and

Single Women, Philadelphia, May 11, from cerebral hemorrhage.

Robert Steinfeld Willard, Ardmore, Okla.; University of Nashville, Tenn., 1899; aged 44; a member of the Oklahoma State Medical Association; formerly health officer of Ardmore; died in Lakeland, Fla., March 1, from influenza.

George Howard Cantwell, New York City; Jefferson Medical College, 1884; aged 62; for twelve years a surgeon for the Panama Steamship Company; died in Bellevue Hospital, May 19, from the effects of an overdose of morphin.

Joseph Davis Bennett, Safety Harbor, Fla.; St. Louis Medical College, 1867; aged 73; a Confederate Veteran; once vice president of the Florida Medical Association; died at Del Oro Grove, Safety Harbor, Fla., March 28.

William Ashburn Swearingen, Carothersville, Mo.; Barnes Medical College, St. Louis, 1900; aged 47; a member of the Missouri State Medical Association; also a druggist; died at Dawson Springs, Ky., May 4, from nephritis.

William Martin Johnson, Peckham, Okla.; University Medical College, Arkansas, Mo., 1890; aged 65; a member of the Oklahoma State Medical Association; died in Oklahoma City, February 13, after a surgical operation.

Albert Dell Swartz, Indianapolis; Indiana University, Bloomington and Indianapolis, 1908; aged 53; formerly superintendent of the Florence Crittenden Home; died in the Methodist Hospital, Indianapolis, May 17.

George D. Bradford ☉ Homer, N. Y.; University of Buffalo, 1875; aged 67; physician to the Cortland County and Homer Hospital; died in a hospital in Syracuse, N. Y., April 24, after a surgical operation.

Francesco Goglia, Elmira, N. Y.; University of Naples, Italy, 1902; aged 57; also a graduate in law; who was struck by an automobile, May 2; died from his injuries in St. Joseph's Hospital, Elmira, May 27.

Charles Baxter Wiseman, Henrietta, N. C.; College of Physicians and Surgeons, Baltimore, 1902; aged 51; a member of the Medical Society of the State of North Carolina; died, May 7.

Donald McPhail, Randolph, Va.; Medical College of Virginia, Richmond, 1878; aged 65; a member of the Medical Society of Virginia; died in a hospital in Richmond, March 11.

Corresta T. Canfield, Pittsburg, Kan.; Homeopathic Hospital College, Cleveland, 1872; aged 87; died at the home of her daughter in Pittsburg, May 1, following an attack of influenza.

Cassius Herschell Ice, Mannington, W. Va.; University of Maryland, Baltimore, 1891; a member of the West Virginia State Medical Association; died, March 21, from heart disease.

Herbert H. Gipson, Oklahoma City; Washington University, St. Louis, 1907; aged 40; a member of the Oklahoma State Medical Association; died, February 11, from influenza.

Silas T. Burch, Alex, Okla.; University of Tennessee, Nashville, 1884; St. Louis College of Physicians and Surgeons, 1898; aged 66; died, April 23, from acute indigestion.

Caroline Mary Smith, Milford, Conn.; New York Medical College and Hospital for Women, Homeopathic, New York City, 1895; aged 80; died, May 12, from heart disease.

George Albert Ross ☉ Fort Wayne, Ind.; Pulte Medical College, Cincinnati, 1879; aged 63; died in the Lutheran Hospital, Fort Wayne, May 13, from gallstone disease.

Theodore W. Helming, Indianapolis; Medical College of Indiana, Indianapolis, 1887; aged 55; a member of the Indiana State Medical Association; died, April 19.

Frank Edward Barrett, Wendell, Idaho; University of Kansas, Lawrence and Rosedale, 1912; aged 44; died at the home of his parents in Wendell, April 28.

John Franklin Hicks, Bristol, Tenn.; New Orleans School of Medicine, 1866; aged 91; for several terms a member of the Bristol city council; died, April 21.

John H. Barker, Bellevue, Ky.; Medical College of Ohio, Cincinnati, 1877; aged 67; a member of the Kentucky State Medical Association; died, April 20.

George F. E. Wilharm, Crafton, Pa. (license, Allegheny County, Pa., 1881); aged 67; a practitioner for forty years; died, May 11, from pneumonia.

R. H. Wilson, Sour Lake, Texas; Gate City Medical College, Texarkana, Texas, 1907; aged 61; died in a sanatorium in Houston, Texas, April 30.

☉ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

SYRUP LEPTINOL (FORMERLY SYRUP BALSAMEA)

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report on "Syrup Leptinol" (formerly "Syrup Balsamea").

The product is inadmissible to "New and Nonofficial Remedies," first, because the manufacturers fail to give the profession information regarding either the amount of the potent ingredient or the method of determining its identity and uniformity; second, because of the unwarranted recommendation for its use in such infectious diseases as pneumonia and epidemic influenza and for lack of satisfactory supporting evidence of its alleged therapeutic efficacy in other diseases and, third, because the recommendations for its use appearing on and in the trade package constitute an indirect advertisement to the public.

W. A. PUCKNER, Secretary.

Syrup Leptinol is sold by the Balsamea Co. of San Francisco. It was first introduced as Syrup Balsamea. In recent advertising, Syrup Leptinol is also referred to simply as "Leptinol."

According to the statements of the Balsamea Co. Syrup Leptinol is prepared from the root of a species of *Leptotaenia* (a plant belonging to the parsnip family) which grows in Nevada and which has heretofore not been used in medicine. The manufacturer states that the botanists who have been consulted have been unable to agree on the botanical classification of the plant. The dried root of this unclassified species of *Leptotaenia* is extracted with alcohol and from the extract so obtained the syrup is made, but no information has been furnished to show how the alcohol-soluble material is incorporated in the syrup. Further, the manufacturer has not announced tests whereby the identity and uniformity of the finished preparation may be determined.

A booklet contains the following:

"The species of *Leptotaenia* from which LEPTINOL is produced was first used in medicine by Dr. E. T. Krebs, who, after thorough laboratory investigation and clinical application over a period of several months, which resulted in the perfecting of LEPTINOL, prescribed the preparation for Influenza during the epidemic of that disease in 1918 with remarkably good results. Since this first use, LEPTINOL has been exhaustively tested by clinicians in private practice and in hospitals in the treatment of Pneumonia, Influenza, Bronchitis, etc., and has been universally endorsed."

In a circular letter it is asserted that the use of "Leptinol" during the "influenza epidemic" of 1918-1919 "demonstrated its almost specific action in respiratory affections"; that "during this epidemic it proved to be five times as efficacious

as any other treatment in pneumonia . . ."; and that "it is now as firmly fixed in the mind of many doctors for respiratory diseases as quinine is for malaria and the salicylates for rheumatism."

In the booklet it is further stated that the therapeutic action of the preparation is primarily that of a "stimulating expectorant" and secondarily as a "sedative expectorant"; that "its antiseptic action in the respiratory tract is prompt"; that it "is an effectual cardiac tonic where the tone of the heart muscle is impaired by fever"; that "in acute pulmonary conditions it effectively improves the respiratory action and allays cerebral irritation due to fever and toxins"; that it acts "as a vital stimulant and nerve sedative"; that "it stimulates the excretion of acid by the skin and in fever it has a strongly diaphoretic and antipyretic action without

depressing the circulation or the central nervous system"; that it is "mildly diuretic" and "slightly augments the biliary flow" and that "it increases the gastric and intestinal secretions and allays intestinal fermentation."


No evidence has been presented to the Council which shows that Syrup Leptinol has the actions ascribed to it. The reports of clinical trial¹ are little more than chance observations and lack all control.

The Council finds Syrup Leptinol (formerly Syrup Balsamea) inadmissible to New and Nonofficial Remedies because: (1) the information in regard to composition does not state the amount of potent ingredient, nor permit the determination of its identity and uniformity; (2) the recommendation for its use in such infectious diseases as pneumonia and epidemic influenza is unwarranted and its claimed therapeutic efficacy in other diseases is without satisfactory supporting evidence; and (3) the recommendations for its use which appear on the label and the circular wrapped with the trade package constitute an indirect advertisement to the public.


The Council accepts the explanation of the manufacturer that he has been unable to obtain a satisfactory classification of the plant from which Syrup Leptinol is made. It would be undesirable to exclude from therapeutic use a valuable drug simply because its botanical character has not been determined or because an exhaustive chemical examination had so far not been made. However, in

the absence of such information the manufacturer should give full information with regard to the preparation or standardization of his remedy and the therapeutic claims made for it should be accompanied by indisputable, thoroughly controlled clinical evidence. In the case of Syrup Leptinol, there is no satisfactory evidence available showing that the preparation has any value in the treatment of epidemic influenza, pneumonia, whooping cough, etc. While it is probable that a balsamic syrup, such as Syrup Leptinol, has palliative properties in coughs, such action does not at all justify the claim that it is useful in the contagious diseases for which it is proposed.

1. Among these reports is one from a mining hospital. The Council discusses this in its original report (a copy of which may be had on application) but the discussion is omitted here for lack of space.



The New All-American Names



ARSPHENAMINE
introduced as
"SALVARSAN"

BARBITAL
introduced as
"VERONAL"

PROCAINE
introduced as
"NOVOCAINE"

CINCHOPHEN
introduced as
"ATOPHAN"

ACETANNIN
introduced as
"TANNIGEN"

ALBUTANNIN
introduced as
"TANNALBIN"

PHENACAINE
introduced as
"HOLOCAINE"

BENZOCAINE
introduced as
"ANESTHESINE"

EUCATROPINE
introduced as
"EUPHTHALMINE"

Reduced facsimile of one of the cards exhibited by the A. M. A. Chemical Laboratory at the New Orleans meeting.

The Council cannot recognize a syrup presenting an unknown plant in uncertain proportions which is recommended in a variety of dangerous contagious diseases in which it ultimately may be harmful, even though in early stages of these diseases, it may serve to allay some of the milder symptoms.

Concerning the composition of the plant from which Syrup Leptinol is prepared, the Balsamea Company states that it contains "Alkaloids, acids, glucosides, volatile and fixed oils, gum and resins." This information is valueless since no information is given concerning the character, amounts or pharmacologic action of the ingredients. Further, it is unreliable as far as the presence of alkaloids is concerned since the A. M. A. Chemical Laboratory has been unable to find any alkaloids in the specimen of the crude drug furnished by the manufacturers.

In accordance with its regular procedure, the Council submitted the preceding statement to the manufacturer.

In reply the Balsamea Company stated that it is more than ever of the belief that Syrup Leptinol is deserving of recognition by the Council, basing this opinion on further clinical experience with it in the treatment of influenza.

The manufacturer stated that the use of the words "Leptinol" and "Syrup Leptinol" interchangeably was due to an oversight and promised to limit the use of the word "Leptinol" to an alcoholic extract of the plant.

Concerning the method of preparation of this alcoholic extract and the amount used in the preparation of Syrup Leptinol the Balsamea Company replied as follows:

"The alcoholic extract of the Leptotaenia, which we have termed 'Leptinol' is a preparation of definite and uniform strength, as determined by two methods: (a) the gravity test using the U. S. Hydrometer Scale for spirits, by which Leptinol registers 52 degrees at 60 degrees F., and (b) by gentle evaporation of the alcohol content and the measuring of the active constituents, which measures twenty-five per cent. by weight.

"The alcoholic extract 'Leptinol' is glycerinated in a machine, using one part of the alcoholic concentration to four parts of glycerin. This is then added to eleven parts of a heavy syrup, containing 7½ pounds of sugar to the gallon of syrup, and thoroughly mixed in an agitating machine. Leptinol is the sole active ingredient of Syrup Leptinol. Syrup Leptinol is a preparation of uniform strength. It is far more uniform in strength than most of the syrups of the U. S. P. made from fluid extracts which are made from crude drugs which are not uniform in strength."

This claim cannot be allowed as meeting the conflict with Rule 1. It is well known that plants vary in their composition at different times of the year; under different conditions of cultivation and growth; and under varying other conditions; hence the claim that alcoholic extracts of equal specific gravity insure uniformity of composition in active principles must be considered entirely illogical, especially since the exact nature of the active principles, if any be present, is unknown. If these are known their nature should be stated and tests for their identity be given. If they are unknown it is manifestly misleading to state that the preparation is of uniform strength.

It is evident that the Council cannot approve of the use of a preparation of unknown composition without satisfactory evidence of its value, especially when it is recommended in a variety of serious infectious diseases such as influenza and pneumonia. The mere fact that a small number of patients who have received the drug recover is no evidence of its curative value, and until carefully controlled clinical tests of the preparation are made, it is not entitled to the consideration of physicians.

Every Physician a Health Officer.—Hasty conditions of work, failure to employ laboratory means of diagnosis or to utilize available consultation facilities (especially in tuberculosis), and lack of training of medical practitioners in preventive medicine, are among the obstacles to further control of disease. There will not be complete success until means are discovered for enlisting every medical practitioner as a medical officer of health in the circle of his private or public practice, and for securing his services not only in the early and prompt detection of disease, but also in the systematic supervision during health of the families under his care, and in advising them as to habits or methods of life which are inimical to health.—Arthur Newsholme, *Commonwealth*, November-December, 1919.

Correspondence

THE DISCOVERY OF THE ANESTHETIC PROPERTIES OF COCAIN

To the Editor:—While preparing the report of the Committee on Local Anesthesia at the request of the Committee on Therapeutic Research of the American Medical Association and the Section on Laryngology, Otology and Rhinology for the New Orleans meeting, I had an interview with Dr. Carl Koller, who gave me some interesting history relative to the discovery of the anesthetic properties of cocaine. I asked him to write out the facts. This he has done; and as a historical contribution to this most important therapeutic advance, I feel that it merits publicity.

EMIL MAYER, M.D., New York.

Chairman, Committee on Local Anesthesia.

Up to the year 1884, the only method of local anesthesia known was the Richardson ether spray, which acted by freezing, and which was used for opening abscesses and similar operations of short duration. The immediate cause for my approaching the question of local anesthesia was the unsuitability of general narcosis in the case of eye operations. For not only is the cooperation of the patient in these greatly desirable, but the sequels of general narcosis—vomiting and retching—are frequently such as to constitute grave danger to the operated eye; this was especially the case at the time mentioned, when narcosis was not so skilfully administered as it is now. My teacher Arlt in his operative courses used to dwell on this subject. Eye operations used to be performed without any anesthetic whatever. Searching for a local anesthetic, I had for about a year tried various substances for their anesthetic effect on the eye, performing many experiments on animals. Thus I tried chloral, bromid and morphin. Having no success, I had for the time given up these experiments, which, however, prepared me to grasp a local anesthetic whenever I should encounter one.

About that time my friend Sigmund Freud, the same man who later achieved fame as the author of psychanalysis, asked me to help him with experiments on the physiologic effects of cocaine, when taken internally. We used to take some of the drug, of which only a very small quantity was in existence, and make various tests as to its effects on muscular strength, fatigue and the like. I noticed the peculiar benumbing effect on the tongue, a fact which was well known and which was noted in the textbooks on pharmacology and toxicology (Niemann, who isolated the alkaloid from the coca leaves mentioned it as far back as 1860), but the evident and important consequences of which had not been drawn. Like a flash it occurred to me that this was the local anesthetic for which I had been looking. I went at once to Stricker's laboratory of experimental pathology and tried it first on the eye of a frog, then on a guinea-pig, afterward on myself and then on patients. It is not correct, as said at the time, that I had discovered this important fact by accident, a drop coming by chance in my eye. If such had happened I would not have known that the eye was bereft of sensibility. I made the first publication relative to this subject, Sept. 15, 1884, at the meeting of the German Ophthalmological Society at Heidelberg; I was not present at this meeting; Dr. Brettauer of Trieste read a short communication for me and showed the experiments. Later I read a more elaborate paper before the Society of Physicians at Vienna. From the beginning I was aware that the new anesthetic had a wide application in other branches of medicine and surgery. Owing to my direct suggestion it was

tried in the field of laryngology and rhinology by Jellinek, who at that time was assistant to Schroetter in Vienna. The knowledge of the new remedy spread quickly, and before long it was in general use in all the specialties and in general surgery.

CARL KOLLER, M.D., New York.

"'CHRISTIAN SCIENCE' AND SLOPPY THINKING"

To the Editor:—The editorial in *THE JOURNAL* of May 22, headed "'Christian Science' and Sloppy Thinking," was quite characteristic of the attitude of those who believe that material medicine is the only hope of mankind for the healing of disease. The claim that material medicine is a science, and the practice of it is scientific, brings a smile because all people are not credulous. The majority of people are quite aware of the fallibility of medical diagnosis of disease and the consequent failure of medicine to heal. Many people have been victims of mistaken diagnosis and are awake to the effort being made to make unlawful the treatment of all disease, except by doctors of medicine. They are also awake to the fact that an attempt to confer such a monopoly on that method of treatment is forbidden by our Constitution.

A prominent clergyman, managing editor of a well-known religious publication, was frank enough to say: "The reason why Christian Science is in the world is because the evangelical churches failed to preach and practice Christian healing as taught and demanded by Christ Jesus." An additional reason why Christian Science is in the world today, reinstating primitive Christianity and its correlative, the lost element of healing, is because of the failure of materia medica to be the healer of disease that it claims to be. The greater number of people in the world who call themselves Christian Scientists are so because of the failure of medicine to heal them. The writer is one of them.

The assertion that if the father in Newark, New Jersey, had called a physician his daughter would not have died of diphtheria, is a marked exhibition of medical assumption. The statistics supplied by the health departments successfully dispute this claim, for by far the greatest number of those who died of that disease had the care of a physician. A news item in the *New York World*, June 12, 1916, said: "A special inquiry by the Department of Health shows that the discovery and widespread use of diphtheria antitoxin since 1907, has not materially reduced either the prevalence of the disease or the percentage of deaths, particularly the last five years."

The world objects to polygamy because it views it as immoral, and the attempt to draw a parallel between it and Christian healing, is farfetched and is a direct affront to a large body of law abiding citizens. To draw such a parallel surprisingly rejects the healing work of the Master, who said (John 5:36): "The same works that I do, bear witness of me, that the Father hath sent me." The healing work of the Great Physician was scoffed at and rejected as the repetition of that work is being rejected today, and yet Jesus taught plainly (John 14:12), "He that believeth on me, the works that I do shall he do also." There is today no greater safeguard to the health and morals of the people than that which is based on the teaching of Christian Science and which is manifested through the practice of it, and this in the face of all statements to the contrary.

The admonition of "a Pharisee, named Gamaliel, a doctor of the law," is as much to the point now as it was the day it was uttered (Acts 5:38-39) "And now I say unto you, Refrain from these men, and let them alone: for if this counsel or this work be of men it will come to nought: But

if it be of God, ye cannot overthrow it; lest haply ye be found even to fight against God."

Objection was made to "a religious cult with money and well organized publicity machinery behind it." What words, omitting the word "religious" could more accurately define and describe the status and activities of the allopath medical organization than the ones quoted? Why, then, the self-righteousness of the medical men? If the word "cult" is intended to refer to Christian Science, then it is proper to explain that the reason it is organized and active is because it is compelled to be so in order to defend the Constitutional right of its followers.

I shall appreciate the courtesy of your printing this letter, without comment, in the next issue of *THE JOURNAL*.

LEE WHITE, Chicago.

Christian Science Committee on Publication
for the State of Illinois.

[COMMENT.—Mr. White's letter justifies the caption of the editorial to which he objects; his arguments prove that the indictment "sloppy thinking" was amply justified.

Mr. White says: "The assertion that if the father in Newark, N. J., had called a physician, his daughter would not have died of diphtheria, is a marked exhibition of medical assumption." It certainly would be! But no such assertion was made. Where the father erred was in not giving the child the benefit of the best help that modern knowledge has to offer. Had the 9-year-old girl been buried beneath a load of bricks, even Mr. White would have suggested, we believe, that before giving the injured child "Christian Science" treatment—"absent" or "present"—the bricks should be removed. What Mr. White fails to realize is that a Klebs-Loeffler bacillus is just as material an object as a brick. It does material damage, it is true, not by its material weight, but by the equally material toxins it produces. It would be just as irrational to read Mrs. Eddy's "Scientific Statement of Being" to a child while bricks were permitted to remain on her mangled body as it is to read the same thing to a child whose system is being overwhelmed with toxins that can, at a certain stage at least, be neutralized. It is readily admitted that removing the bricks might not save the child's life, but such action would be the first thing to do.

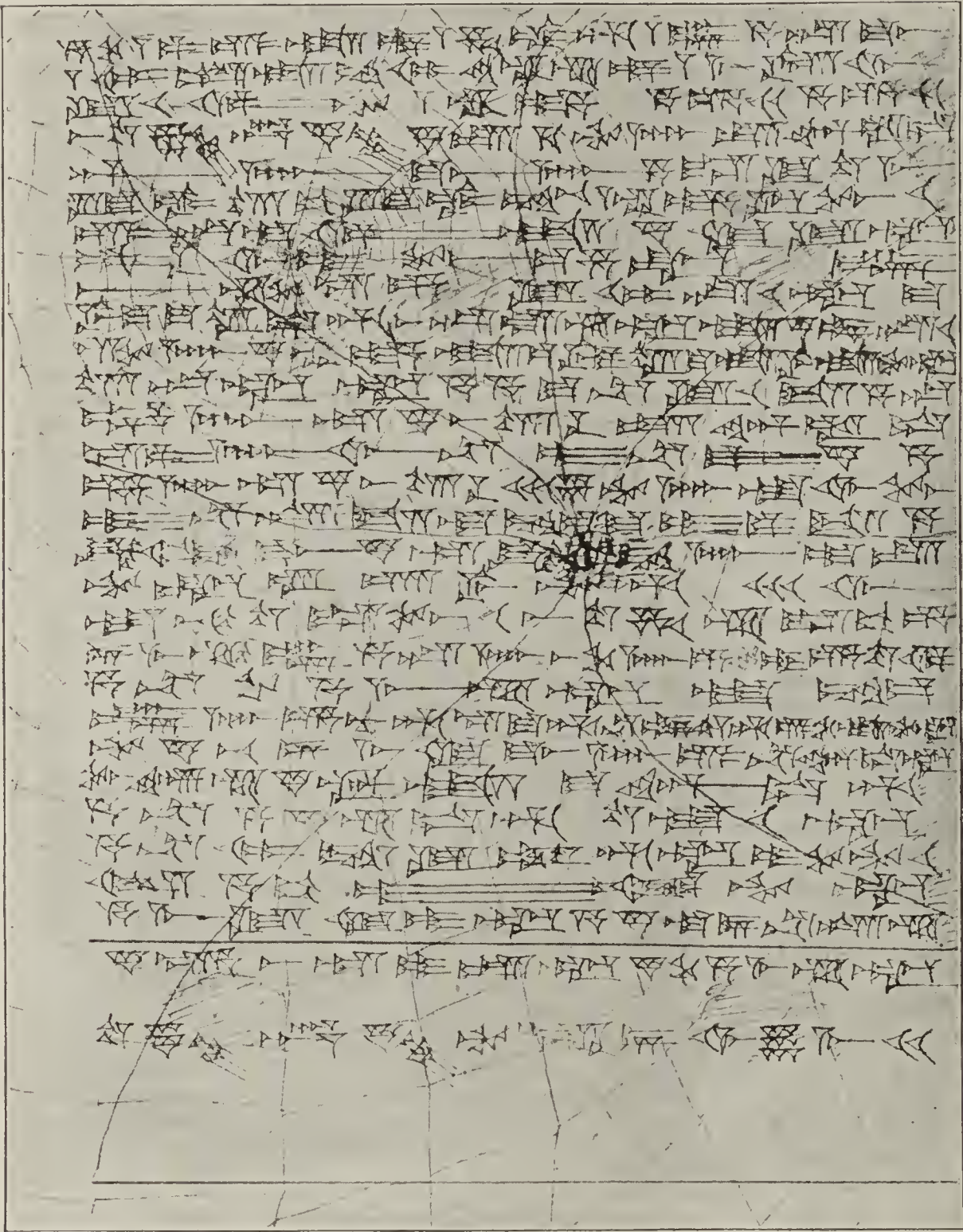
Mr. White holds that the medical treatment of diphtheria is unsuccessful because "by far the greatest number of those who died of that disease had the care of a physician." More sloppy thinking! With equal accuracy—and sophistry—it could be said that practically all who die of diphtheria die while under "the care of a physician." By the same logic Mr. White could prove that a bed is the most dangerous place on earth because most people die in it. His argument is similar to that put out by other drugless cults who claim to have lost no patients during the influenza epidemic. The fact that these gentry cannot sign death certificates, and the further fact that even people who profess to rely on "Science and Health" usually call in a physician when their illness reaches a critical stage, are utterly ignored.

Mr. White objects to *THE JOURNAL*'s parallelism between the religious belief of the Mormons in polygamy and the religious belief of the Christian Scientists in the immateriality of disease. He says that the world objects to polygamy because it views it as immoral. True; and if the rank and file of the people were as well grounded in scientific knowledge and methods of thought as they should be, the world would view some of the bizarre conceptions of the Christian Scientists as immoral.

Finally, why does Mr. White ask us to print his letter "without comment"? Is it because he realizes the weakness of his cause, or is it, perchance, another exhibition of the growing intolerance of criticism of the organization he represents? It may or may not be true that this cult can exercise sufficient influence to close the pages of newspapers against criticism of their organization, and it may or may not be influential enough to bring about the discharge of newspaper men who happen to incur their displeasure. It does not, however, control the medical press.—Ed.]

A UNIQUE BIRTHDAY TESTIMONIAL TO DR. WELCH

This facsimile reproduction is a message in cuneiform characters to Dr. William H. Welch on his seventieth birthday. The author is Paul Haupt, who, since 1883, has been Spence professor of Semitic languages and director of the Oriental Seminary of Johns Hopkins University. The original was written on antique, clay-colored paper, the third sheet bearing a key to pronunciation, and the fourth sheet a translation into English.



CUNEIFORM WRITING

The peculiar characters, called cuneiform writing, were first used in Mesopotamia, it is believed, about 4000 B. C. The Assyro-Babylonian, which grew from this, contained over 700 characters, partly alphabetic and partly syllabic. It is read from left to right. The characters were usually cut with a stylus in soft clay or stone, this governing their shape. The arrow heads are presumably due to the first impression of the point in the clay. Especially interesting to physicians is the Code of Hammurabi, who reigned in Babylon about 2250 B. C. Here occur such words as *asu*, physician; *asakku*, disease, and *marsu*, sickness. This code defined the legal status of physician and contained the first fee bill.

TRANSLATION

Message of Paul, the Son of Haupt, to the great Physician.
William Henry, the son of Welch:
A hearty, hearty greeting to my lord!
On the eighth day of the fourth month when thou wast born
70 years ago,
May the great gods decree length of days,
Health of mind and body for my lord.
May they let thee eat the plant of life
Whose name is A gray-haired man became young;
May they let thee bathe in the fountain
Which removes all uncleanness from thy body.
May they guard the life of my lord, and keep thee whole!
May thy heart ever be of good cheer!
The gates of the city in which thou wast born
Lift up their head;
The people of the city in which thou hast lived for 36 years

Look up to thee and rejoice.
Thou art a great monument of the Monumental City,
The founder of the new Temple of Health,
A great helper in the great war.
Thou has brought to America
The wisdom of the physicians in the countries across
the sea.
Mighty kings have bestowed glorious insignia on thee.
Great seats of learning have honored thee.
Numerous bands of scholars have chosen thee as their leader,
They listen to thy wise counsel,
They love thee like a father.
We shall not look upon thy like again.
Written in the city of Ithaca in the land of America
On the seventh day of the fourth month in the year of our
Lord 1920.

Medical Education, Registration and
Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.

COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, July 6-7. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.

CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

FLORIDA: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.

FLORIDA: Regular Board, Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.

GEORGIA: Atlanta, June 9-11. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.

IOWA: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.

LOUISIANA: New Orleans, June 10-12. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.

MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

MICHIGAN: Ann Arbor, June 8-10. Sec., Dr. B. D. Harrison, 504 Washington Arcade, Detroit.

MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.

NEBRASKA: Lincoln, June 9-11. Sec., Department of Public Welfare, Mr. H. H. Antles, Lincoln.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.

NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.

OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, State House, Columbus.

OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.

OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Waubay.

TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. A. B. DeLoach, 1001 Exchange Bldg., Memphis.

TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.

UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.

WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.

WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

WYOMING: Cheyenne, June 7-9. Sec., Dr. J. D. Shingle, Cheyenne.

Connecticut March Examination

Dr. Robert L. Rowley, secretary of the Connecticut Medical Examining Board, reports the written examination held at Hartford, March 9-10, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 28 candidates examined, 21 passed and 7 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University	(1918)	90.6, (1919)	88.3
Bennett Medical College	(1914)		81.9
Bowdoin Medical School	(1919)		86.2
Johns Hopkins University	(1916)	81.9, (1919)	85.6
University of Maryland	(1918)		76.1
Harvard University	(1902)	79.4, (1903) 84.9, (1919)	87.9
Tufts College Medical School	(1919)		77.5
Albany Medical College	(1898)	75.2, (1917)	85.4
Columbia University	(1904)	86.1, (1918) 89.6, (1919)	80.7
Fordham University	(1917)	79, (1918)	77.3

Jefferson Medical College	(1915)	84.6	(1919)	75
Vanderbilt University	(1915)			78
FAILED				
Bennett Medical College	(1914)			66.8
Chicago College of Medicine and Surgery	(1914)			66.3
Boston University	(1919)			69.9
Tufts College Medical School	(1919)			71.8
Woman's Medical College of Pennsylvania	(1915)			74
Melharrey Medical College	(1913)			69
Medical College of Virginia	(1917)			66.4

Massachusetts March Examination

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, March 9-11, 1920. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 29 candidates examined, 20 passed and 9, including 1 osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	(1910)		75.2
University of Georgia	(1913)		83.2
Chicago Hospital College of Medicine	(1919)		76.4
Bowdoin Medical School	(1915)		75
Harvard University	(1914) 82.6, 86.2, (1918) 84.6, (1919) 83.7, (1920) 79.3, 82.2, 82.5		
Tufts College Medical School	(1914) 79, (1917) 77.1, (1919)		78.5
St. Louis University	(1916)		82.7
Washington University	(1910)		85.7
Columbia University	(1901)		77.4
University of Vermont	(1915)		87.1
Medical College of Virginia	(1917)		78.6
University of Toronto	(1913)		80

FAILED			
Baltimore Medical College	(1902)		67.1
Middlesex College of Med. and Surg.	(1919) 67.1, 70.6, 71.9, 73.2, (1920) 71.4		
Montreal School of Med. and Surg.	(1901) 64.6, (1919)		69.5

Rhode Island January Examination

Dr. Byron U. Richards, secretary of the Rhode Island State Board of Health, reports the written and practical examination held at Providence, Jan. 8-9, 1920. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Two candidates were examined and passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Maryland	(1917)		88.5
Vanderbilt University	(1912)		88.7

Book Notices

PASTEUR: THE HISTORY OF A MIND. By Emile Duclaux, Professor at the Sorbonne. Translated by Erwin F. Smith and Florence Hedges, Pathologists of the U. S. Department of Agriculture. Paper. Price, \$5, net. Pp. 363, with illustrations. Philadelphia: W. B. Saunders Company, 1920.

Emile Duclaux, at the age of 19, entered the normal school in Paris, and came under the teachings of Louis Pasteur, under whose influence he remained until the death of the latter. "If Pasteur be an incomparable genius," says Dr. Erwin Smith, "Duclaux, at least, is his Boswell; but he is more than a mere Boswell, tagging around after a great man. He is, himself, a great man."

Duclaux's book, which is now presented in English for the first time, is more than a biography. There already exist excellent biographies of Pasteur; it is doubtful if biographic literature anywhere surpasses the life of Pasteur by his nephew, Paul Valery Radot. The present work is rather the history of Pasteur's influence on the development of the science of bacteriology and immunity. "I have desired, in the ensemble, as well as in the particulars," says Duclaux, "to give a genesis of his discoveries, believing that he has nothing to lose by this analysis, and that we have to gain." The book explains the origin of Pasteur's discoveries; their gradual development; the effect of discoveries made by others on Pasteur's work; famous controversies which arose on theoretical questions, etc. It is enlivened by scraps of con-

versation and with quotations from Pasteur's writings. It is illustrated with excellent reproductions of various photographs of Pasteur, and has an interesting appendix of brief biographic notices relative to various persons mentioned in the book.

As explained in the introduction, which includes an excellent brief biography of Duclaux, Dr. Erwin Smith began the translation, but eventually about two thirds of the translation from the French was made by Miss Florence Hedges. The whole was then worked over into its present English shape. This fact is mentioned, because the translation bears the marks of considerable unevenness. As pointed out by Tytler, in his famous Essay on the Principles of Translation, it is necessary, in order to produce an excellent piece of work, that the translator have equal facility with the two languages with which he works. That this facility was not always utilized is apparent from many sentences which appear in the latter part of the translation that are more French in their construction than English. Some examples follow:

Such being the case, what one has the right to ask is why these ideas did not attract the attention of contemporaries to a greater extent.

To make this idea acceptable to the illustrious practitioners, his colleagues in the Academy of Medicine, that they were responsible for the accidents which occurred to their patients, and that when there was a case of death by purulent infection in their service, or even merely a case of operative fever it was their fault, was a task that Pasteur had not ventured to assume, and yet one which he accomplished; because the new was certain to destroy the old, because it was only necessary to leave to itself the idea lodged in this Note in order to see it invade and overthrow everything.

However, these considerations will not weigh greatly against this book with any interested in the life of the great master, and in an appreciation of what his accomplishments have done for medical science. Duclaux's book presents these facts intimately and from the scientific point of view.

THE HYSTERIA OF LADY MACBETH. By Isador H. Coriat, M.D. Boards. Price, \$1.25. Pp. 94. New York: Moffat, Yard & Co., 1912.

According to the author, Lady Macbeth is a typical case of hysteria. "She is not a criminal type or an ambitious woman, but the victim of a pathological mental dissociation, arising upon an unstable, day-dreaming basis, and is due [sic] to the emotional shock of her past experiences." It has become quite the thing with the Freudians to take the beautiful imaginary conceptions of the great artists, writers and dramatists and psychanalyze them into expressions of the libido; this Freud himself has done for Leonardo Da Vinci, Ernest Jones for Hamlet, and Mordell for virtually all of the great poets and writers. Hamlet, we are informed, is a case of the Oedipus complex, and now, Lady Macbeth, because of her somnambulism, is transferred to the group of neurotics. The analyses are invariably clever, but sometimes rather banal. We are informed, for example, that in the words "Out damned spot! Out I say," the mechanism is that of an unconscious and automatic outburst. This is the very apotheosis of erudition. When Shakespeare's doctor later states of Lady Macbeth, "This disease is beyond my practice," he expresses, says Coriat, the doubt of the medical profession toward these psychoneurotic symptoms until the advent of modern psychopathology. It would seem that we must add to the many encomiums already conferred on the world's greatest dramatist the highest achievement of all: He was the first great Freudian!

THE NATURAL HISTORY OF THE CHILD. A Book for All Sorts and Conditions of Men, Women and Children. By Dr. Courtney Dunn. Cloth. Price, \$2 net. Pp., 316. New York: John Lane Company, 1920.

Strictly speaking, this is not a medical book, but rather an anthology of childhood collected from ancient and rare books, obscure pamphlets and papers. The material has been selected with excellent taste and with an intimate knowledge of the child. There are fourteen chapters, and they cover every phase of the child's life. Numerous quotations of a poetic and humorous character, and much of the folk lore and superstition attached to childhood are included. The book will be of interest to every one who is interested in or loves children—and who will admit that he is not?

Medicolegal

Definition of "Accident"—Rupture of Aorta

(*E. Baggot Co. v. Industrial Commission et al.* (Ill.), 125 N. E. R. 254)

The Supreme Court of Illinois says that the word "accident" is not a technical legal term with a clearly defined meaning, and no legal definition has ever been given which has been found both exact and comprehensive as applied to all circumstances. Anything that happens without design is commonly called an "accident," and, at least in the popular acceptance of the word, any event which is unforeseen and not expected by the person to whom it happens is included in the term. The words "accident" and "accidental injury," as used in the workmen's compensation act of Illinois, were meant to include every injury suffered in the course of employment for which there was an existing right of action at the time the act was passed; also to extend the liability of the employer to make compensation for injuries for which he was not previously liable and to limit such compensation. If an injury can be traced to a definite time, place and cause, and the injury occurs in the course of the employment, the injury is accidental within the meaning of the act, and the obligation to provide and pay compensation arises.

In this case a part of the employee's work consisted in turning one handle of a windlass in a hand derrick used in raising material to an upper story of a building, his last load weighing between 250 and 300 pounds. Nothing unusual happened while the work of lifting this last load was in progress. The work was heavy, but it was the same kind of work that the two men engaged in it had been doing for a couple of days. But after this load was landed this employee was seen to be spitting blood. About twelve days later he died. A necropsy disclosed a large longitudinal tear and several smaller transverse tears in the walls of the aorta. The court thinks that all the characteristics of an accident were present. The occurrence was sudden, unexpected, and undesigned by the workman. The circumstances were clearly such that the industrial commission was justified in finding that the hemorrhage was due to blood pressure intensified by vigorous muscular exertion. Relating the hemorrhage to physical exertion, rupture of the aorta by force from within was as distinctly traumatic as if the canal had been severed by violent application of a sharp instrument from without.

Druggists Changing Directions—Physician as Unfriendly Witness

(*Marx v. Schultz et al.* (Mich.), 175 N. W. R. 182)

The Supreme Court of Michigan, in reversing a judgment directed for the defendants and in ordering a new trial, says that the action was brought to recover damages suffered by the plaintiff on account of the death of his wife, alleged to have been caused through the negligence of the defendants, or of some of them. A physician, who was treating Mrs. Marx, had written a prescription for Fowler's solution of arsenic, directing the taking of three drops of it in water after meals, three times daily, which prescription had been sent to a drug store, the property of some of the defendants. There it had been filled, and the medicine delivered at the Marx home. The bottle bore an ordinary label, on which was the name of the physician, followed by the directions: "Teaspoonful in water after meals three times daily, 11-30-15." There was nothing to indicate the poisonous nature of the liquid. One teaspoonful was taken. The death of the patient occurred between nine and ten weeks later.

The physician's diagnosis corresponded to that of the county physician, who stated that the necropsy which he made was the basis for his opinion that she had died of chronic Bright's disease of from one to ten years' standing.

To a physician of twenty-five years' practice, who was a graduate of the University of Michigan and who stated that he had made a study of the effect of arsenic on the human body, was submitted a hypothetical question, which recited the

Society Proceedings

COMING MEETINGS

American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
American Orthopedic Association, Toronto, Ont., June 7-10.
American Psychopathological Assn., Cleveland, O., June 5.
Arkansas Medical Society, Eureka Springs, June 8-9.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Idaho State Medical Association, Coeur d'Alene, June 10-11.
Maine Medical Association, Augusta, June 29-30.
Massachusetts Medical Society, Boston, June 8-9.
Montana State Medical Association, Helena, July 14-15.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Jersey Medical Society, Spring Lake, June 15-17.
North Dakota State Med. Assn., Minot, June 15-16.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., May 3, 1920

The Senior Councilor, DR. ERNEST E. IRONS, Chicago, in the Chair

The Mouth as an Environment for Bacterial Growth

DR. ARTHUR L. BLOOMFIELD, Baltimore: The following organisms were introduced into the various parts of the upper air passages: *Sarcina lutea*, *B. coli*, *Staphylococcus albus*, *B. influenzæ*, Friedländer bacillus and *Streptococcus hemolyticus*. A loopful of twenty-four hour growth on solid medium was placed on the tongue and the nasal septum, or introduced into a tonsil crypt, and cultures were made at various intervals to determine the rate of disappearance. The general result of these experiments was that the bacteria disappeared rapidly, as a rule in less than twenty-four hours. In no case was disease produced. The explanation for the rapid disappearance of the organisms was found to be the mechanical flushing action of the mouth secretions, in some cases assisted by the destructive effect of the saliva. The free surfaces of the normal mucous membranes of the upper air passages do not furnish an environment in which foreign organisms can colonize, and special circumstances are required before they take hold locally and produce disease.

DISCUSSION

DR. ALFRED F. HESS, New York: Some years ago I attempted to ascertain whether bacteria are carried from mouth to mouth in children of a hospital ward. In order to determine this I swabbed the throats of several children with fresh cultures of *Bacillus prodigiosus*, with the object of ascertaining whether this pigmented bacillus would be carried to the mouths of the other children. Although large amounts were used on the tongue and on the cheeks, it was found that it disappeared entirely within about forty-eight hours, and that it could not be found in the mouths of the other children. The experiment, therefore, was negative. It substantiated, however, the experience of Dr. Bloomfield.

DR. RUSSELL L. CECIL, New York: Dr. Bloomfield's experiments have an interesting bearing on some experiments which we have recently carried out on the effect of injecting virulent influenza bacilli into the nose and throat of healthy volunteers. If a virulent culture is used, symptoms usually appear in six or eight hours. The changes most commonly noted were headaches, rhinitis, sore throat, tracheitis, leukopenia and general malaise. None of the subjects had any fever.

Effect of Therapeutic Doses of Digitalis on the Contraction of Heart Muscles

DRS. ALFRED E. COHN and ROBERT L. LEVY, New York: That digitalis causes alterations in the heart resulting in changes in the form of the electrocardiogram is now well known. No evidence has been presented, however, to show that the amount of digitalis required—30 per cent. of a lethal dose—is beneficial, except in cases of fibrillation of the auricles in which block of auricular impulses, mainly through stimulation of the vagus nerves, takes place. A beneficial action must be based on the ability of the drug to increase the

giving of the prescription, Nov. 30, 1915, for a skin rash, with directions to take three drops after each meal, which directions were by mistake changed at the defendants' drug store to read "one teaspoonful after meals"; that one teaspoonful was given to Mrs. Marx, according to those directions, and immediately thereafter she appeared to be in great pain, suffered inward convulsions, threw herself from one side to the other of the bed, and continually tried to vomit; that her whole body became greatly swollen, and her mouth and tongue so increased in size that she could hardly talk; that after Nov. 30, 1915, large ulcers came in her mouth and nose, her eyes were swollen, and liquid appeared therein, her appetite was poor, and she complained at times of pains about her heart and an irritable condition of her bowels, the movement of which was frequent, the substance passed being bloody and yellow; that she was delirious off and on from the time she received the overdose, and the general conditions named continued down to the time of her death, Feb. 7, 1916.

The witness, in answer to the question whether, in his opinion, such conditions would be caused by the overdose of Fowler's solution of arsenic which Mrs. Marx received, and would the overdose be the proximate cause of her death, answered: "Those symptoms are caused by an excessive dose of arsenic and probably would result in her death." The court is of the opinion that this testimony was sufficient to warrant the drawing of an inference favorable to the plaintiff sufficient to present the disputed question of fact—which should have been presented to the jury—as to the cause of the death of the plaintiff's wife. As to whether the testimony of the defendant's witnesses outweighed that of the plaintiff was a question for the jury to determine in the first instance.

Some question was also made by the plaintiff's counsel of the undue limitation by the trial court of the examination of the attending physician, who wrote the prescription, whom the plaintiff was practically required to call. An attempt was made to show certain incidents between the plaintiff and the physician, in order to make it appear that the physician had become adverse and unfriendly to the plaintiff's cause. The court is of the opinion that the judge should have been more liberal in allowing a showing of this character to be made, in view of the fact that the physician, being the attending physician, it was almost obligatory on the plaintiff's counsel to put him on the stand in order to make out his case.

Unlawful Practice of Medicine

(*Black v. State (Texas)*, 216 S. W. R. 181)

The Court of Criminal Appeals of Texas, in affirming a judgment of conviction of defendant Black of unlawfully practicing medicine, for which he was fined \$250 and sentenced to one day in jail, says that it was entirely undisputed that he had and maintained offices where he treated any and all persons who might apply to him for various and sundry disorders and diseases, for compensation; and that he had not registered with the district clerk of the county, as required by the provisions of Chapter 6, Title 12, of Vernon's Penal Code. That act, passed by the legislature in 1907, makes it unlawful for any one to practice medicine on human beings in Texas, without registering with the district clerk in the manner and form provided by said act. By the terms of Article 755 of said chapter, what is meant by "practicing medicine," within the proscription of said statute, is defined. Subdivision 2 of that article is: "(2) Or who shall treat, or offer to treat, any disease or disorder, mental or physical, or any physical deformity or injury, by any system or method or to effect cures thereof, and charge therefor, directly or indirectly, money or other compensation." This act has been held constitutional both by this court and by the Supreme Court of the United States. It has been held to apply to a masseur; also to an osteopath; also to one who claimed to cure by means of laying on of hands and prayer—and this wholly regardless of whether such persons claimed to be physicians and practitioners of medicine or not.

volume output of the heart, and it must be able to do this in therapeutic doses, that is to say, in doses that influence the T wave of the electrocardiogram or reduce the rate in auricular fibrillation. We have accordingly injected this amount into the veins of dogs, eleven of which received the tincture of digitalis, and nineteen of which received g-strophanthin; and into cats, five of which received g-strophanthin, and nine tincture of digitalis. Alterations in volume output were studied in curves obtained by the use of the Roy and Adami myocardiograph. The curves represent longitudinal linear alterations in the form of ventricles, and under the conditions of cardiac contraction may represent changes in volume of the cavities and consequently of volume output.

The significant results concern the effect of these two drugs on the T wave and on the degree of contraction. The degree of contraction changed in the greater number of the thirty dogs that were studied; the T wave in more than half. In cats the T wave usually changed, the degree of contraction decreased in more than half. The effect on contraction differed, therefore, in cats and dogs. In seven dogs and thirteen cats the record of the blood pressure in the femoral artery was added to the other records. Except in one dog and four cats, the blood pressure usually rose. With tincture of digitalis a significant fall of pressure often preceded a rise.

Anesthesia and operative procedures, it was thought, might disturb the electrocardiogram. Experiments were therefore made on dogs in which electrocardiograms and blood pressure records were taken without an anesthetic and without operation. The electrocardiograms were taken in the usual way. The blood pressure curves were obtained in dogs previously prepared by a method described by Van Leersum. By this method a long stretch of one carotid artery was enclosed in a stretch of skin included between two parallel incisions. The tube containing the artery lay free of the neck, and was surrounded by a small rubber cuff. Water transmission to a mercury manometer permitted the taking of records. Minimum and maximum oscillations after the manner of Erlanger indicated systolic and diastolic pressures. It has been found in the few experiments that have so far been performed that T wave changes occurred uniformly and that the blood pressure usually rose, the increase varying from 20 to 66 mm. of mercury.

With doses of therapeutic range, equal to 30 per cent. of the calculated lethal dose, digitalis and strophanthin (1) increased the contractile function of the cardiac muscle, and by so doing increased the volume output. This effect supplies a firm basis for the statement that these drugs may exercise a beneficial action. (2) At the same time, the T wave is usually altered, and (3) there is a transient elevation of blood pressure.

Certain Differences in the Action of Strophanthin and Digitalis in Patients

DRS. ALFRED E. COHN and ROBERT L. LEVY, New York: It is highly desirable to have for use in clinical medicine a safe, effective preparation of the digitalis series for intravenous use. The drug chosen was crystalline strophanthin, as it is a pure substance having definite chemical and physical properties. The crystalline substance employed was isolated from seeds of *Strophanthus gratus*, chemically identified, and biologically standardized by the cat method of Hatcher. The average cat unit was found to be 0.104 mg. per kilogram. For use in the clinic the crystals were dissolved in fiftieth molar phosphate solution with p_H 7.0, and autoclaved in hard glass ampules. In this manner alterations in reaction of the solution were prevented, and biologic potency was preserved. Equivalent amounts, in terms of cat units, of strophanthin by vein and of digipuratum by mouth were administered to patients. In this way a series of comparable observations both in the same and in different individuals was obtained. The strophanthin effects could then be viewed with reference to known and fairly constant digitalis standards. While the treatments were being given, electrodes leading to the string galvanometer were kept constantly in place, and curves were made at intervals of fifteen minutes during the first three hours, and then at half-hour intervals for the second

three hours. Another electrocardiogram was usually made the same evening and once daily thereafter until the curve had resumed the form seen in the control. Strophanthin was given usually in two doses at an interval of one hour—the first of from 0.4 to 0.5 mg., the second of from 0.3 to 0.5 mg. Digitalis was administered in comparable doses from 0.7 to 1.0 gm. and at the same intervals in the same patient on different occasions. The giving of relatively large doses, as recommended by Eggleston, has been found feasible. Rarely has it been necessary in auricular fibrillation to give more than 1 gm. (10 cat units) to produce the desired effects.

No serious untoward effects were observed after strophanthin. The onset of abnormal rhythm, namely, ventricular premature beats and ventricular ectopic tachycardia, occurred in 52 per cent. of fibrillators and in 12.5 per cent. of the cases with normal rhythm. Such toxic effects occurred always within twenty minutes of the injection of the dose causing them, and disappeared within eight hours. Nausea and vomiting were noted in 10 per cent. of cases. Comparable doses of digitalis by mouth caused undesirable effects in a much smaller percentage of observations.

We would conclude: First, that crystalline strophanthin, dissolved in fiftieth molar standard phosphate solution and sealed in hard glass ampules, may be kept for at least six months without loss of biologic potency, and secondly, that comparison in patients of the effects of comparable doses of strophanthin by vein and digitalis by mouth showed that: (a) the action of strophanthin is more rapid and is of shorter duration; (b) the T wave of the electrocardiogram is less frequently altered by strophanthin than by digitalis, and (c) toxic effects, though not of serious import, followed more often after the injection of strophanthin than after the administration of digitalis.

The Effect of Foreign Protein Therapy in Lobar Pneumonia

JOSEPH L. MILLER, M.D., Chicago: Fifteen consecutive patients with lobar pneumonia entering Cook County Hospital were treated by a single intravenous injection of typhoid vaccine. The dosage used was 30 millions, the minimum amount required to give a chill. All reacted by a rise in temperature and a leukocytosis. In nine patients the vaccine did not modify the course of the disease. In six, the patient was detoxicated following the injections. The pulse, temperature and respiration returned to normal, the cough and pleural pain subsided, and the patient stated that he felt much better. In three of the six cases the improvement was temporary, as after the lapse of from twelve to twenty-four hours the symptoms returned with unmodified severity. In three cases the detoxication was permanent; however, the patients had a moderate temperature for from three to four days, to the time at which the crisis would normally appear. They were, however, entirely free from evidence of intoxication. There was no relation between the severity of the chill, the temperature reaction and degree of increased leukocytosis, and the beneficial results of the vaccine.

Distribution of Carbon Dioxid Between Cells and Plasma

DRS. J. H. MEANS and L. W. SMITH, Boston: The manner in which carbon dioxide is transported from tissues to lungs by blood has recently been the subject of considerable discussion. We have undertaken a study of the distribution of carbon dioxide between cells and plasma. Samples of blood were drawn from the arm vein or artery under oil, and analysis made of the carbon dioxide content, both of the whole blood and, after centrifugation, of the plasma, by the method and with the apparatus of Yandell Henderson. At the same time the proportion of cells to plasma in each sample was determined by hematocrit observations, and the relative amounts of carbon dioxide in the cells and plasma calculated therefrom. In a series of ten normal venous bloods, the total carbon dioxide varied from 50 to 60 per cent. by volume, the average being 55.2 per cent. by volume. The plasma of a unit of the same bloods contained from 31.1 to 40.8 per cent. by volume, the average being 35.3 per cent. by volume, while the cells contained from 17.2 to 24.9 per cent. by volume, the average being 20.1 per cent. by volume. In

four normal subjects, samples of arterial and venous blood were drawn within a few minutes of each other. The average amount of carbon dioxid in the plasma of a unit of the four arterial bloods was 35.3 per cent. by volume, and of the four venous bloods, 35.8 per cent. by volume. In the cells of a unit of the four arterial bloods, there was an average of 14.2 per cent. by volume of carbon dioxid, and in the cells of the four venous bloods an average of 21.5 per cent. by volume. In other words, the amount of carbon dioxid in the plasma of arterial and venous blood is identical, whereas, when blood is aerated in the lungs, an average of 7.3 per cent. by volume of carbon dioxid is lost from the cells. The transport of carbon dioxid, therefore, is accomplished by the cells, not by the plasma of the blood. In the venous bloods from nine patients with severe anemia, the average amount of carbon dioxid in the plasma of a unit of blood was 52.4 per cent. by volume, and in the cells, 5.8 per cent. by volume. The average total carbon dioxid of these bloods was 58.3 per cent. by volume. Therefore, in anemia the total amount of carbon dioxid in the blood is essentially normal; but in its distribution between cells and plasma, there is relatively less in the cells and more in the plasma than in normal bloods. This, however, is merely because of the smaller relative volume of cells in anemia. The average actual concentration of carbon dioxid in the cells of our fourteen normal venous bloods was identical with that of the bloods of our nine patients with anemia.

DISCUSSION

DR. FRANKLIN C. McLEAN, New York: The results reported are apparently in confirmation of the considerations recently developed by L. J. Henderson, who has shown that the dissociation constant of oxyhemoglobin, as an acid, is about nine times that of reduced hemoglobin. Consequently, in passing through the tissues, and in losing oxygen, the concentration of hydrogen ions in the red cells tends to decrease. The equilibrium between the cells and plasma is maintained, in part at least, by the migration of carbonic acid from the plasma to the cells. It is not necessary, therefore, to assume from the observations here presented that a direct combination of hemoglobin and carbon dioxid is responsible for the increase in carbonate content of the cells.

DR. JAMES HOWARD MEANS, Boston: As far as we could discover, the carbon dioxid carrying power of the cells in anemia is identical with that of normal cells. The smaller amount of carbon dioxid carried by the cells in anemia is due to the smaller proportion of cells in a unit of blood. It is highly probable that the cells carry the carbon dioxid because of the increase in the acidity of hemoglobin when it takes up oxygen, with a resulting decomposition of bicarbonate and liberation of carbon dioxid, according to the formula of L. J. Henderson.

The Constancy of the Volume of the Blood Plasma in Disease

DRS. A. V. BOCK and G. R. MINOT, Boston: The vital red method of Keith, Rowntree and Geraghty was used to estimate the blood plasma volume in five normal and twenty-five abnormal individuals. The total blood volume was then calculated from hematocrit determinations. The pathologic conditions studied include extremes in content of total corpuscles, a wide range of total blood volumes, and cases with and without edema. The results indicate a remarkable constancy of plasma volume in disease comparable to that known to exist in the normal, namely, about 50 c.c. per kilogram of body weight. In conditions with edema and anasarca, it has been found that the blood plasma per kilogram of body weight is the same as in the absence of edema. After hemorrhage, dilution of the plasma volume tends to occur rapidly until the normal plasma level is reached, after which it remains fixed in amount. Previous figures concerning the blood volume in pernicious anemia and chlorosis, usually quoted in the literature, are too great. Variations in the total blood volume in disease are due chiefly to differences in total content of corpuscles. For example, a case of polycythemia vera, with a total of 75 trillion red cells in the body, was found to have essentially the same plasma volume in relation to the body weight as a case

of pernicious anemia with a total of three trillion red cells. Certain exceptions to the proposition of a fixed plasma volume do exist, such as in hemorrhage and shock, edema of the lungs, after excessive sweating, in severe diarrhea, and probably as a result of changes in altitude. Emphasis has been placed on the importance of a proper tissue fluid reserve in order to keep the plasma volume at a physiologic level. There is a possible source of error in blood volume determinations that depend on dilutions of whole blood, or primarily on corpuscle content of the blood. Methods that determine the plasma volume directly seem to offer more accurate results than those demanding the use of whole blood.

The margin of error of the vital red method is such as to result in variations in duplicate determinations up to 10 per cent. The colorimetric reading, necessary for the determination of the plasma volume, may be difficult owing to a difference in color of the solutions. This difference is usually attributed to hemolysis, but spectroscopic examination of many specimens has failed to verify such an explanation. Cases of hypertension are likely to have plasma volumes on the lower limit of normal, as Dr. Rowntree suggests. As to the relation of blood volume to body surface, the formula of Dreyer as applied to man, $B. V. = \frac{B. W. 0.72}{0.67}$, gives a figure for the total blood volume greater than has been reported by any other method.

A Further Study of the Carotinoid Pigments in Human Blood and Tissues

DRS. ALFRED F. HESS and VICTOR C. MYERS, New York: Not only carotin is frequently present in human blood, but sometimes also xanthophyll, a carotinoid pigment of different solubility. These substances vary greatly in amount, but are found in the blood of most adults in such quantities as to discolor the plasma, but not the skin. As might be expected, they are present to a greater degree in the blood of adults than in that of infants, who are on a milk diet. Carotin has been found in the colostrum, and a trace of it has been noted in the plasma of a new-born infant. However, the blood of the mother may contain a considerable amount of this pigment and yet the blood of her new-born infant be free of it, showing that the pigment does not pass through the placenta.

These pigments do not discolor the sclera unless they are present in very large amounts, the antithesis of what obtains in relation to the bile. This is probably due to the fact that the bile injures the endothelium of the vessels and thereby leads to their permeability. Carotin seems to have a slight photodynamic effect, causing a mild desquamation of the skin where it is exposed to the light.

DISCUSSION

DR. ALFRED F. HESS, New York: I am unable to state in reply, to the questions asked, whether or not there is any relationship between freckles and the carotinoid pigments. It is, however, quite possible, especially in view of the photodynamic quality of the pigment. This entire question has a clinical point of view. Some patients who are diagnosed as having liver trouble and some metabolic disturbance are undoubtedly suffering from carotinoid pigmentation of the skin. Recently I saw a child who came under this category, and had been treated with calomel for a considerable period, in view of the fact that its liver was slightly large and its color slightly yellow. When the carotinoid food was removed from the diet, its skin became white.

High Protein Diets and Arteriosclerosis in Rabbits

DRS. L. H. NEWBURGH and THEODORE L. SQUIER, Ann Arbor, Mich.: In the studies dealing with the effect of high protein diets on the kidneys of rabbits, it was noted that the animals which ate such diets for a number of months showed at necropsy widespread arteriosclerosis of the aorta. It was further noted that the extent of the vascular disease was roughly proportional to the duration of the high protein feeding. In another group of animals fed a diet made of a mixture of dried powdered beef and bread flour in the proportion of 1:2, the notes dealing with the condition of the

aorta show that the aortas of two rabbits that lived on this diet four weeks and six weeks each presented a tiny patch of arteriosclerosis. Four animals that ate the diet for from three months to seven months possessed aortas that showed very many irregular slightly raised, partly ulcerated plaques and streaks, extending from the aortic valves to a short distance below the diaphragm.

The two obvious sources of error in assuming that the vascular lesions observed bear a casual relationship to the diet are, first, that arteriosclerosis may be a lesion of very frequent occurrence in laboratory rabbits; and second, that arteriosclerosis may be common in old rabbits and that the experimental rabbits in which the arteriosclerosis was found were old and would accordingly be expected to show a high incidence of the vascular disease. As a control for the first possible source of error we examined fifty-nine rabbits used in the laboratory for other purposes. The aortas of all of these rabbits, with two exceptions, were normal. In the aorta of each of these two rabbits we found a single very small sclerotic patch. The second possible source of error will not account for the vascular lesions found in the group of animals that ate the meat mixture, as these rabbits were not senile. The oldest was not older than 14 months when killed.

The microscopic appearance of the vesicular lesions made it clear that we were dealing with true arteriosclerosis analogous to that which is commonly found in the human being. The proportionality existing between the length of the high protein feeding and the amount of vascular injury serves further to emphasize the view that the arteriosclerosis observed in rabbits that lived on high protein diets was directly or indirectly caused by these diets.

The Basal Metabolic Rate Before and After Surgical Treatment in Adenoma of the Thyroid With and Without Hyperthyroidism and in Exophthalmic Goiter

DR. WALTER M. BOOTHBY, Rochester, Minn: According to Plummer's classification there are two separate and distinct types of hyperthyroidism, each due to a different pathologic change in the thyroid gland: In the one type, the hyperthyroidism associated with the clinical syndrome of true exophthalmic goiter is always accompanied by diffuse hypertrophy and hyperplasia of the thyroid gland; in the other type the hyperthyroidism, not associated with this typical diffuse hypertrophy and hyperplasia, but with the occurrence of adenoma in the gland, is due to the adenoma, and the resulting syndrome is distinguishable from that occurring in true exophthalmic goiter.

The syndrome associated with the hyperthyroidism from adenoma of the thyroid is considered by Plummer as a distinct clinical entity and may be defined as a disease associated with adenoma, characterized by an increased basal metabolic rate excited by an excess of the normal thyroid hormone in the tissues. At about middle age the adenomatous tissue gradually begins to furnish an excessive amount of the apparently normal thyroid hormone (thyroxin-Kendall) and this produces the increased metabolic rate and intoxication clinically evidenced by nervousness, tremor, tachycardia, loss in strength and weight, and a tendency to hypertension, and in the later stages myocardial disintegration. The underlying cause or stimulus that activates the thyroid to adenomatous growth and oversecretion is not known.

Detailed metabolic rate and blood pressure studies are reported on seventy-five cases of adenoma with hyperthyroidism in which the average basal metabolic rate before treatment was +35 per cent. and after operation +7 per cent. Similar studies of 201 cases before treatment are also given in which the average basal metabolic rate was +28 per cent. In contrast, the average basal metabolic rate in 167 cases of adenoma without clinical evidence of hyperthyroidism was +2 per cent.; eighteen with an average basal metabolic rate before operation of -4 per cent. remained virtually unchanged, -8 per cent. as a result of thyroidectomy.

Three groups of exophthalmic goiter cases of varying degree of severity were studied. In thirty-six cases of the severest type the average metabolic rate before treatment was +66 per cent; these patients were subjected to rest

in bed and two ligations at an interval of a week or more; and within ten days after the second ligation the basal metabolic rate was +50 per cent. These patients after three months' rest at home returned to the clinic and were found to have a basal metabolic rate of +42 per cent., with corresponding clinical improvement; within two weeks after thyroidectomy these patients were reading +19 per cent. In a second group, comprising fifty-two moderately severe cases, subjected to a single ligation and thyroidectomy from one to two weeks later, the basal metabolic rate before treatment was +52 per cent.; in twenty-two of these cases the basal metabolic rate ten days after the preliminary ligation was +41 per cent.; within two weeks after thyroidectomy the basal metabolic rate in the entire group had fallen to +15 per cent. In fifty-two cases of mild exophthalmic goiter in which a primary thyroidectomy was performed, the average basal metabolic rate before treatment was +36 per cent., and two weeks after operation was +8 per cent.

DISCUSSION

DR. JAMES HOWARD MEANS, Boston: I agree that the importance of the metabolism determination in thyroid disease is about the same as the determination of the temperature in febrile diseases. It is proper now to say a word of warning in this matter. We could doubtless treat typhoid fever fairly intelligently without basal metabolism determinations. Nevertheless, if we recognize that the metabolic rate does not tell us everything about one case of exophthalmic goiter, we shall be very glad to have the accurate information of the degree of his hyperthyroidism that the metabolic rate gives us. Thus, if we keep in mind the limitations of this highly technical procedure, we shall find it exceedingly valuable in accurately following in a quantitative way the progress of the disease. In any given patient the pulse curve and metabolic curve are essentially parallel. Plotting from the same base line, we find that some patients have a relatively greater rise in pulse rate than in metabolism and vice versa.

Biologic Study of Hemolytic Streptococci from Throats of Patients Suffering from Scarlet Fever

DRS. A. R. DOCHEZ and WALTER P. BLISS, Baltimore: Utilizing the technic for streptococcus agglutination recommended by Dochez, Avery and Lancefield (*J. Exper. Med.* 30:179 [Sept.] 1919), a series of twenty-five strains of *Streptococcus hemolyticus*, isolated from the throats of patients suffering from scarlet fever, were tested against Dochez and Avery's five type antistreptococcic serums of nonscarlatinal origin, namely, Types S3, S23, S32, S60 and S84, and against four antistreptococcic serums made from strains isolated from patients with scarlet fever (Dochez and Avery's Type S273, and the author's strains 23, 24 and 25). Twenty, or 80 per cent., of the twenty-five strains studied were agglutinated by all four antistreptococcic serums of scarlatinal origin, in most instances in as high dilution as the homologous organism, which averaged from 1:160 to 1:640. None of these strains of scarlatinal origin were agglutinated by the five antistreptococcic serums derived from strains of non-scarlatinal origin, except in the case of Serum Type S84, a rabbit serum which showed a tendency to nonspecific agglutination of streptococci and agglutinated six of the twenty-five strains. On the other hand, only three of seventeen strains of nonscarlatinal origin isolated from throat cultures in tonsillitis, pus from abscesses, and blood cultures were agglutinated by these antistreptococcic serums of scarlatinal origin, and according to the history of these three cases they may have been either atypical scarlatinas or scarlatinal contacts.

From this study, therefore, it would appear that a great majority (80 per cent.) of strains of *S. hemolyticus* isolated from the throats of patients with scarlet fever belong to a specific biologic type as determined by the reaction of agglutination. It is possible that the heterogeneous strains found may be accidental dwellers in the throat, and that a more careful selection of colonies may reveal a still higher proportion of unit type organisms.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

April, 1920, 4, No. 2

- *Influenza and Tuberculosis. J. B. Anderson, Jr., and A. Peters, Jr., Loomis, N. Y.—p. 71.
*Use of Sodium Gynocardate "A" in Pulmonary Tuberculosis. M. Biesenthal, Chicago.—p. 84.
*Secondary Invaders of Tuberculous Lungs. J. N. Hayes, Pittsburgh.—p. 84.
Experimental Study of Action of Ultraviolet Light on Intradermic Tuberculin Reaction. E. Mayer, Saranac Lake, N. Y.—p. 100.
Classification to Facilitate Selection of Patients for Work in Tuberculosis Sanatorium. W. T. Cannon, New York.—p. 112.
Ideals in Treatment of Tuberculosis. S. A. Knopf, New York.—p. 118.

Influenza and Tuberculosis.—Anderson and Peters supplement a previous communication on epidemic influenza among patients and employees of the Loomis Sanatorium, with a further analysis of the histories of patients who had influenza before entering the sanatorium and a record of the incidence and fatality of this disease among former patients. They also give a critical review of recent literature on the subject. Of 1,227 traced former patients, seventy contracted influenza and sixteen died of the disease. Of 199 new patients admitted between Nov. 1, 1918, and Nov. 1, 1919, forty-two gave a definite history of influenza. Of these forty-two, eighteen knew they had tuberculosis prior to their influenza, while twenty-six gave a history of previous symptoms that were presumably tuberculous. In twelve cases the onset of tuberculosis was definitely postinfluenzal. The authors conclude that tuberculosis does not confer an immunity to influenza; that influenza is not less severe among the tuberculous; that among their own patients the case fatality was higher than among the general population; that among a certain number of individuals influenza marks the inception of pulmonary tuberculosis, and that to ignore and deny the possibility of pulmonary tuberculosis as a sequel is to defer unduly diagnosis and early treatment.

Sodium Gynocardate "A" in Treatment of Pulmonary Tuberculosis.—Sodium gynocardate "A" is a salt of chaulmoogra oil. It has recently been suggested as a possible remedy for tuberculosis. Biesenthal has employed it in treating ten patients. Not a single patient showed any improvement of signs or symptoms and there were no sputum changes from positive to negative. In two cases acute reactions followed the injections.

Other Bacteria in Tuberculous Human Lungs.—Hayes reports the bacteriologic findings from the study of the lungs of fifty-two tuberculous patients. A number of concomitant micro-organisms, *Streptococcus hemolyticus* and *S. viridans*, *Staphylococcus albus* and *S. aureus*, pneumococcus, *Micrococcus catarrhalis*, Pfeiffer bacillus, etc., were encountered. *Streptococcus hemolyticus* was found in a large percentage of the throats and washed sputums examined. It was also found at necropsy in the caseous areas and cavities of the same patient's lungs.

Annals of Surgery, Philadelphia

April, 1920, 71, No. 4

- *Treatment of Arteriovenous Aneurysms by Intrascapular Method of Suture (Endo-Aneurysmorrhaphy); Special Reference to Transvenous Route. R. Matas, New Orleans.—p. 403.
*Arteriovenous Fistula; Analysis of 447 Cases. C. L. Callander, Baltimore.—p. 428.
Treatment of Malignant Tumors of Thymus Gland by Radium; Report of Nine Cases. H. H. Janeway, New York.—p. 460.
Malignant Disease of Lungs; Early Recognition and Progressive Development, as Studied by Roentgen Rays; Treatment. G. E. Pfahler, Philadelphia.—p. 472.
Circumscribed Panmural Ulcerative Cystitis. F. E. Keene, Philadelphia.—p. 479.
*Hypospadias; Operation of Bucknall. J. W. Churchman, New York.—p. 486.
Projectile Fractures of Long Bones. K. Speed, Chicago.—p. 493.
*Form of Splint Available in Treatment of Fractures of Neck of Femur. H. C. Masland, Philadelphia.—p. 501.
Anhydrous Cocain Spinal Anesthesia. J. R. Wells, Philadelphia.—p. 504.

Endo-Aneurysmorrhaphy.—Matas details personal experiences which illustrate the practical application of the intrascapular method of suture which he devised and advocated for the cure of arterial aneurysms (endoaneurysmorrhaphy), and found equally advantageous in its cure of the most frequent types of the bivascular or arteriovenous aneurysms.

Arteriovenous Fistula.—The cases analyzed by Callander are taken from the literature. Although the name of the reporter is given in each instance, the bibliographic reference is otherwise incomplete.

Operation for Hypospadias.—Churchman reports a case of penoscrotal hypospadias cured by the operation of Bucknall. He also reviews all the operative procedure employed for these cases.

Splint for Fracture of Neck of Femur.—Masland's splint is made from bale strap iron bent to conform to the line of the trunk and the limb.

Boston Medical and Surgical Journal

May 20, 1920, 182, No. 21

- Doctors in Uniform. H. W. Dana, Boston.—p. 521.
Urologic Cases. W. C. Quinby, Boston.—p. 525.
Fat Transplantation After Excision of Cicatricial Contraction of Lower Jaw. W. R. Morrison, Boston.—p. 529.
*Case of Apparent Paradoxical Respiratory Arrhythmia of Heart. P. D. White, Boston.—p. 531.

Paradoxical Respiratory Arrhythmia of Heart.—A case reported by White showing a decrease in ventricular pulse rate with inspiration and exercise instead of the normal increase. The apparent paradox was caused by the production of heart block by increase of auricular rate plus depressed auriculoventricular conduction.

Bulletin Johns Hopkins Hospital, Baltimore

April, 1920, 31, No. 350

- Venous Thrombosis, Pulmonary Infarction and Embolism Following Gynecologic Operations. H. H. Hampton and L. R. Wharton, Baltimore.—p. 95.
*Fate of Bacteria Introduced into Upper Air Passages. Reaction of Saliva. A. L. Bloomfield and J. G. Huck, Baltimore.—p. 118.
*Pyelitis, Ureteritis and Cystitis Cystica. V. C. Jacobson, Madison, Wis.—p. 122.
*Apparatus for Measuring the New-Born. A. H. Schultz, Washington, D. C.—p. 131.
Unusual Case of Tuberculous Salpingitis. J. P. Greenberg, Baltimore.—p. 132.

Reaction of Saliva.—Study of freshly expectorated saliva from normal people made by Bloomfield and Huck shows that the reaction tested by the colorimetric comparison method may vary within considerable limits—6.0 to 7.3—although 80 per cent. of the specimens fell within the range of 6.6 to 7.1. The reaction varied in different individuals and in the same individual at various times apparently without any definite or constant relation to the time of day or to the ingestion of food or fluid. It was temporarily altered by mouth washes such as Dobell's solution, but only for a short time (thirty minutes). Internal administration of acid and alkali did not seem to influence the reaction of the saliva in any definite manner. Observations on a group of patients suffering from a variety of diseases showed no constant relation between the reaction of the saliva and any particular disease, although the variations covered a slightly wider range (p_H 5.8 to p_H 7.5) than was found in the case of the normal group.

Pyelitis, Ureteritis and Cystitis Cystica.—The condition described by Jacobson is a cystic inflammation of the pelvis, ureters and bladder. It occurs in persons of either sex, in 95 per cent. of cases in senile, arteriosclerotic individuals from whom a history of previous urinary inflammation or other disturbance can be obtained. Three typical cases are reported in detail, all in aged men, two of whom had a history of prostatic trouble and the third bilateral pelvic calculi. In one a double ureter was present. In view of the large number of cell "nests" of von Brunn in the ureter and bladder of senile individuals and the high incidence of urinary tract infections in the aged, Jacobson believes that cystic inflammation of these organs is relatively common in this class of patients.

Measuring the New-Born.—The apparatus designed by Schultz consists in principle of a horizontal board on which the baby is placed on its back, of one perpendicular board firmly attached to one end of the horizontal or base board, which has to be touched by the top of the head of the baby, and another (sliding) perpendicular board which can be brought into contact with the buttocks for the measuring of the sitting height or with the soles of the feet for measuring the standing height. The distance between these two perpendicular boards constitutes the required measurement and is read off from a scale attached to the horizontal board. The movable vertical board is mounted on a brass saddle, which slides on the horizontal board and holds the perpendicular board at right angles to the main axis of the base board. On each of the two lateral edges of the base board a brass strip is inlaid and one of these is ruled in millimeters from 200 to 650, zero being at the end of the base board where it meets the firm perpendicular board. The range of ruling is sufficient for measuring from the sitting height of a fetus at the end of the sixth month to the standing height of an exceptionally large new-born. The brass saddle rests with its lateral portions on the two brass strips; the center of the saddle is slightly raised to reduce friction to let only metal ride on metal. A small area on the edge of the saddle over the ruled brass strip, on a plane with the movable perpendicular board, is tapered to a knifelike edge to allow accurate reading of the scale.

Endocrinology, Los Angeles

January-March, 1920, 4, No. 1

- *Interrelation of Thyroid and Hypophysis in Growth and Development of Frog Larvae. E. R. Hoskins and M. M. Hoskins, Minneapolis.—p. 1.
- Pituitrin Test. M. Ascoli and A. Fagioli, Catania, Italy.—p. 33.
- Plea for Systematic Research Work in Anatomy, Normal and Morbid, of Endocrine System. J. A. Hammar, Upsala, Sweden.—p. 37.
- *Epinephrin in Asthma. Case of Chronic Adrenalism. G. H. Hoxie and H. T. Morris, Kansas City, Mo.—p. 47.
- *Influence of Thyroid Feeding on Physiologic Action of Pancreas. H. Hoshimoto, Tokio, Japan.—p. 56.
- *Thyroid Diabetes. G. L. Rohdenburg, New York.—p. 63.
- *Basal Metabolic Rate in Exophthalmic Goiter (1917 Cases); Description of Technic Used at Mayo Clinic. I. Sandiford, Rochester, Minn.—p. 71.
- Structure of Thyroid and Its Qualitative Variations. V. M. Buscaine, Florence, Italy, and G. Vercellini, St. Paul.—p. 88.

Relation of Thyroid and Hypophysis to Growth and Development.—The Hoskinses found that a preparation of the anterior lobe of beef hypophysis, which contains some form of iodine, 1:200,000 of fresh substance, when administered to normal frog larvae will bring about a precocious metamorphosis, resulting in the production of frogs the size of which varies with the size of the larvae at the beginning of the experiment. Such frogs have little vitality. If permitted to remain exposed to the air they die and dry down almost flat, losing their shape and there remains but a very small percentage of the original volume. When the pituitary preparation was administered to thyroidless larvae which would otherwise have remained in the larval form more or less indefinitely, a beginning of metamorphosis occurred within twenty-four hours; it progressed somewhat more slowly than in the other experiments; but it ultimately became nearly complete by the time the animals were either killed or died spontaneously. The authors regard the results obtained as due to a stimulation of natural general metabolic processes, either directly or indirectly, but the exact nature of this action is not known. The effect is both progressive, as seen especially in the skeletal and cutaneous development, and retrogressive, as seen especially in the digestive tract and tail. It is very doubtful that the action of the anterior pituitary substance is due merely to its iodine content, although such may be the case. Other tissues with traces of iodine will not produce the same effect as the pituitary. It is quite possible that the initial stimulation in hypophysis feeding is exerted on the calcium and phosphorus metabolism as is indicated by skeletal changes in these experiments, although intestinal transformation also begins very early.

Chronic Epinephrinism.—The history is recorded by Hoxie and Morris of a case of six years' duration in which the

patient had taken approximately 7 c.c. of epinephrin daily, for the most part with a hypodermic needle. She had occasionally used morphin and chloroform. Sudden death occurred. Aside from a collapsed right lung and a beginning aortic sclerosis, the chief postmortem findings were congestion of the abdominal viscera, similar to that found in animals dead from epinephrin administration.

Effect of Feeding Thyroid on Pancreas.—Feeding dry-thyroid in dosage of 0.5 to 0.1 gm. to rats resulted in a marked decrease of the diastatic activity of the pancreas varying from 40 to 92 per cent. This was accomplished by a diminution of the acidophil granules of the pancreas cells. Large doses of thyroid were more effective than small, but the effects in different animals were variable. The diastase content of the intestinal juice was also decreased in some cases by the thyroid. In such positive cases the appetite was markedly depressed and the feces were soft; in extreme cases they contained considerable quantities of fat. Thyroid feeding frequently resulted also in marked enlargement of the pancreas. In such cases the pancreatic diastase was often decreased even when the amount of food consumed and the intestinal diastase were augmented. Hoshimoto stated that the decrease cannot be ascribed to general metabolic perturbation since it frequently antedated any evidence of such. It is rather ascribed to stimulation of diastase discharge from the pancreas.

Thyroid Diabetes.—Rohdenburg cites a family in which glycosuria was increased in intensity after oral administration of either thyroid gland or suprarenal. One member of this family was cured of his glycosuria after a partial thyroidectomy. Another patient who had previously had a portion of his thyroid removed for exophthalmic goiter developed glycosuria several years later. The glycosuria in this case also disappeared after extirpation of more of the thyroid gland.

Metabolism in Exophthalmic Goiter.—In 182 cases of exophthalmic goiter before any treatment was instituted the average metabolic rate was plus 51 per cent., with an average pulse rate of 115. In thirteen patients whose average metabolic rate, as outpatients, was plus 59 per cent., with an average pulse rate of 115, the average metabolic rate fell to plus 46 per cent., and the average pulse rate to 108 as a result of approximately one week's complete rest in bed. In five patients whose average metabolic rate, determined within two to five days after they entered the hospital, was plus 59 per cent., and the pulse 118, after a further rest in bed of approximately one week's duration there was a definite improvement in their condition, as shown by a fall in the metabolic rate to an average of plus 48 per cent. and pulse to 104. The effect of a single ligation was studied in sixteen cases. The basal metabolic rate taken after the patient had had several days' rest in bed and within five days before the first ligation was plus 54 per cent. and pulse 116. One week after the single ligation the average metabolic rate had decreased to plus 44 per cent. and the pulse to 112. The effect of the second ligation is likewise a general improvement in the patient's condition as evidenced by a decrease in the metabolic rate. In twenty-two patients there was an average decrease in the basal metabolic rate from plus 46 to plus 39 per cent., and in the pulse from 115 to 107 with a gain in weight from 46.4 to 54.5 kilograms in the determinations made a few days after the second ligation as compared with the data obtained after three months' rest at home and just previous to thyroidectomy. A definite improvement from thyroidectomy in those patients who had had two ligations and a three months' rest was shown two weeks following operation by a decrease in the basal metabolic rate from plus 39 to plus 16 per cent., and in the pulse rate from 107 to 89. In another group of nineteen patients with exophthalmic goiter in whom the preliminary basal metabolic rate varied between plus 13 and plus 50 per cent., giving an average of plus 31 per cent. with an average pulse of 104, and in whom primary thyroidectomy was done without any other preliminary treatment, except for a short rest in bed, the basal metabolic rate fell, about two weeks after operation, to plus 5 per cent. and the pulse to 48.

Journal of Bacteriology, Baltimore

March, 1920, 5, No. 2

- Some Bacteriologic Aspects of Dehydration. S. C. Prescott, Boston.—p. 109.
- Report of Committee on Descriptive Chart for 1919. H. J. Conn, H. A. Harding, I. J. Klingler, W. D. Frost, M. J. Prucha and H. N. Atkins.—p. 127.
- Classification of White and Orange Staphylococci. C. E. A. Winslow, W. Rothenberg and E. I. Parsons, New York.—p. 145.
- Spectrophotometric Study of "Salt Effects" of Phosphates on Color of Phenolsulphonaphthalein Salts and Some Biologic Applications. C. L. Brightman, M. R. Meachem and S. F. Acree, Syracuse.—p. 169.
- Modification of Loeffler's Flagella Stain. I. V. Shunk, North Carolina State College.—p. 181.
- Bouillon Cubes as Substitute for Beef Extract or Meat in Nutrient Medium. Z. N. Wyant, East Lansing, Mich.—p. 189.

Modified Loeffler's Flagella Stain.—The modification of Loeffler's method proposed by Shunk differs from previous modifications chiefly in the use of a solution of anilin oil in alcohol (1:4) in connection with the ferrie-chlorid tannic acid mordant which was Bunge's modification. By using one drop of this solution with about eight drops of the ferrie tannate solution, applied together on the coverglass, all necessity of heating the mordant or the stain is obviated. The stain recommended is a special methylene blue made by adding an alcoholic solution of anilin oil (1:4) to Loeffler's methylene blue in the ratio of 1:10. The chief advantages of the process are said to be (1) its simplicity, (2) the use of solutions that keep well, (3) the use of all solutions at room temperatures, and (4) the high percentage of successful attempts, even in the hands of inexperienced students.

Journal of Urology, Baltimore

April, 1920, 4, No. 2

- *Physiologic and Pharmacologic Studies of Prostate Gland. 1. Effect of Prostate Feeding on Growth and Development of Tadpoles. D. I. Macht, Baltimore.—p. 115.
- *Case of Congenital Stenosis of Both Ureteral Orifices. I. M. Wason, New Haven, Conn.—p. 123.
- *Case of Lymphoblastoma (Lymphosarcoma) of Prostate. W. C. Quinby, Boston.—p. 137.
- Liberation of Formaldehyd from and Decomposition of Anhydromethylenecitric Acid and Its Excretion in Urine, with Comments on "Citarin" and "Helmitol." P. J. Hanzlik, Cleveland.—p. 145.
- Diagnosis of Chaneroid and Effect of Prophylaxis on Its Incidence in A. E. F. J. E. Moore, Baltimore.—p. 169.
- *Antiseptic Properties of Normal Dog Urine as Influenced by Diet. R. F. Hain, Baltimore.—p. 177.
- Gun-Shot Wounds of Urethra. J. A. C. Colston, Baltimore.—p. 185.
- *Epithelial Hyperplasia in Congenital Cystic Kidneys. C. A. McKinlay, New Haven, Conn.—p. 195.

Effect of Feeding Prostate.—The effect of feeding desiccated prostatic substance from various animals on the growth and development of a number of species of tadpoles was studied by Macht. It was found that prostate feeding tends to stimulate both the growth and metamorphosis of the larvae of the frog, toad and salamander. These observations speak in favor of an internal secretion of the prostate gland.

Congenital Stenosis of Ureteral Orifices.—Wason reports the case of a poorly nourished boy, 7 months of age, who was admitted to the hospital on account of diarrhea. Physical examination was negative. At necropsy there was found double hydronephrosis with dilated tortuous ureters which ended in cystic dilatations in the small vesical cavity. Grossly, the ureteral orifices were not visible; by serial section they were found to be stenotic and to measure from $\frac{1}{8}$ to $\frac{1}{6}$ mm. in diameter. In addition there was present a valve extending from the lower end of the verumontanum to the right urethral wall.

Lymphosarcoma of Prostate.—The early clinical picture in Quinby's case was essentially that of an acute infection, and this condition overshadowed the tumor growth which locally was of insignificant size and was interpreted only with difficulty on cystoscopic examination. Following this insidious origin, the early course and general malignancy was so great that death occurred four months after onset of symptoms. Three other cases of lymphosarcoma are recorded in the literature.

Influence of Diet on Antiseptic Properties of Urine.—Hain found that the antiseptic property of normal, drug-free dog

urine toward *B. coli* can be controlled by regulating the diet and the quantity of water ingested. If a definite quantity of liver per kilogram of body weight per day, representing a food high in protein, be fed, the bactericidal property of dog urine is inversely proportional to the quantity of water ingested. If a constant quantity of water be given daily, the germicidal property of dog urine toward *B. coli* varies distinctly with the quantity of animal food high in protein, as liver, ingested. The urine of dogs fed on bread and milk is not germicidal toward *B. coli* or *Staphylococcus albus*. Dog urine has selective germicidal action on *B. coli* when the animals are fed on animal food high in protein, since many specimens from these dogs are fatal to *B. coli* but innocuous to *Staphylococcus albus*.

Epithelial Hyperplasia of Congenital Cystic Kidney.—A case of congenital cystic kidney is reported by McKinlay in which death occurred at the end of the third decade from arteriosclerosis and cerebral hemorrhage. Epithelial hyperplasia of the convoluted tubules with giant cell formation, dilatation of the tubules, papillomatous infoldings, and bud-like sprouts characterized the histologic picture. The epithelial changes were not unlike the pictures that have been described for compensatory hyperplasia in the kidney. It is suggested that the changes in the epithelium and the tubules themselves are expressions of compensatory effort on the part of an organ whose functional capacity has been reduced by primary cystic change.

Medical Record, New York

May 22, 1920, 97, No. 21

- Evaluation of Recent Investigations Concerning Water Metabolism of Body in Relation to Digestive Disturbances and Functions of Blood. J. C. Hemmeter, Baltimore.—p. 857.
- *Splenic Hemolytic Jaundice; Case of Congenital Type. C. L. McVey, Oakland, Calif.—p. 864.
- Prophylaxis and Treatment of Gallstone Disease. S. Weiss, New York.—p. 869.
- Humped, Hooked and Bulbous Noses; Etiology and Treatment. W. W. Carter, New York.—p. 872.
- Remarkable Vitality in Larva of an Insect—*Alaus Oculatus*. R. W. Shufeldt, Washington, D. C.—p. 874.

Congenital Splenic Hemolytic Jaundice.—McVey's patient was aged 18, a female, with a wholly negative family history. Her disease was discovered in the course of a routine examination made on all entrants at the University of California. Her only symptom was lassitude. The principal blood findings were: hemoglobin, 55 per cent.; erythrocytes, 2,400,000; leukocytes, 8,900; poikilocytosis and anisocytosis; increased fragility of red cells.

Nebraska State Medical Journal, Norfolk

April, 1920, 5, No. 4

- Surgical Diagnosis; Appendicitis and Gallbladder Disease. A. D. Munger, Lincoln.—p. 93.
- Diagnosis of Prostatic Hypertrophy. E. G. Davis, Omaha.—p. 100.
- *Duodenal Ulcer in Child. G. W. Covey, Lincoln.—p. 104.
- Examination of Large Bodies of Men for Tuberculosis. W. N. Anderson, Omaha.—p. 106.
- Legitimate Role of Diagnostic Laboratory. H. E. Eggers, Omaha.—p. 109.

Duodenal Ulcer in Child.—Covey's patient was only 4 years old. The symptoms were typical. The diagnosis was confirmed by roentgen-ray examination.

New York Medical Journal

May 22, 1920, 111, No. 21

- Theory of Pneuma in Homer. J. Wright, Pleasantville, N. Y.—p. 881.
- Re-Education of Hemiplegics and Their Physiotherapeutic Treatment. P. Kouindjy, Paris.—p. 884.
- Osler: Comments and Cullings. H. S. Anders, Philadelphia.—p. 887.
- *Etiology of Neurotic Symptoms in Child of Eight. A. Stern, New York.—p. 889.
- Stammering. E. Tompkins, Pasadena, Calif.—p. 900.
- Veneral Problems in Navy. J. A. McGinn, Philadelphia.—p. 896.
- Group Study from Viewpoint of Internist. O. S. Wightman, New York.—p. 899.
- Unity of Action of Nerves, Circulation and Respiration. P. A. Kane, Chicago.—p. 904.

Neurotic Symptoms in a Child.—When Stern first saw his patient, he suffered from a tic involving the facial muscles, the head, the right arm and the right leg. These symptoms

dated back to the age of 6. He suffered also from fear, manifested mainly in his attitude toward his boy companions and his father. The first symptom which the patient showed was a cackling or crowing sound emitted on all occasions. This continued more or less intermittently for about eighteen months and was then augmented by the development of grunting or growling sounds which then supplanted to a great extent the former symptom. Blepharospasm and facial grimaces appeared, with the tic mentioned above. Stern presents his findings on psychanalysis of this patient and concludes that it was a psychoneurosis.

Northwest Medicine, Seattle

April, 1920, **19**, No. 4

Technic of Whole Blood Transfusions; Value in Association with Surgical Procedures in Treatment of Pernicious and Other Severe Anemias. N. M. Percy, Chicago.—p. 87.

*Partial Splenectomy In Treatment of Hemolytic Anemias. Experimental Study. W. C. Speidel, E. Hoff and D. H. Nickson, Seattle.—p. 94.

Treatment of Syphilis in A. E. F. J. G. Strohm, Portland.—p. 97.

Diagnostic Significance of Disturbances of Sensation from a Neurologic Standpoint. G. E. Price, Spokane.—p. 98.

Morphin Treatment of Eclampsia. D. L. Martin, San Francisco.—p. 101.

Partial Splenectomy.—Work on the dog has convinced the authors that partial splenectomy is a comparatively simple operation in the dog, that hemorrhage is readily controllable and healing occurs by primary intention. A partial splenectomy done in five cases was accompanied by a distinct polycythemia.

West Virginia Medical Journal, Huntington

April, 1920, **14**, No. 10

Tumors of Breast from Standpoint of Surgeon with Limited Equipment. J. Schwinn, Wheeling.—p. 361.

*Effect of Achondroplasia on Menstruation, Report of Two Cases. J. L. Miller, Thomas.—p. 366.

Prostatectomy. T. K. Oates, Martinsburg.—p. 368.

Pellagra. O. T. Hines, Huntington.—p. 369.

Pulmonary Tuberculosis. C. R. Woolwine. Davy.—p. 372.

Extra-Uterine Pregnancy, Report of Forty-Seven Cases. C. F. Hicks, Welch.—p. 376.

Effect of Achondroplasia on Menstruation.—The characteristics common to Miller's cases were: both patients presented the typical appearance of achondroplasia; both had mothers slightly under the normal female stature, but perfectly normal in every other way; both were members of large families, their brothers and sisters being normal; no history of other dwarfs in either family, and no evidence of thyroid trouble in either patient or any member of their respective families. One patient, aged 26 years, began menstruating at the age of 2 weeks and continued regularly at twenty-eight day intervals until the age of 24 when she went into the menopause with characteristic nervous and physical phenomena of this condition in the normal female. Pubic hair appeared at about 5 or 6 years of age and at the same time the facial appearance became that of a mature adult. The second patient, aged 25 years, had no indication of the menstrual flow until 21, though for several months preceding the flow there was a sort of general malaise for a few days at from four to six week intervals. Development of the breasts, and pubic and axillary hair appeared about the twelfth or fifteenth year.

Wisconsin Medical Journal, Milwaukee

April, 1920, **18**, No. 2

Need of Complete Medical Course at State University. C. R. Bardeen, Madison.—p. 449.

Effort Syndrome Among Drafted Men at Recruit Depot. L. M. Warfield, Milwaukee.—p. 453.

Incidence of Heart Lesions in Military Service. O. E. Lademan, Milwaukee.—p. 456.

*Suggestions for Treatment of Fracture of Radius and Ulna at Middle Third. C. H. Lemon, Milwaukee.—p. 465.

Treatment of Fracture of Radius and Ulna at Middle Third.—Lemon treats all these fractures, without exception, in a supine position with the palm of the hand up so that a plane passed horizontally through the arm and hand would divide the arm and hand into anatomically correct position

of an anterior and posterior surface. In 90 per cent. of the cases he has found plaster of Paris to be the most efficient dressing. The cast is doubly reinforced at the point of fracture and overcorrected, that is, slightly bowed in the direction of extension to the thickness of the plaster, over the site of the fracture. Plaster of Paris should not be used in the treatment of these cases as a primary dressing. It will lead to disaster. For the first four or five days during which the swelling will reach its height, ordinary coaptation splints may be used, the point opposite the fracture being doubly padded to produce overcorrection, and for this primary it is not necessary in my experience to use a splint which extends beyond the elbow joint, but at the end of five days, when the swelling is absolutely under control and when it has usually begun to recede, to treat these cases with a splint or any form of apparatus which does not extend above the elbow joint up the arm to at least one third of its length, Lemon says is to be guilty of gross error.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 24, 1920, **1**, No. 3095

*New Views on Pathology, Diagnosis and Treatment of Gastric and Duodenal Ulcer. A. F. Hurst.—p. 559.

*Surprises in Diagnosis. E. L. Spriggs.—p. 563.

*Results of Peptone Treatment of Asthma. A. G. Auld.—p. 567.

*Myoclonic Form of Epidemic Encephalitis. P. Boveri.—p. 570.

Gastric and Duodenal Ulcer.—Hurst is convinced that there is one type of stomach in which a gastric ulcer will develop and another type which is likely to lead to ulceration of the duodenum, if the necessary exciting causes are present, but the latter will not give rise to ulceration at all in an individual with the average normal type of stomach. He believes also that the association of chronic appendicitis with both acute and chronic gastric and duodenal ulcer is too common to be a coincidence, and the greatly diminished tendency to relapse, especially of acute ulcers, following removal of the appendix without interfering with the ulcer, shows that the appendicitis is the primary condition. It probably leads to ulceration in much the same way as the first of the two channels described in connection with dental infection. He is convinced that the tendency to develop a duodenal ulcer is increased by excessive smoking; the nicotin apparently acts through the autonomic nervous system, and increases the hypertonus and hypersecretion of the stomach.

Value of History in Diagnosis.—The diagnoses made in 500 cases are analyzed by Spriggs with reference to their correctness. By means of the history, symptoms, signs, and general condition of the individual patient, an accurate diagnosis was made in 40 per cent. of 500 patients. In over half of the series of 500 cases the preliminary clinical diagnosis was modified or changed after routine investigations had been made.

Peptone Treatment of Asthma.—This treatment has been instructive in respect of the grouping of asthmatic cases. Two main groups occur which show no tendency to pass into each other. One group comprises such as quickly respond to the treatment, and the effect is more or less lasting, the recurrences being infrequent and milder in character. The other group is resistant, and is subdivisible into such as are totally resistant and those in which, by careful immunization, the disease may be largely overcome. Cases of each group are reported in illustration of the treatment and its results.

Myoclonic Epidemic Encephalitis.—Two cases of epidemic encephalitis are reported by Boveri in which the symptoms were not lethargy, but excitement, delirium and myoclonic contractions.

May 1, 1920, **1**, No. 3096

*Bronchiectasis. A. J. Jex-Blake.—p. 591.

Epidemiology of Phthisis. W. Gordon.—p. 594.

*Antimony Intravenously in Filariasis. L. Rogers.—p. 596.

Cycloplegia in Routine Refraction Work. N. B. Harman.—p. 598.

Treatment of Malaria. W. S. Dawson.—p. 600.

Case of Tuberculous Meningitis with Complete Recovery. H. Barber.—p. 601.

Bronchiectasis.—Among 29,700 patients admitted to the Brompton Hospital during the last twenty years a clinical diagnosis of bronchiectasis was made in 567, or 1.9 per cent. Jex-Blake is of the opinion, however, that bronchiectasis was present in fully 5 per cent. of the patients admitted. The primary disorder from which it resulted in 105 fatal cases so far as could be judged from the histories and postmortem examinations was: chronic bronchitis, 41 cases; pleurisy or pneumonia, 27 cases; bronchial obstruction by a new growth, 27 cases; by foreign body, 6 cases; by aortic aneurysm, 3 cases; by syphilitic stenosis, 1 case. The most interesting of the complications of bronchiectasis is intracranial abscess, fifteen instances of which occurred in 108 fatal cases of the disease. The abscesses were cerebral in nine instances, cerebellar in three, both in two, and in one case meningitis and ependymitis were present, but no intracranial abscess was located. The abscess was single in nine patients, multiple in six, and in one instance from twenty to thirty abscesses were present throughout the brain. In addition two cases of secondary intracranial new growth were recorded in this series: one patient had a primary new growth at the root of the left lung, with secondary deposits in the pancreas and brain; the other a primary endothelioma of a pulmonary alveolus compressing the left bronchus, with secondary growth in the brain. Apart from these intracranial complications, the common complications of bronchiectasis are inhalation or aspiration bronchopneumonia, empyema, gangrene and abscess of the lung, and old or recent pulmonary tuberculosis. The most frequent causes of death were: bronchopneumonia, 34 cases; exhaustion, 34 cases; exhaustion and asphyxia, 8 cases; intracranial abscess, 15 cases. The pathogenesis, symptoms, diagnosis and treatment are discussed in detail.

Antimony in Filariasis.—The results recorded by Rogers appear to indicate that intravenous injections of soluble antimony salts have a definite effect in greatly reducing or causing the disappearance of the filarial embryos from the peripheral blood, presumably as a result of the destruction of the adult filaria, as the effect may last in some cases in an increasing degree for several months after cessation of the treatment. Moreover, clinically favorable results have been obtained in a few cases of filarial fever and elephantiasis. Rogers cautions, however, that as a rather long course of intravenous injections of a highly toxic drug is required to produce this effect, the new method of treatment requires care in its use, and much further experience will be necessary before its precise value can be decided.

Bulletin of Naval Medical Association of Japan, Tokyo

February, 1920, No. 27

- *Typhoid and Paratyphoid Triple Lipovaccine or T, A, B-Lipovaccine. K. Ujiie.—p. 1.
- *Therapeutic Effect of Lemongrass Oil on Skin Diseases Caused by Animal Parasites. S. Takasugi.—p. 2.
- *Case of Erythrocytosis. T. Kanematsu.—p. 3.

Triple Typhoid and Paratyphoid Vaccine.—Ujiie has prepared a triple lipovaccine of typhoid and paratyphoid A and B bacilli by mixing their agar culture first with lanolin and, then, when the mixing was complete, with liquid paraffin. Compared with normal vaccine the lanolin paraffin vaccine has stronger local reaction and lower toxicity. The protecting power for guinea-pigs, protecting substance and agglutinin in the blood serum of inoculated rabbits appear later than in the normal vaccine, but their level is higher and their existence longer. In comparison with the sweet oil vaccine it has the disadvantage of having stronger local reaction and higher toxicity. It has, however, the advantage of being prepared more easily and of being superior as to protecting power for guinea-pigs, and in agglutinin and protecting substance in the serum of inoculated rabbits, while there is no substantial difference between these two vaccines in their capacity for producing complement binding substance.

Lemongrass Oil a Parasiticide.—According to Takasugi, lemongrass oil has a specific beneficial effect on skin diseases caused by animal parasites. Among volatile vegetable

oils lemongrass oil has the most toxic effect on insects. The principal toxic ingredient against insects in lemongrass oil appears to be citronella. No insects intoxicated by volatile vegetable oils beyond a certain limit can survive.

Erythrocytosis.—The number of the red blood corpuscles in Kanematsu's case was always greater than 8.2 millions, with many corpuscles slightly deformed and a hemoglobin index of about 0.65.

Japan Medical World, Tokyo

March 13, 1920, 10, No. 11

- Influence of Starvation on Cerebral Cortex. S. Okazaki.—p. 225.
- Changes in Thymus that Occur in Infectious Diseases. K. Takeuchi.—p. 226.

March 20, 1920, 10, No. 12

- Toxin and Antitoxin of B. Influenza. Y. Watanabe.—p. 245.
- Treatment of Laryngeal Tuberculosis with Autogenous Serum. U. Yoshii.—p. 245.
- Serology of Semen. F. Ishiwara.—p. 245.
- Anthropology of Civilized Man. Arthur Macdonald.—p. 246.

March 27, 1920, 10, No. 13

- Changes in Thymus in Infectious Diseases. K. Takeuchi.—p. 267.

Lancet, London

April 24, 1920, 1, No. 17

- *Higher Fungi in Relation to Human Pathology. A. Castellani.—p. 325.
- Maternity and Child Welfare Work. H. C. Cameron.—p. 901.
- *Treatment of Syphilis by Antisyphilitic Serum of Query. J. D. Bransky and T. Thompson.—p. 903.
- *Recurring Sarcoma of Ileum. W. H. Battle.—p. 905.
- Infantile Diarrhea and Vomiting. G. D. Sherwood.—p. 906.
- *Heart-Block: Twenty Cases. J. Strickland Goodall.—p. 909.
- Congenital and Hereditary Defects in Recruits. J. S. Manson.—p. 909.
- Three Cases of Rupture of Spleen. C. M. Plumtre.—p. 911.
- Congenital Malformation of Large Intestine. H. H. Gellert.—p. 911.

Intestinal Fungi in Man.—The so-called intestinal mycoses, discussed by Castellani are: (1) thrush; (2) bronchomycoses; (3) tonsillomycoses; (4) certain mycoses of the nervous system and organs of special sense; (5) certain mycoses of the urogenital system.

Query Serum in Treatment of Syphilis.—Query serum is prepared by inoculating monkeys with the filtered cultures of the organism of syphilis on bouillon. When the serum of the monkeys gives a strong positive Wassermann reaction, the animals are bled and the serum is collected and preserved in ampoules. The authors report three cases treated with Query's serum after complete failure of the recognized methods of treatment to give relief from symptoms. The relief of symptoms was marked. The cases were: (1) gummatous ulcers of the leg of long standing with hyperkeratosis and deafness; (2) tabes dorsalis with pronounced ataxic symptoms; (3) tabes dorsalis with intractable lightning pains.

Recurring Sarcoma of Ileum.—Battle's patient, a girl, aged 8, had two attacks of intussusception. At operation no tumor was found, nor did the sarcoma develop at the site of either of the attacks of intussusception. In the second attack a thickening was found, of an inflammatory character, at the apex of the intussusception, but when operation was performed five and one-half months later the growth had not increased but diminished in size. The tumor encircled the small bowel, but did not quite occlude its lumen. The mesenteric glands were enlarged over a large area. The portion of gut affected by the growth was excised and the incision carried into the mesentery so as to remove as many glands as possible, and an end-to-end anastomosis was carried out. The glands were much too numerous for a complete operation. The liver was normal. The growth was a round cell sarcoma. Coley's fluid was used for three months. There was some reaction. Another operation was done in 1916. As a resection of the growth involved division of the bowel close to the ileocecal valve, it was thought best to close both ends and join the lower end to the ileum by lateral anastomosis to the lower part of the rectum. Many glands were scattered about the mesentery. The patient was first seen in December, 1913. In March, 1920, there was no evidence of recurrence. The patient had grown considerably and enjoys good health.

Heart Block.—The main points brought out by Goodall are: (1) the relative infrequency of a rheumatic or syphilitic history; (2) the almost invariable association of the condition with mitral regurgitation; (3) the tending to sudden death on gastric distension or exertion; (4) the occurrence of Stokes-Adams "fits" when the heart block is complete; (5) the frequency of pain as a symptom; (6) the possibility of the condition being transmitted from mother to child; (7) the ability of some patients to work or even to stand severe operations.

May 1, 1920, 1, No. 18

- *Higher Fungi in Relation to Human Pathology. A. Castellani.—p. 943.
- *Pellagra Outbreak in Egypt. 1 Pellagra Among Ottoman Prisoners of War. A. D. Bigland.—p. 947.
- *Intracardiac Pressure as a Standard in Cardiotherapy. I. Harris.—p. 954.
- *Two Cases of Intramedullary Tumor of Spinal Cord; Operation. A. Feiling.—p. 957.
- Novocain Anesthesia: Disadvantages from Surgical Standpoint. G. H. C. St. G. Griffiths.—p. 960.

Treatment of Tenia Imbricata Infestation.—The best routine treatment employed by Castellani for this disease is resorcin dissolved in compound tincture of benzoin (resorcin, 2 drams; compound tincture of benzoin, 1 dram). It is interesting to note that resorcin in ointment or in alcoholic solution has practically no action, and that compound tincture of benzoin alone has also practically no action, but when the resorcin is dissolved in the tincture good results are obtained.

Etiology of Pellagra.—Bigland claims that there is some evidence to show that pellagra is a syndrome which occurs most often in the underfed, using the expression in its scientific sense, and sometimes in the well fed. This syndrome may vary in character, according as the food deficiency is from without or from within. Just as perilobular cirrhosis of the liver may occur in those who have drunk spirits to excess and in those who have never had a drop of alcohol in their lives, due, as it is supposed, to some derangement of the intestine, so may pellagra occur in the underfed and in the well fed for a similar reason. In the treatment of these patients Bigland has used to good effects Fowler's solution in increasing doses, epinephrin and a liberal increase in diet.

Intracardiac Pressure and Heart Failure.—Harris points out that two factors are concerned in the production of heart failure: the condition of the heart muscle and the intracardiac pressure. A moderate intracardiac pressure acting on a damaged heart might suffice to produce heart failure. An abnormally high intracardiac pressure acting on a healthy muscle should, theoretically at any rate, also be able to induce heart failure. To remedy such an abnormal condition either of two courses is open: decrease the intracardiac pressure or strengthen the heart muscle. Heart failure must be divided into two distinct types, with a characteristic group of symptoms for each. One type is commonly met with in young people with a moderate degree of hypertrophy of the left ventricle, the arterial blood pressure, which is never unduly high with these patients, becoming lowered along with failing compensation; the heart is dilated and the pulse frequency high. The most striking feature of this type of heart failure is the normal condition of the arteries and the peripheral circulatory apparatus in general. The other type of heart failure is common in patients who show either pronounced hypertrophy of the left ventricle or sclerosis of the heart muscle with a high arterial blood pressure. The most striking feature in this form of failing heart is the sclerosis of the arteries and the general pathologic condition of the peripheral circulatory apparatus. Digitalis is indicated in cases which show the first type of heart failure. The dose can be regulated by taking as a guide the state of the intracardiac pressure. In the second type of heart failure digitalis is not indicated. In the first type of heart failure the ideal treatment is one which lowers the intracardiac pressure and at the same time leaves the arterial pressure unaltered. Caffein seems to have all the properties required. Unfortunately, many patients cannot take caffein for any length of time on account of the nervous excitability which this drug

induces. Atropin, by increasing the pulse frequency, diminishes considerably the intracardiac pressure. It is a good plan to treat the patient alternately with caffein and atropin. As soon as the pulse rate is considerably increased the intracardiac pressure falls proportionately. Small doses of digitalis are useful now, the drug to be continued till there is evidence of a considerable rise in intracardiac pressure.

Tumors of Spinal Cord.—The tumor in one of Feiling's cases was a psammoma of eight years' duration, the tumor in the second case was a glioma with symptoms of acute onset. The clinical course of each case is discussed in detail.

Medical Journal of South Africa, Johannesburg

February, 1920, 15, No. 7

- *Case of Diffuse Endothelioma of Pia-Arachnoid. J. H. H. Pirie.—p. 157.
- Case of Lipodystrophia Progressiva. L. Leipoldt.—p. 161.
- Case of Muscular Tremor (War Neurosis) Cured by Hypnotism after Three Years. H. Goodman.—p. 164.

Endothelioma of Pia-Arachnoid.—A correct diagnosis was made in Pirie's case, and appropriate palliative operative measures were followed. The diagnosis was tumor in the region of the cerebelloptine angle, probably on the left side. A decompression operation was performed. The lateral ventricles were drained at the same time. The patient survived the operation for a few days. There was a diffuse meningitis-like thickening of the pia-arachnoid due to an infiltration by endothelial cells. These were also found to have densely infiltrated several of the nerve roots, while columns of them could be traced from the pia into the brain substance, particularly the cerebellum and pons.

Tubercle, London

January, 1920, 1, No. 4

- Tuberculosis Problem in Life Assurance. O. May.—p. 161.
- Probability Diagnosis of Phthisis. D. M. Barcroft.—p. 171.
- Diagnosis of Pulmonary Lesions in War Time. T. Campbell.—p. 173.

February, 1920, 1, No. 5

- Treatment of Pulmonary Tuberculosis by Surgical Intervention. H. M. Davies.—p. 209.
- *Dispensary Treatment of Phthisis. What It May Achieve. H. A. Ellis.—p. 219.

Dispensary Treatment of Phthisis.—From a four years' study of tuberculosis in a county of about 125,000 people, Ellis concludes: (1) The dispensary system, properly carried out, should be the main first line of defense against tuberculosis, as being both essentially efficient and economic. (2) Sanatoriums for early cases are both valuable and necessary as a direct aid to dispensary treatment. (3) The whole question of the theories of advanced tuberculosis should be reconsidered. (4) An effort should be made to find out how much acute pulmonary tuberculosis exists (an almost incurable condition, killing usually within twelve months of first symptoms). (5) The reason for the failure of early notification should be investigated. (6) The present form of statistics should be revised; as at present published they are useless for comparison purposes.

March, 1920, 1, No. 6

- Etiology of Silicosis. E. L. Middleton.—p. 257.
- *Relation Between Valvular Disease of Heart and Pulmonary Tuberculosis. G. T. Calthrop.—p. 263.

Relation Between Valvular Disease and Pulmonary Tuberculosis.—Calthrop has worked through the records of 1,097 postmortem examinations made at the City of London Hospital for diseases of the chest between 1889 and 1919. These represent cases of pulmonary tuberculosis and valvular disease of the heart. These 1,097 cases showed tuberculosis of the lungs or valvular disease of the heart or both; 713 showed tuberculosis only; 355 showed valvular disease only; twenty-nine showed both. The preceding histories had been as follows: rheumatic fever, five cases; rheumatic, scarlet and typhoid fevers, one case each; histories not definite for classification, twenty-one cases. The cardiac lesions were distributed as follows: mitral lesions, fifteen cases; mitral and aortic lesions, nine cases; aortic lesions only, nine cases.

Bulletin de l'Académie de Médecine, Paris

March 23, 1920, 83, No. 12

- *Work of the American Red Cross in France. M. Letulle.—p. 272.
- *Influence of Calcium on Glycosuria. A. G. Phocas (Athens).—p. 284.
- Reproductive Forms in Man of the Spirochete of Relapsing Fever. Ardin-Delteil and Derrieu.—p. 286.

Work of the American Red Cross in France.—Letulle gives a detailed account of the work accomplished by the American Red Cross in France since the United States' entry into the war. The vote expressing grateful appreciation by the Académie was mentioned in the Paris Letter, page 1339.

Influence of Calcium on Glycosuria.—Phocas ascribes to restoration of the normal balance between the sodium ions and the calcium ions the subsidence of the glycosuria on a strict milk diet. This, and the disappearance of the glycosuria, in experimental glycosuria, after injection of calcium chlorid, and other experiences of the kind, suggest that calcium salts might be preferable to sodium bicarbonate in treatment of diabetes. The nine cases he reports here seem to sustain this view. He chose lime water for the purpose, theorizing that any excess of calcium would aid in oxidation processes, instead of checking them as seems inevitable with the carbon in sodium bicarbonate.

March 30, 1920, 83, No. 13

- *Treatment of Lethargic Encephalitis. A. Netter.—p. 303.
- *Starvation of Pigeons Fed with Hulled Rice. A. Lumière.—p. 310.
- *Syphilis of the Heart. C. Oddo and C. Mattei.—p. 313.
- Case of "Automatic" Sculpture. Laignel-Lavastine and Vinchon.—p. 317.
- Prophylaxis of Tuberculosis among Children in Rennes District. Follet.—p. 319.

Treatment of Epidemic Encephalitis.—Netter comments on the analogy between this disease and epidemic poliomyelitis, although they are separate entities. Treatment along the same lines is indicated for both, that is, intraspinal injection of convalescents' serum for its specific, and hexamethylenamin for its general bactericidal action, with a fixation abscess to reenforce the natural defensive forces. However, he says, the time has not come yet for intraspinal serotherapy as the presence in the blood of antibodies neutralizing the virus has not yet been demonstrated with the encephalitis, as it has been demonstrated for poliomyelitis. Another reason is that the virus is in the nerve centers only for a brief period in poliomyelitis, while this may keep up for three months in the epidemic encephalitis, and we do not know how early it appears in the blood in the latter. He gives the hexamethylenamin by the mouth in fractionated doses in treatment of all meningitic conditions and poliomyelitis, and commends it for epidemic encephalitis although not absolutely certain of its efficacy as yet. He knows of a case in which arsphenamin treatment was tried with disastrous effect. On the other hand, jaborandi or pilocarpin seems to aid by promoting elimination of the virus through the saliva as in rabies; in 4 of his 72 cases the salivary glands were swollen, and exaggerated salivation was manifest in a number of others. He gives epinephrin with the jaborandi to counteract its depressing effect. In the 27 patients treated with injection of 1 c.c. of turpentine, an abscess developed in 19 and all these recovered except one pregnant woman. In 13 of the cases the condition was so grave that hope had been abandoned. In 14 of the 19 cases reacting with abscess production, the encephalitis was of the myoclonia type. In 25 grave cases in which no attempt had been made to induce the fixation abscess, more than 50 per cent. died. Hippocrates noted that those who escaped the "lethargus" were generally those who had developed a suppurative process, and when Fochier applied the turpentine abscess as a therapeutic measure, he explained its efficacy by its attracting the virus to the spot. Netter ascribes it to a stimulating action on the organs which provide the natural means of defense; myelocytes appear in the blood, demonstrating the participation of the bone marrow. It is probably, he remarks, by a similar mechanism that vaccines, serums and nucleinates exert their action. Another patient with extremely grave epidemic encephalitis recovered after the development of a spontaneous deep abscess in the buttock.

Rôle of Vitamins in Nutrition.—Lumière concludes from the death of pigeons fed on polished rice that they starve to death from lack of appetite, and that this is the result of stagnation of the ingested rice from lack of secretions to aid in digesting it and passing it along in the alimentary canal. The digestive and mucus glands seem to require for their physiologic functioning the stimulus from substances in the hulls of rice. The vitamins, consequently, seem to serve as stimulants for the external secretions. This conception of the rôle of the vitamins throws light on many obscure phenomena.

Syphilitic Pericarditis.—Oddo and Mattei describe a case of sudden pericarditis and asystolia in a man of 54 in the second stage of syphilis. The condition improved under neo-arsphenamin, but the four injections in a little more than a month may have been a factor in the fatal pulmonary edema which developed then, about three months after the first heart symptoms. It is safer to restrict treatment to mercury in these cases.

Bulletin Médical, Paris

April 3, 1920, 34, No. 19

- *Surgical Scarlet Fever. Hutinel.—p. 323.

Surgical Scarlet Fever.—Hutinel relates that there have been 139 cases of scarlet fever in the surgical wards of the Children's Hospital at Paris in the last few years. It retards the healing of the operative wound or burn and almost invariably entails suppuration and a serious general condition. In several of the twelve cases of severe burns, the injury had resulted from mustard plasters applied to chest and back. One child had cast off the mortified tissues from such a burn when scarlet fever developed and the granulations became necrotic. The results are especially disastrous when the scarlet fever develops after an operation for hare-lip or cleft palate; the tissues become necrotic, and the operation not only is a total failure but conditions are so modified that it is more difficult to attempt it again later. Closed lesions, like fractures or tuberculous processes, escape this evil influence from the scarlet fever; it seems to be only the open lesions that suppurate. His description of the dire influence of scarlet fever as a complication of an operation suggests that no pains should be spared to ward it off. This could be accomplished by isolating the child for six or seven days before attempting a plastic operation, and continuing the isolation afterward until the wound has healed. After this has occurred the danger from intercurrent scarlet fever is materially less.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 20, 1920, 44, No. 7

- Lethargic Encephalitis. Courcoux and others.—pp. 223, 230, 232, 237, 244, 246, 260, 262.
- Jaundice after Arsphenamin Treatment is Due to Syphilis of the Liver. G. Milian.—p. 226.
- Encephalomalacia with Leukoeytosis in the Spinal Fluid, Simulating Lethargic Encephalitis. E. Baudouin and P. Lantuéjoul.—p. 241.
- *Isolated Paralysis of Serratus Magnus. Villaret and others.—p. 248.
- Malarial Hemiplegia. P. Deseamps and Querey.—p. 255.
- Paralytic Reaction of Small Arteries in Serum Sickness. G. Etienne and G. Richard.—p. 257.
- *Epidemic Hiccup. H. Dufour.—p. 263.

Isolated Paralysis of the Serratus Magnus.—The case reported by Villaret and his co-workers, they say, is the forty-second to be recorded. In their case the paralysis followed difficult labor in which the woman kept pulling on the head of the bed with her hands.

Epidemic Hiccup.—Dufour ascribes the persisting hiccup with fever to the prevailing epidemic of encephalitis. He knows of eight cases of the kind, and in one case the phase of hiccup was followed by myoclonia and other symptoms of epidemic encephalitis with stupor and death. In the other cases the hiccup subsided in from one to four days either spontaneously or under various measures, such as sedatives, to check the tendency to spasms, or repeated lavage of the stomach.

Feb. 27, 1920, 44, No. 8

- Alternating Scoliosis with Sciatica. Ducamp and Carrieu.—p. 265.
 Epidemic Encephalitis. H. Claude and others.—pp. 267, 269, 275, 279.
 *Pseudomalarial Gonococcemic Fever. M. Bloch and P. Hébert.—p. 277.
 Isolated Congenital Dextrocardia. Laubry and Esmein.—p. 281.
 *Induced Typhoid Abscesses. F. Rathery and Bonnard.—p. 285.

Gonococcemia Simulating Meningococcemia.—Bloch and Hébert report a case of febrile gonococcemia of the pseudomalarial type with arthralgia and eruption which simulated the clinical picture of meningococcemia but showed no response to antimeningococcus serotherapy. A vaccine was then prepared with the diplococcus cultivated from the blood, and immediate improvement in the above symptoms followed its subcutaneous injection. The vaccine, however, had no effect on the urethritis and epididymitis of the chronic gonorrhea.

Induced Typhoid Abscess.—In one of the two cases reported the abscess developed three weeks after an appendectomy at the site of the incision during the course of typhoid. In the other case the abscess developed at the points where turpentine had been injected in typhoid to induce a fixation abscess, twenty-seven days before, but there had been no reaction at the time. The patients were girls of about 16. In the discussion that followed this report, Widal mentioned cases of typhoid abscesses developing at the points where caffeine or saline had been injected during typhoid, and related that a Paris physician had recently been summoned to court because two of his patients developed abscesses at the points where camphorated oil had been injected by a trained nurse. Netter testified on his behalf that abscesses are liable to develop notwithstanding scrupulous antisepsis.

Grèce Médicale, Athens

July-October, 1919, 21, Nos. 8-10

- *Tuberculosis in Greece, 1899-1914. P. J. Rondopoulos.—p. 41.
 *Traumatic Insufficiency of Aortic Valves. S. Livieratos.—p. 53.
 The Leukocytosis in Typhus. G. J. Stefanopoulou.—p. 61.

Tuberculosis in Greece.—Rondopoulos cites official statistics which show a total death rate from tuberculosis during the last sixteen years in the twelve largest towns of Greece of 3.21 per thousand inhabitants. This is one seventh of the total mortality, and it has been increasing in the last few years. He ascribes this to the return of tuberculous emigrants, especially from America.

Traumatic Valvular Disease.—Livieratos reviews the literature on this subject and reports two cases in which previously healthy men of 42 and 38 after a physical effort or contusion developed symptoms of aortic insufficiency. In the younger man the traumatism was insignificant, merely stooping to pick up a pen. He perceived at once a strange sound, starting in the epigastrium and spreading, as he said, to the left ear, but there was no sense of oppression, no pain and no dyspnea or tachycardia until several months later. The aortic insufficiency became very pronounced by the end of the tenth month, completely incapacitating him. In this case the murmur was the first and for a time the only symptom of the lesion of the aortic valves. Livieratos compares these cases with those on record, including Hektoen's case.

Journal de Médecine de Bordeaux

April 10, 1920, 91, No. 7

- Necropsy of a Violator of a Young Girl. Pitres and Lande.—p. 167.
 Acute, Diffuse, Epidemic Encephalomyelitis. Creyx.—p. 171.
 *Scrofulous Keratitis of Vascular Type. Bonnefon.—p. 173.

Vascular Keratitis.—Bonnefon recalls that normally the cornea is a tissue entirely deprived of blood vessels. If blood vessels occur under pathologic conditions they may be either part of a process of attack or of defense. Scrofulous keratitis differs from phlyctenular keratitis in that the initial nodules, the phlyctenules, are absent, but instead an early vascularization indicates that the cornea is the seat of a pathologic process. This vascularization, associated with local and general symptoms of scrofula, will furnish the diagnosis. The affection left to itself progresses rapidly, with various alternations in the intensity of the painful symptoms. It ends in sclerosis if the vascularization is not arrested. This can be readily brought about, Bonnefon finds, by means of the galvanocautery.

Médecine, Paris

March, 1920, 1, No. 6

- *Present Status of the Pathology of the Circulatory Apparatus, Blood and Kidneys. P. Ribierre.—p. 325.
 *Third Heart Sound. C. Lian.—p. 333.
 *Functional Valvular Insufficiency. C. Esmein.—p. 336.
 *Clinical Value of Viscosimetry of the Blood. O. Josué.—p. 341.
 *Angina Pectoris. L. Gallavardin.—p. 344.
 *Intermittent Claudication. J. Heitz.—p. 348.
 *Sphygmomanometry. Mougeot and R. Giroux.—p. 350.
 *Familial Hemophilia. P. E. Weil.—p. 354.
 Diagnosis of Aleukemic Lymphadenia. P. Harvier.—p. 359.
 *Renal Infection of Intestinal Origin. A. Lemierre.—p. 361.
 The Prognosis in Acute Nephritis. P. Merklen.—p. 365.
 *Uremia in Chronic Nephritis. Pasteur-Vallery-Radot.—p. 368.
 Medical Indications for Blood Transfusion. Ribadeau-Dumas.—p. 373.
 Treatment of Grave Forms of Cardiac Insufficiency. Leconte.—p. 375.
 *Extrasystolic Arrhythmia. E. Donzelot.—p. 379.
 *Paroxysmal Tachycardia. E. Donzelot.—p. 379.
 *Paroxysmal Hemoglobinuria. L. Giroux.—p. 381.

Pathology of the Cardiovascular System and of the Kidneys.—Ribierre expatiates on the necessity for giving our patients the advantages of the newer methods of exploration, and urges group acquisition of apparatus for electrocardiography, orthodiagraphy, etc. He remarks parenthetically that in all Paris there are only two public hospitals now equipped for electrocardiography, and these owe it to the private initiative of their chief of the service. He suggests that medical societies might acquire equipment of the kind in smaller centers, accessible to the general practitioner, and appeals to the profession at large to plan to continue in some way the special laboratories and special centers which the medical department of the French army organized during the war, and which proved of such inestimable advantage. The information to be derived from the Ambard ureosecretory index is also extremely valuable, but it requires such accuracy that the findings are reliable only when entrusted to experts, another argument in favor of the diffusion of special laboratories.

Among the recent works on the pathology of the kidneys, Widal and his followers attribute all permanently high arterial blood pressure to kidney lesions. But Ribierre protests against this as too sweeping, or at least premature. High blood pressure in the forties does not always yield proof of a renal origin, not even at necropsy in cases of fatal meningeal hemorrhage. A suprarenal origin has not been demonstrated as yet, and the cases of supposed acute war nephritis sometimes proved free from any kidney lesion of appreciable kind. Such facts testify that we have much to learn yet in regard to the pathology of the kidneys.

The Third Sound of the Heart.—Lian warns that the third sound of the heart is a physiologic phenomenon, and must not be confused with the abnormal second sound with mitral stenosis.

Functional Valvular Insufficiency.—Esmein remarks that the auriculoventricular valves are more liable to become insufficient from dilatation of the ventricles than the other heart valves. Although this insufficiency theoretically would seem to aggravate the insufficiency of the heart, in reality it does not have this effect but rather lightens the work of the heart, throwing more of the task on parts less used. With extreme dilatation of the heart, digitalis may fail, and nothing but exceptionally active heart stimulants, such as ouabain will answer. He advocates giving it by the vein, saying that this should be the routine procedure with functional insufficiency developing suddenly, when digitalis is sure to fail. There is no relief here except from venesection and ouabain.

Viscosimetry of the Blood.—Josué explains that the findings are unreliable unless the blood has first been rendered incoagulable.

Angina Pectoris.—Gallavardin states that there were only 7 women among his 100 cases of angina pectoris, and only 2 of the total series were in hospital patients. About 4 per cent. of the patients were under 40, and 29 per cent. over 60. There was no reason to suspect syphilis in 63 per cent. In addition to the classic measures, he advises moderate and repeated doses of neo-arsphenamin or mercury or iodid by the

rectum on the faintest suspicion of syphilis, adding that digitalis may render useful service when symptoms of insufficiency of the left ventricle complicate the clinical picture, or theobromin, when there is renal insufficiency.

Intermittent Claudication.—Heitz expatiates on the importance of the Pachon oscillometer in estimation of intermittent claudication, and gives interpretations of its findings.

Sphygmomanometry.—Mougeot and Giroux reiterate that only repeated and prolonged records of the maximal and minimal blood pressures are instructive. A single record may prove entirely misleading.

Hemophilia.—Weil remarks that whereas formerly only 11 per cent. of the young with hemophilia lived to the age of 21, the prognosis has been transformed in late years by serum treatment. In his own practice during the last fifteen years he has not lost one of his more than fifty bleeder patients. The tendency to hemophilia is clinically and sometimes anatomically corrected by subcutaneous injection every two months of 20 c.c. of animal or human blood serum. The serum has pronounced local action, arresting hemophilic hemorrhage when gauze impregnated with serum is pressed on the bleeding wound, first cleaned of clots, etc. Transfusion of blood is likewise useful, but as the procedure has to be repeated so often, the serum should be given the preference. Nolf has reported success with repeated subcutaneous injection of 5 or 10 c.c. of a 5 per cent. solution of peptone. Weil adds in conclusion that thyroid, ovarian and suprarenal treatment, calcium chlorid and gelatin are ineffectual in familial hemophilia and should be abandoned, and he theorizes that it must be regarded as a congenital functional malformation of the elements in which the blood and the vessels originate.

Nephritis of Intestinal Origin.—Lemierre urges examination of the intestines as the first step in kidney disease of obscure origin. It is useless to treat the kidney and leave the focus in the bowel unmolested. As a rule, suppurative processes in the kidney and bladder heal quickly unless the bowel focus maintains or keeps starting them anew. If disturbances persist, concretions must be suspected. In any event, intestinal foci are peculiarly liable to breed suppuration in an already damaged kidney, so that the intestines should be supervised with special care in cases of renal lithiasis, hypertrophied prostate or stenosis of the urethra. An operation for chronic appendicitis or recurring obstruction may cure kidney lesions that had long resisted direct treatment.

The Prognosis with Chronic Nephritis.—Vallery-Radot insists that determination of the urea content of the blood should be the routine practice in examining a patient with chronic kidney disease. When this is found repeatedly to be over 1 gm. per liter, the end is not far off, within two years at most. A single test is not decisive. A patient with extreme edema and apparently doomed to a speedy death will recover and throw off the edema if the urea in the blood is below 0.5 gm. per liter, while another nephritic whose condition may seem quite satisfactory is in the terminal phase if the urea content of the blood keeps permanently above 1 gm.

Extrasystolic Arrhythmia.—Donzelot declares that hygiene rather than drugs is required for pure extrasystolic arrhythmia without visceral taint. Graduated exercise, regulation of the diet and avoidance of stimulants are all that is required; repose does actual harm. But when the extrasystolic arrhythmia occurs in persons with an already damaged heart, digitalis is indicated. With arteriosclerosis, measures to aid in elimination of waste are in order, possibly supplemented with heart tonics.

Paroxysmal Tachycardia.—Donzelot strives to remove the cause, giving ovarian or thyroid treatment as indicated, or treating goiter and stimulating the emunctories. To arrest an attack, the main point is to stimulate the pneumogastric nerve. This can be attempted by deep breathing in reclining, swallowing a big cachet, taking an emetic, compressing the vagus in the neck or compressing the eyeballs. Complete repose and a milk-vegetable diet will aid. Sedatives seldom

display any efficacy. In the protracted attacks, almost all that can be done is to watch over the heart and give heart stimulants at the first sign of weakening. If the attack has lasted several days, it is better to give digitalis without waiting for signs of weakening. When called late in the attack, injection of ouabain by the vein should be considered, not over 0.25 mg., doubling the dose the next and the following day at need.

Paroxysmal Hemoglobinuria.—Giroux agrees with those who think that paroxysmal hemoglobinuria is a kind of auto-anaphylaxis. The success of reinjecting the patient with his own serum seems to sustain this assumption. These injections do no harm, and have most effectually warded off return of the attacks. Specific treatment for syphilis has proved effectual in other cases. The only indications in the attack itself are to keep the patient warm in bed.

Paris Médical

March 20, 1920, 10, No. 12

Present Status of Lethargic Encephalitis. P. Blum.—p. 237.

*Sporotrichosis of the Genital Organs. A. Brainos.—p. 247.

*Fibrous Tumors of the Palm. R. Ducastaing.—p. 248.

Unrecognized Sporotrichosis of the Genital Organs.—Brainos reports two cases because of the unusual localization of the disease in the genitals. The first patient was admitted to the service in October, 1918, with the diagnosis "syphilitic chancre of the penis." He presented on the body of the penis, in the dorsal region, an ulcerous wound about the size of a dime, which was not indurated at the base; no inguinal adenitis. The Bordet-Wassermann reaction was negative; nevertheless, treatment as for syphilis was tried, but without success. The ulcer took on a phagedenic appearance and the patient was much discouraged. Brainos suspected the presence of sporotrichosis, and bacteriologic examination of the pus confirmed his suspicions. Potassium iodid, following the Gougerot method, changed the clinical picture remarkably within a few hours. At the end of a month the ulcers had healed over completely. After a two weeks' interval there was a recurrence of the sporotrichosis in the same region, which was quickly checked by potassium iodid. As a matter of precaution the patient was given treatment for two weeks at a time for three months. He remained in the hospital until April 8, 1919, up to which time there had been no further recurrence. Brainos remarks that if in giving antisyphilitic treatment he had happened to add potassium iodid, a cure would have doubtless been effected, and the false diagnosis of syphilitic gumma would have been confirmed. Therefore, he recommends that when a physician institutes tentative antisyphilitic treatment for a local lesion, the specific nature of which has not been confirmed bacteriologically or clinically, he should avoid using potassium iodid with mercury or arsenical remedies.

Fibrous Tumors of the Palm of the Hand.—Ducastaing reports three cases in which fibrous nodules had developed insidiously without any known trauma, either of an accidental or industrial nature. There was no frank history of tuberculosis, but there was of arthritis, which bordered on the type of tuberculous rheumatism. The numerous newly formed vessels were the seat of an endovascular inflammation of the type described by Poncet. The centers of the tumors were infiltrated with hemoglobin granules. All the intermediary stages of the slow development could be seen at one time.

Presse Médicale, Paris

April 3, 1920, 28, No. 19

*Clinical Shock. F. Vidal, P. Abrami and E. Brissaud.—p. 181.

Hemoclasia in Clinical Shock.—Vidal and his co-workers in this long study of certain phenomena in shock explain the nature of the numerous and widely diverse clinical manifestations—from the accidents of anaphylactic order, the disturbances from parenteral injection of colloidal and crystalloid substances, and the spontaneous syndromes of infectious order, such as certain attacks of high fever, to the humoral derangements, as in paroxysmal hemoglobinuria—all are traceable to a single mechanism, the same process

of destruction of colloids, a colloidoclasia. In this new field of colloidoclasia we may soon discover many other instances of phenomena due to upset of the colloidal balance. Perhaps certain symptoms hitherto ascribed to intoxication may be the expression of a sudden loss of colloidal balance. True intoxication acts by a chemical process; it alters the molecules and may destroy them, but shock, they reiterate, is merely an upset of the physical balance between colloidal structures. The most convincing testimony of this, they say, is the one phenomenon common to all the above manifestations of shock, namely, the sudden destruction or dissolution of erythrocytes, the *crise hémoclasique*. When we see an attack of asthma, of urticaria, of hemoglobinuria, we can always find the paroxysm of hemoclasia if we seek for it. The direct disturbances from it are so slight that they escape attention, but it is another instance of the importance of this occult symptomatology, inaccessible to our ordinary means of investigation. The natural or acquired susceptibility of certain groups of cells will determine the organic localization of the colloidoclasia. This links colloidoclasia with idiosyncrasies. Crystalloid substances do not seem to be able to induce shock unless they get into the blood suddenly and in large amounts (arsphenamin, sodium chlorid and bicarbonate), and the shock can be warded off by preliminary injection of a minute dose of the same. The phenomena in paroxysmal hemoglobinuria from chilling show that this is an auto-anaphylaxis from the cold, without the intervention of any foreign colloidal or crystalloid substance.

Progrès Médical, Paris

March 13, 1920, **35**, No. 11

Chronic Dyspepsia in the Gassed. M. Loeper.—p. 113.

Contracture of the Fingers. G. Giraud.—p. 113.

*Treatment of Burns. Roziés.—p. 118.

March 27, 1920, **35**, No. 13

Inaugural Lecture: Forensic Psychiatry. Laignel-Lavastine.—p. 137.

Alimentary Poisons. M. Loeper.—p. 140.

April 3, 1920, **35**, No. 14

Heart Disease in Soldiers and as Entitling to Pension. E. Pallasse.—p. 149.

Therapeutic Pneumothorax. H. Paillard.—p. 152.

The Plague at Avignon in 1720. P. Raymond.—p. 153.

Burns.—Roziés remarks on the good results in severe burns from normal horse serum, the hot air jet, and phototherapy, but the film method has won most adherents. The paraffin or wax mixture is within the reach of everyone. He has had good results also with a waxed tulle which does not stick to the tissues. It is dipped in a mixture of petrolatum, wax, castor oil and balsam of Peru, with a melting point at 30 C. Bernhard published as long ago as 1904 his success in treating extensive burns with heliotherapy, and Aimes reported in 1913 the excellent results from it in a recent burn and in an old case in which the extensive burn of the third degree was healing only sluggishly, but it healed over smoothly under thirty-five sunbaths by the regular heliotherapy technic.

Revue de Chirurgie, Paris

November-December, 1919, **38**, No. 11-12

*Tuberculous Ovarian Cysts. E. Forgue and E. Chauvin.—p. 881.

*Mastoiditis and Suboccipital Pott's Disease. G. Portmann.—p. 916.

Complications of Knee Sprain. Thévenet.—p. 942.

Tuberculous Ovarian Cysts.—Forgue and Chauvin were able to collect from the literature only thirty-five cases, the oldest case being that of Spencer Wells, reported in 1863. Many cases reported as such cannot be definitely so regarded as there was no histologic control, or the localization of the process was not sufficiently fixed. Tuberculous ovarian cysts are found in three forms: (1) tubo-ovarian with tuberculosis of the common cavity; (2) external, superficial tuberculosis associated most frequently with peritoneal tuberculosis, and (3) deep tuberculosis. This form of tuberculosis is practically never primary but develops following another focus of infection, found in the majority of cases in the peritoneum or tube.

Mastoiditis and Suboccipital Pott's Disease.—Portmann states that since the treatment of mastoiditis and of Pott's disease are so widely different, diagnostic errors in this field are exceedingly serious and result in dire consequences to the patient. He discusses in detail the more important symptoms of the two diseases which aid in establishing a diagnosis. If there is no cervical abscess, the pains in suboccipital Pott's disease are accentuated by the various movements of the head, in mastoiditis by pressure in the region of the antrum. In Pott's disease there are no morphologic changes of the mastoid region, as with mastoiditis; in the former there is early and marked stiffness of the head and neck; in mastoiditis if this exists at all it is not pronounced; in Pott's disease there are no ear symptoms, as in mastoiditis. In Pott's disease the general condition is rather bad, and often there are infectious lesions of other organs. In the presence of a cervical abscess, the pain in the region of the abscess is slight in Pott's disease, but severe in meningitis; in the former the abscess is regular, not inflamed, without peripheral edema; in mastoiditis the abscess is not sharply defined, has peripheral infiltration and inflammatory reaction. In Pott's disease puncture of the abscess releases a thin serous, lumpy pus which may contain tubercle bacilli; in mastoiditis the pus will be phlegmonous, thick and of uniform consistency, with no evidence of tuberculosis. Fistulas if present will in Pott's disease show purplish disconnected borders, with occasional fungosities, and will emit a pus not uniform in consistency; in mastoiditis the borders will be regular, red and will emit a phlegmonous pus. Roentgenoscopy will disclose lesions of the cervical vertebrae in Pott's disease, but none in mastoiditis; in the former a probe introduced in the fistulous tract will point toward the cervical column, in mastoiditis toward the mastoid.

Revue Médicale de la Suisse Romande, Geneva

April, 1920, **40**, No. 4

Chorea. Comte.—p. 197.

Fat, Cartilage and Bone Grafts in Surgical Repair. C. Julliard.—p. 211.

Multiple Tumors; Four Cases. A. Jentzer.—p. 236.

Case of Congenital Myatonia. T. Reh.—p. 247.

Schweizerische medizinische Wochenschrift, Basel

April 1, 1920, **50**, No. 14

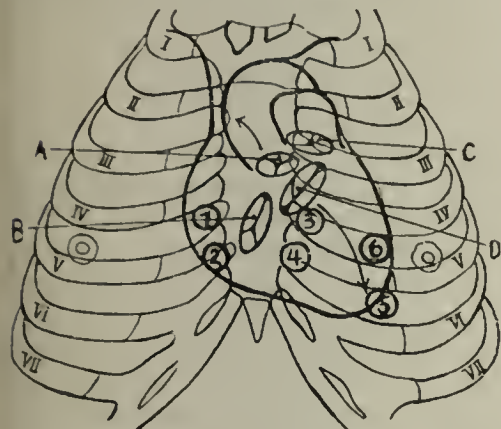
*Direct Resuscitation of the Heart. K. Henschen.—p. 261.

Influenza and Tuberculosis. F. Deiss.—p. 268.

Lethargic Encephalitis. W. Kauffmann Ernst.—p. 270.

Resuscitation of the Heart.—Henschen relates that he is one of the few who have succeeded in permanently resuscitating the heart, after complete arrest, by direct injection of a stimulant into the heart. Van den Velden revived the heart in 13 of his 45 cases; Hesse in 4 of his 6, and Volkmann and Heilmann in 14 of 17. But in these groups the revived heart action gradually subsided anew in from twenty minutes to ten hours at most. Henschen reviews the history of efforts in this line, simple injection of a stimulant into the pericardium, ventricle or right auricle, with or without infusion of a fluid to give the heart enough to pump on, and with or without preceding release of blood from the heart to reduce the tension, a central venesection, as it were. The infusion can be made only in the left ventricle, and Fick says that the ventricle can hold only from 50 to 75 gm. Zuntz places the limit at 60 gm. Henschen gives several illustrations showing the danger zones to be avoided, especially the wall separating the auricles from the ventricles, the zone of the His-Tawara bundle, the upper third of the anterior longitudinal groove, the base of the heart near the mouth of the vena cava (region of the sino-auricular system), and the lower half of the atrioventricular boundary zone. He describes in detail four cases in which he has applied these resuscitation measures, once after collapse of the heart from hemorrhage from a gastric ulcer. He injected 1 c.c. of epinephrin and 0.5 c.c. of a pituitary preparation into the left ventricle a few minutes after the heart had stopped beating. The heart and pulse began to beat strongly again at once but gradually dropped again as spontaneous

respiration could not be induced during forty-five minutes of artificial respiration. In another case the intracardial injection was made by mistake in the anterior interventricular vein, instead of in the ventricle itself, and the striking benefit lasted only for fifteen minutes. His third case was a bullet wound of the heart, and the heart was revived to strong and regular action by the injection of 1 c.c. of 1:1,000 epinephrin and half this amount of the pituitary preparation. The young man was convalescing smoothly when fulminant pericarditis proved fatal the second day. The one permanently successful case



1-2. Puncture to relieve right auricle.
3-4. Puncture to relieve right ventricle.
5-6. Points for infusion of left ventricle.
A, aortic valve; B, tricuspid valve; C, pulmonary valve; D, bicuspid valve.

was a man of 32 who was rendered unconscious by a beer keg falling on his chest and upper abdomen. It was impossible to tell whether the condition was from intense pleuroperitoneal traumatic shock or from internal hemorrhage. The heart stopped beating during the exploratory laparotomy, and massage failed to revive it. Then 1.5 c.c. of the epinephrin solution was injected in the pericardium through the fourth left interspace, inside of the mammillary line, at a depth of about 2 cm. At once the flabby, pulseless heart grew taut and began to beat strongly and regularly, and signs of life became apparent. Then 700 c.c. of physiologic saline with 10 drops of epinephrin and 5 drops of the pituitary were infused in the arm and recovery was soon complete.

Policlinico, Rome

March 8, 1920, 27, No. 10

Cerebrospinal Fluid in Pertussis. G. Genoese.—p. 291.
The Various Tests of Pancreas Functioning. A. Gasbarrini.—p. 296.
Mixed Sarcoma in Popliteal Space. A. Poggiolini.—p. 300.

February, 1920, 27, Medical Section No. 2

Influenza: Etiology and Pathogenesis. F. Micheli.—p. 45.
Atypical Meningococcus Meningitis. A. Bolaffi.—p. 74.
Elimination of Chlorids in Febrile Diseases. G. Marcialis.—p. 86.
To be cont'd.

Atypical Meningococcus Infection.—Bolaffi has encountered cases of meningococcus meningitis with an onset simulating measles; others in which the lumbar puncture fluid showed merely lymphocytosis and the disease progressed with extreme cachexia. One little girl died the sixty-seventh day, the child looking like a little mummy. The case teaches the importance of repeating puncture of the spinal cavity at different points to reveal meningococci; everything seemed to point to tuberculous meningitis until too late for serotherapy to be effectual. The meningococcus nature should be suspected when days of apyrexia are interrupted by periods of high fever and there is rapid loss of weight. The search for tubercle bacilli or meningococci in the spinal fluid should be kept up, and the centrifugate sown on culture mediums favorable for the meningococcus. The ophthalmoscope may reveal tubercles on the choroid. When the meningococcus meningitis has passed into a chronic phase, it is almost certain to be mistaken for tuberculous meningitis. In one soldier the meningococcus induced acute fatal septicemia and purpura, but necropsy failed to reveal any signs of meningitis. In other cases the onset suggested typhoid until, about the tenth day, purpura developed. The much enlarged spleen in such cases may be due to unsuspected malaria. In another case rheumatic polyneuritis was diagnosed from the symptoms until the end of the second week. Deafness from the first was finally explained by the discovery of the meningococcus. In another case intense pain in one ear and pains in the limbs, with slight fever, were the only symptoms, for three days. One child had presented merely slight fever and extremely slight pain when

the head was bent; otherwise she seemed entirely well, and Bolaffi did not venture to inject the antiserum on these findings alone, but eight hours later other symptoms cleared up the diagnosis. Investigation of the mode of onset is usually most instructive for the differential diagnosis.

February, 1920, 27, Surgical Section No. 2

*Intra-Abdominal Use of Ether. G. Fantozzi.—p. 41. Conc'n.
Postoperative Dilatation of the Stomach in Diaphragmatic Hernia. G. A. Pietri.—p. 56.
Surgery of the Descending Colon. M. Fasano.—p. 61.
Firearm Wounds of the Bladder. L. Frassi.—p. 70. To be cont'd.

Intra-Abdominal Use of Ether.—THE JOURNAL mentioned April 17, p. 1132, Fantozzi's denunciation of the current methods of using ether in abdominal operations, as it has an intensely hemolytic action and adhesions are more than likely to develop between surfaces laved with it. His extensive and clinical research has apparently demonstrated, however, that all the desired benefits from it can be realized, with none of the drawbacks, if used merely for moistening gauze, etc., to sponge out the abdominal cavity and in tamponing. He describes thirteen cases to show the advantages of this.

Riforma Medica, Naples

Feb. 28, 1920, 36, No. 9

Inaugural Lecture in Surgery Course. G. Tusini.—p. 221.
Epidemic Encephalitis. P. Boveri.—p. 228.
*The Brain and the Genetic Function. V. Desogus.—p. 233.

The Brain and the Genetic Function.—Desogus compares with Ceni's experimental findings Forster's recent study of the ovaries in 100 insane women and Todde's study of the testicles in 200 insane men and in thirty others who had been killed accidentally or had died from acute disease. All the data testify to a close connection between mental disease or trauma of the brain and the condition and functioning of the sexual organs. Mjöen's recent research on the relations between alcohol and generation has convinced him that the deleterious influence of alcohol on the organs of reproduction is not direct but through the superior nerve centers. Todde has emphasized the pronounced difference in the testicles of the insane and those of the noninsane dying from a similar cause, such as tuberculosis. Stieve reported in 1918 the extreme involution evident in the ovaries of hens kept in close captivity, in comparison to other hens. He ascribed this to the psychic influence of the confinement. None of the other internal organs showed appreciable change during the captivity. Ceni's conclusions from his more than thirteen years of experimental research and clinical observation are to the effect that the biologic processes which constitute the phenomenon of procreation are under the control of nervous influences which are more and more complicated the higher in the animal scale. In the lower vertebrates the spinal cord alone is involved, while in the higher vertebrates the spinal cord controls merely the trophic processes and loses more and more of the control, which is assumed by certain brain centers. These brain centers function under the direct stimulus of psychic forces which, by their insufficiency or by their excess, may entail degeneration and hence sterility. An excess of psychic stimuli may excite or depress according to the individual reaction.

Rivista di Clinica Pediatrica, Florence

February, 1920, 18, No. 2

*Extract of Bran in Infant Feeding. Fernandes Figueira (Rio de Janeiro).—p. 65.
*Azurophilia in the Blood in Measles. A. F. Canelli.—p. 82.
*Treatment of Meningococcus Meningitis. I. Malvani.—p. 88.

Extract of Bran in Infant Feeding.—Fernandes discusses the literature on deficiency disturbances, describing much experimental research and clinical experience of his own. Everything seems to indicate, he remarks in conclusion, that the continuous preponderance of any bacterial flora is injurious for an infant, even with breast feeding, kept up for more than a year without anything else being given. By the end of the twelve-month a deficiency in mineral reserves becomes apparent. The addition merely of a vege-

table soup or a little starch works surprising changes in the infant. He gives precipitated calcium phosphate in certain dyspeptic conditions from intolerance for carbohydrates, and this phosphate, as well as casein of which it is a constituent, produce excellent effects. Even when the diet seems admirable, it is indispensable to vary the food from time to time to stimulate and modify the mechanism of assimilation. This is the explanation of the benefit from the extract of bran. Large amounts, up to 5 or 6 gm. daily, cause diarrhea. But with only 2 or 3 gm. the infant's stools keep normal and it increases promptly in weight. This increase in weight does not keep up, however, if the extract of bran is continued. If it is dropped for two or three weeks and then resumed, the weight shows another rapid gain. It seems to interrupt the exclusive predominance of a certain bacterial flora.

Azurophilia in the Blood in Measles.—Canelli examined the blood of 60 infants and young children and 5 soldiers, all with measles, and in 33 persons with other diseases, seeking for cells containing azurophil granulations. This is not a specific finding with measles, as it is found in pneumonia, scarlet fever, etc., but the azurophilia is so frequent in measles and so pronounced, that it may well serve as an aid in the differential diagnosis. The azurophilia reaches its height with the eruption phase. Azurophilia is exceptional under other conditions, as Canelli noted in examining blood specimens from 5,200 soldiers with malaria and 10,000 other malarial subjects.

Treatment of Meningococcus Meningitis in Children.—Malvani relates that success beyond all anticipations has been realized at the children's clinic at Florence in treatment of meningococcus meningitis with a vaccine to supplement serotherapy. Its value was most evident in the grave cases that dragged along without tendency to spontaneous healing under serotherapy. By the vaccine treatment the infection was attenuated to a degree which permitted the natural defensive forces to gain the upper hand. The meningococcus changes its biologic behavior in different epidemics so that it is important to use the local strains in preparing the antiserum, and as many different ones as possible. Capogrossi's success in two grave cases with intraspinal autoserotherapy justifies this technic when fear of anaphylaxis prevents the use of other serums. In infants the meningitic process is peculiarly liable to become walled off by obstruction of the communication between the skull and the spinal cavity. When only a small amount of fluid can be obtained by lumbar puncture, while the symptoms keep serious, it is a simple matter to puncture the ventricle through the anterior fontanel. For older children it is necessary to trephine.

Gaceta Médica de Mexico

February-March, 1920, 55, No. 5

- Pityriasis Rubra Pilaris in Boy. J. González Urueña.—p. 87.
- Indications for Induced Sterility. M. S. Iglesias.—p. 89.
- Gullstrand's Work in Optics. A. Chacon.—p. 94.
- Case of Exfoliative Marginal Glossitis. R. E. Cicero.—p. 99.
- Albee's Operation for Pott's Disease. R. Rojas Loa.—p. 106.
- *Vertigo and Syncope in Relation to the Nervous System. A. A. Loeza.—p. 111.
- Demonstration of Spirochetes in Syphilis. J. Arroyo.—p. 116.
- *Morphin in Obstetrics. F. Bulman.—p. 122.
- *Perforation of the Retina. J. de Jesús González.—p. 126.
- Hygiene of the Home. J. E. Monjarás.—p. 133.

Vertigo and Syncope in Relation to the Nervous System.—Loeza reports a puzzling case of repeated and alarming syncope in a man of 80 which he finally differentiated by exclusion as hysteric syncope, and cured by suggestion. He contrasts the clinical picture with syncope and severe vertigo of central or peripheral origin.

Morphin in Obstetrics.—Bulman emphasizes the dangers from the use of morphin in obstetric cases, especially the danger for the child. In the discussion that followed his remarks, Montañó told of being called to a case in which the physician had given an intraspinal injection of cocaine to relieve the labor pains, and the woman succumbed to hemorrhage from inertia of the uterus.

Perforation of the Retina.—De Jesús gives an illustrated description of the findings in the retina which had apparently been perforated at the fovea centralis from a contusion in childhood. Since then the visual acuity of that eye had been less. The pear-shaped foramen is the size of two thirds of the papilla, but the vessels in the retina seem to be normal. He compares this case with the seventy-nine others he has found in the records, with a history of known trauma in 81.8 per cent. It is the second case published in Mexico.

Siglo Médico, Madrid

Jan. 31, 1920, 67, No. 3451

- *Alcoholism and General Paresis. J. Sanchis Banús.—p. 63.
- *Diabetes Insipidus. J. Madinaveitia.—p. 71.

Alcoholism and General Paresis.—Sanchis reiterates that the symptoms of chronic alcoholism may simulate absolutely the clinical picture of general paresis, and both alcohol and syphilis are frequently found in the antecedents of each. He gives the details of two cases in which only lumbar puncture gave the clue, confirming in one case the assumption of general paresis from the comparatively few hallucinations, and the delirium of the megalomania type. In the other case, as the alcoholic psychopathy subsided, the mind became clear. The wealth of hallucinations also testified to the alcoholic origin.

Diabetes Insipidus.—Madinaveitia comments on Marañón's recent statements as to the share of the pituitary in the production of diabetes insipidus, and the fact that pituitary disease is not always accompanied by diabetes insipidus. There is some reason to believe that the pituitary tumor may compress the center regulating osmosis, while the lack of the normal pituitary hormone may further contribute to upset the osmotic balance.

Deutsche medizinische Wochenschrift, Berlin

Jan. 8, 1920, 46, No. 2

- Further Communications on Silver Salvarsan. W. Kolle.—p. 33.
- *Trichophytosis in Man. F. Blumenthal and A. von Haupt.—p. 37.
- Radiotherapy in Surgical Tuberculosis. O. Strauss.—p. 39.
- Friedmann Treatment of Children with Surgical Tuberculosis. L. and O. Bossert.—p. 41.
- Effect of the War on Eye Diseases. L. Pick.—p. 44.
- Case of Osteomalacia and Tetany from Undernutrition. Sauer.—p. 45.
- Preserving Blood for Later Examination. H. Langer.—p. 47.
- Pneumonia Mortality by Age Groups. Hatzivassiliu.—p. 48.
- Systematized Care of Lupus Patients. O. Salomon.—p. 49.

Immunization Processes in Trichophytosis in Man.—Blumenthal and von Haupt state that in deep trichophytosis, in the majority of cases, antibodies may be shown to be present in the blood serum, while in superficial trichophytosis, this is the exception. In general, the quantity of antibodies is directly proportional to the severity of the clinical phenomena. Part of the therapeutic effect of trichophytin injections is doubtless due to stimulation of the production of antibodies. The allergic reaction takes place also in cases of nonparasitic sycosis and with tuberculous glands. A strict cell immunity, which would presuppose that trichophytosis occupied a special position among infectious diseases cannot be established. Their conclusions are based on study of thirteen cases of ringworm and ninety-one of deep trichophytosis.

Medizinische Klinik, Berlin

Feb. 22, 1920, 16, No. 8

- *Comparative Pathology of Melanotic Tumors. O. Lubarsch.—p. 195.
- Different Forms of Salvarsan Treatment of Syphilis. F. Pinkus.—p. 199.
- *Treatment of Empyema. Moszkowicz.—p. 201.
- Plastic Induration of the Penis plus Dupuytren's Contraction. H. Martenstein.—p. 205.
- Factitious Fever from Tapping the Thermometer. F. Hammes.—p. 207.

Comparative Pathology of Melanotic Tumors.—Lubarsch recalls that comparative histology shows that the melanotic pigment occurs in two different kinds of cells, namely, in the epidermis cells of the skin and in epithelial cells, especially of the organs of sense, and also in the chromatophores, found in the connective tissue and among the epithelial cells. As for the origin and character of the pigment, chemical investigations have shown more and more clearly that the

formation of the pigment is connected with the decomposition of albumin. The high sulphur content of melanin is an indication of such origin. As for the starting points of melanotic tumors, Lubarsch is inclined to the view that melanocytoblastomas arise primarily only where melanocytes and melanoblasts occur normally or at points to which such cells have been carried by some abnormal developmental process. In the last thirteen years melanotic tumors formed 0.89 per cent. of the 2,274 malignant tumors found in 18,113 cadavers. In Folger's statistics, they formed 42.88 per cent. of the 527 cancers found in 175,745 horses and 0.35 per cent. of the 865 cancers found in 143,309 dogs.

Physical Factors in Treatment of Empyema.—Moszkowicz discusses the advantages and disadvantages of Bülow siphon drainage, rib resection, and the Revilliod suction treatment in empyema, and then recommends what he calls the combined suction and lavage treatment. He has used the method for many years and states that it gave good results during the last influenza epidemic. Of twenty-one patients operated on in this manner he lost four, but necropsy revealed complications such as multiple abscesses, pericarditis and diffuse involvement of both lungs. Under local anesthesia he resects in the posterior axillary line about 2 cm. of the sixth rib and then inserts two drains, instead of one, in an opening in the pleura just barely large enough to receive them. The first drain just enters the pleural cavity, the second goes in a little deeper. Both drains are embedded liquid-tight in the latissimus dorsi by means of catgut sutures, and the skin is sutured tight around them. The ends of the tubes (50 to 60 cm. long) rest in glass receptacles containing a solution of salicylic acid. As very little air has penetrated the thorax, siphon drainage begins at once. The shock is minimal, and after most of the pus has thus drained out, the patient breathes easier. One bottle is then filled with warm physiologic sodium chlorid solution and is raised to a plane from 10 to 20 cm. above the thorax. The fluid from this enters the wound and flows off, mixed with pus, through the other drain. It is Moszkowicz's experience that the warm lavage is agreeable to the patients, and breathing becomes easier. There are some contraindications for lavage such as the existence of a communication between the pleura and the bronchi. Moszkowicz emphasizes the importance of breathing exercises in order to restore the lung to its normal condition, and for this purpose has found the hints contained in Hofbauer's "Summ- und Fächerübungen," *Deutsche medizinische Wochenschrift*, 1916, p. 125, of great value. He also stresses that the presence of pus as shown by the exploratory puncture may not be an absolute indication of a "free" empyema requiring an operation. The condition may be due to interlobar empyema or an abscess which will require intervention at an entirely different site. As a last word, too great attention cannot be given to after-treatment, especially from the standpoint of intrathoracic pressure.

Feb. 29, 1920, **16**, No. 9

- Relations between Disease of Eye and Nose. Stenger.—p. 221.
Nephritis without Albuminuria. W. Schemensky.—p. 226.
Intravenous Calcium Therapy in Tuberculosis of the Lung. H. Macndl.—p. 228.
Silver Salvarsan. H. Boas and A. Kissmeyer.—p. 232.
Linsner Method of Combined Salvarsan and Mercury Treatment. W. Löwenstein.—p. 233.
*Case of Barbitol Poisoning. Moszeik.—p. 233.
Significance of the Pericardium for the Mechanism of the Heart's Action; the Effect of Pericarditis Obliterans. H. Picard.—p. 234.

March 7, 1920, **16**, No. 10

- Nature of Inflammation, Cloudy Swelling and Fatty Degeneration. Hansemann.—p. 247.
The Significance of Trembling. S. Erben.—p. 254.
Blood Examinations and Their Results in Influenza. Arneth.—p. 255.
Angioneurosis Following Scorpion Sting. H. Ziemann.—p. 257.
Clinical Aspects of Phleboliths. E. Fabian.—p. 258.
Water Supply in Relation to Typhoid. T. Messerschmidt.—p. 259.
Hydronephrosis with Profuse Bleeding; Blood Transfusion. H. Flörcken.—p. 260.
Retention of Urine in Childbed; Simulation of Tumor. Fuhrmann.—p. 261.

Case of Barbitol Poisoning.—Moszeik reports that, July 22, a nurse, aged 25, was admitted to the hospital in stupor. Circumstances indicated barbitol poisoning. Following

stomach lavage the patient was given coffee to drink and caffen subcutaneously. She then slept for forty-eight hours continuously, during which period she did not react to external irritants. July 25, she opened her eyes when her name was called, but closed them again at once and fell asleep. July 26, she noticed for the first time that some one was standing at her bedside. Recovery was now rapid, though a certain lassitude persisted for some time, and the muscles of the lower extremities seemed fatigued. The patient had taken 7 gm. of barbitol with suicidal intent. The drug had taken effect within five minutes, the patient stated. There was no nausea and no vomiting. Menstruation, begun on the 22d, was not affected.

Münchener medizinische Wochenschrift, Munich

Jan. 2, 1920, **67**, No. 1

- Roentgenotherapy in Cancer of the Uterus as Practiced at Freiburg. E. Opitz and W. Friedrich.—p. 1.
Cardiac Arrhythmias. K. Grassmann.—p. 5. Cont'n.
*Provocative Method in Urethral Gonorrhea. E. F. Müller.—p. 9.
*Tumors in Chemical Workers. Oppenheimer. p. 12.
Ethyl Chlorid Anesthesia and Narcosis in General. W. Kausch. p. 14.
Gonococcus Tests. F. W. Oelze.—p. 15.
Subcutaneous Rupture of Biceps Brachii Muscle. H. Blencke.—p. 17.
Strong Hot Solutions of Potassium Permanganate in Staphylococcus Infections. E. Neusser.—p. 17.

A Nonspecific Provocative Method in Urethral Gonorrhea.—Müller recommends the use of a nonspecific method of provocation in the diagnosis of etiologically uncertain affections of the lower urinary passages and in chronic disease of the genital organs in man. He uses an albumin (from milk) solution as described in detail in *Medizinische Klinik*, 1918, p. 688. The method of injection is as follows: The extensor aspect of the forearm is cleansed with benzine; a fold of the skin is gently raised, and the injection is made parallel with the surface in such a manner that the tip of the syringe keeps within the epidermis. From 0.2 to 0.3 c.c. of the albumin solution is injected, whereupon a white wheal arises. Two such wheals suffice for a single treatment. If no wheal appears it is a sign that the injection was subcutaneous instead of intracutaneous, and the injection should therefore be repeated. After such intracutaneous injections, moderate increases in the blood leukocytes appear but with no difference between cured gonorrhea and a still active infection. In about six hours a slight itching sensation occurs in the urethra; following which there is a marked increase in the discharge. If the discharge is examined for two days successively, the gonococcus can be almost certainly isolated if gonorrhea is still present. This judgment is based on experience with over 1,500 cases in the Hamburg Marine Hospital. Of the patients who gave a negative test by this method less than 1 per cent. were shown later by other methods to be infected. Müller finds the above described method much superior to the usual provocative methods by which specific antigens are introduced into the organism, for it does away with the otherwise inevitable injury to the already diseased mucosa.

Tumors of the Urinary Apparatus in Chemical Workers.—These tumors, Oppenheimer states, deserve especial attention for several reasons, not so much on account of their severity and relative frequency, but because the manner and the process of their development can be studied with the same degree of certainty as if they were produced experimentally. In the present state of our knowledge we are unable to detect any difference histologically and clinically between industrial tumors so-called, and those that arise under ordinary conditions. Therefore, any deductions that can be made in regard to industrial tumors are probably applicable, to a certain extent at least, to tumors in general. From 1910 to 1919 twenty tumors of the urogenital apparatus were studied. These tumors were all plainly traceable to the action of chemical agents. Certain substances (benzidin, anilin and anilin dyes, etc.) produce tumors of the urinary passages, more especially of the bladder. The process of development extended over a long period of years. The interval between the beginning of the harmful occupation and the first appearance of symptoms ranged from nine and

a half to twenty-eight years. After a change of occupation tumors developed in two cases ten and seventeen years later, proving that though the external cause was removed the disease had continued to develop. A long latent stage precedes the appearance of the first local or general symptoms. Different substances may produce tumors of the same type, and the same substance may produce tumors of different types. Duration and intensity of the exposure to the injurious substance could not be shown to have any influence on the process of development; nor did duration and intensity affect the type of tumor, as far as could be discovered. The prognosis for the carcinomas acquired in chemical industries is unfavorable, and for the papillomas at least dubious.

Wiener klinische Wochenschrift, Vienna

April 1, 1920, 33, No. 14

Cerebrospinal Fluid in Latent Syphilis. J. Kyrle.—p. 283. Cont'n.
Lethargic Encephalitis. G. Stiefler.—p. 286; W. Spät.—p. 289.
*Thrombosis of the Longitudinal Sinus in Influenza. B. Szigeti.—p. 291.

Thrombosis of the Longitudinal Sinus in Influenza.—On account of its rarity, Szigeti reports a case of this kind in an adult. The patient was admitted, Feb. 8, 1920. The disease took a stormy course and the patient died, Feb. 12, 1920. An acute delirium set in soon after admission. As the disease progressed there were epileptiform attacks, during one of which the patient succumbed. A diagnosis of influenzal pneumonia was made, although the physical signs were slight and there was no expectoration, for during this influenza epidemic severe anatomic lung changes were often associated with quite insignificant objective phenomena. The thrombosis was not suspected from the clinical evidence but was revealed at necropsy. In a search through the literature Szigeti found only one similar case, that of Leichtenstern, who, however, was not absolutely convinced that influenza was present in his case.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

March 13, 1920, 1, No. 11

Foreign Terms in Medical Literature. G. van Rijnberk.—p. 877.
*Hydrocyanic Acid for Extermination of Vermin, Insects, etc. C. Lubsen, R. H. Saltet and L. K. Wolff.—p. 881.
The Typhus Epidemic at Rotterdam, 1918. P. H. Kramer.—p. 888.
Percussion and Auscultation Findings with Enlarged Glands at the Hilus of the Lung. W. M. Naessens.—p. 894.
Spirochete Findings in General Paresis. G. P. Frets.—p. 897.

Hydrocyanic Acid in Extermination of Vermin.—Lubsen, Saltet and Wolff state that their extensive experimental and practical experience confirms the extreme efficacy of hydrocyanic acid in extermination of rats, insects, moths, mites, etc., while it does not affect clothing or metals or foods, except milk and other fluids. It can be used to kill destructive insects in tobacco, flour and other foodstuffs. They found that the gas masks used by the British army are effectual in protecting against this gas; only after as much as 20 l. had been passed through the mask, some of it failed to be retained by the chemicals in the mask. The Netherlands and the German gas masks are no protection against HCN. They recommend using the gas in the evening and leaving the room shut up over night, airing it out in the morning. When this is not practicable, the gas can be used early in the day and the room be ready to use again at night, but mattresses, etc., must be aired and beaten out of doors to get rid of the gas. They advise letting the wind blow through the adjoining rooms or flats while the gas is being applied, thus interposing a zone of safety between the gas filled rooms and the inhabited rooms beyond. Two persons should be supplied with masks so that in case of accident one can care for the other. Nothing has been found to date effectual in combating the poisoning from the gas beyond artificial respiration and stimulants. Injection of sodium thiosulphate, which has been theoretically advocated, would require doses beyond what could be used in man. In their experiments the only living thing that resisted the action of the gas was the weevil. This seemed to be able to hold its breath and could thus resist high concentrations of the gas. But there are other effectual means of combating this.

Ugeskrift for Læger, Copenhagen

March 25, 1920, 82, No. 13

*Urobilinuria with Cholelithiasis. S. Hansen.—p. 415.
*Stenosis of Lacrimal Passages. N. R. Blegvad.—p. 423.
Necessity for Systematic Neurologic Examination of Syphilitics. C. Rasch and H. J. Schou.—p. 428.

Urobilinuria with Cholelithiasis.—Hansen found urobilinuria in 80 per cent. of fifty persons with cholelithiasis and in 100 per cent. of the thirty-three examined during gallstone colic, while the findings were negative in 71 per cent. of 175 control cases. The mere presence of gallstones is not enough to induce urobilinuria, but the latter is constant during an attack of gallstone colic if the common bile duct is permeable. If the gallstone has obstructed the common bile duct so that no bile is able to pass into the bowel, then bile pigment may be found in the urine, but no urobilin. In some of the cases which seemed to be gallstone colic, but no urobilin was found in the urine, the reliability of this test was confirmed by the operation which disclosed duodenal ulcer, cancer of the liver or other lesion but no gallstones. Of course urobilinuria is not a specific reaction to cholelithiasis, but it is proving, in connection with other findings, a very valuable aid in the diagnosis and in the estimation of the course of the case with gallstones. He theorizes to explain why gallstone colic is accompanied by this abnormal elimination of urobilin in the urine, ascribing it to relative insufficiency, a flooding of the liver with urobilin. One of his charts shows urobilinuria of 1:40, then 1:80 the first and second days of the attack, and then a gradual decline the four following days to zero. If the urine had not been tested till the fourth or fifth day the urobilinuria would have escaped detection. His tests showed further that fever in itself does not induce urobilinuria. His improved technic for estimation of the urobilin content of the urine was described in THE JOURNAL, March 23, 1918, p. 896. He says it is far more sensitive than the Schlesinger reaction. The latter is positive when the response is within normal range.

Operative Treatment of Disease of the Lacrimal Apparatus.—Blegvad lauds West's operation for dacryocystorhinostomy, but has modified the original technic by using an electric motor to cut away the bone and median wall of the lacrimal sac. This much simplifies the West operation, and proved very successful in his seventeen cases.

April 1, 1920, 82, No. 14

*Celsus' Kerion: Deep Trichophytosis. C. Rasch.—p. 443.
Manometer for the Spinal Fluid. N. R. Christoffersen.—p. 449.
The "Twilight Sleep" in Obstetrics. A. G. Lauritzen.—p. 454.
Tapeworm. H. R. Magnus.—p. 462.

Celsus' Kerion.—Rasch comments on the rapid cure of deep trichophytosis which is in such contrast to the prolonged course of the more superficial forms. He ascribes it to the complete transformation of the organism in the former, leading to the production of antibodies. In his 109 cases in a recent seven years there were 2 cases in children in which the trichophytosis of the scalp and body was accompanied by an eruption apparently identical with that of scarlet fever. These 2 cases formed about 4 per cent. of his 51 cases of Celsus' kerion. In some other cases the kerion was followed by what seemed to be erythema nodosum. He treated the kerion only with compresses with boiled water, changed four or six times a day, and was impressed with the absence of staphylococcus secondary infections. There seemed to be a temporary immunity to staphylococci. Under this compress treatment the trichophytosis disappeared in the course of from three to six weeks; the localizations elsewhere vanished at the same time, and no new lesions developed. This not only confirms the production of antibodies which clear the system of the causal agent, but it suggests the possibility of utilizing this curative potency of Celsus' kerion in treatment of other forms of trichophytosis which resist all measures for months and years (*T. violaceum*, for instance). Inoculation with kerion might transform conditions and clear the system of the whole. Sabouraud suggested ten years ago that kerion might vaccinate against tinea, but Rasch does not know that this suggestion has ever been applied in practice. He regards it as rational and justified to give it a trial in an appropriate case.

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DEFICIENCIES IN OUR METHODS FOR THE TREATMENT OF CHRONIC NEPHRITIS

NEED FOR INVESTIGATION *

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In considering the best methods for the treatment of chronic nephritis (Bright's disease) we labor under the disadvantage of dealing with a disease regarding which there are many gaps in our knowledge. Of its etiology we know surprisingly little in any exact sense, though the view is receiving increasing support that many of the cases have their primal cause in an infection of bacterial nature, most frequently of the streptococcus group. Even granted, however, that organisms of the streptococcus group originate the renal disturbance, we are not helped much in the matter of treatment, because, in case of the known nonrenal streptococcus lesions, we are able to treat only by elimination or drainage of a focus of infection, and can do little, if anything, toward counteracting the toxic substances that are produced and distributed to the body organs. If actually resulting from an infection, the chronic renal lesion presents itself months or years afterward, too late to be helped much by removal of the focus of infection even if still present. In other words, in the earlier, easily treated stages of the infection, the infection may pass unrecognized; or, what happens more frequently, there is nothing to indicate the beginning of a lesion in the kidney which slowly and gradually will develop into a recognizable nephritis. In the later stages when the renal lesion is easily recognized, the focus is no longer existent, or if present, its removal can change but little the renal damage already done. I have been very much struck, in my own experience, with the relatively few cases of chronic nephritis that seem to have been a direct sequence to a demonstrated infection or infectious disease; most of these have belonged to a rather distinctive group of cases, progressing rapidly to a fatal issue and perhaps better thought of as subacute than chronic nephritis. In these none of the methods of treatment seem to have had the slightest effect on the course of the disease; that is to say, knowledge of a close association with an infection, so far, in this group, has not shown the way to a successful treatment.

As to the actual type of lesion developing in the kidney, we know very little while the disease is progressing. Clinical classification cannot be accurately

correlated with structural classification, and there are so many gaps in our knowledge of the pathologic lesion in the kidney, particularly in regard to its histogenesis and its effect on function, that a structural consideration of renal lesions helps but little in treatment. During life, anatomic diagnosis in any narrow sense is almost impossible and even when successfully made helps but little in treatment.

In many of the patients with chronic nephritis there are coincident vascular lesions, in the main of degenerative nature; but of these we know as little as of the renal disturbances, so that their presence merely handicaps us all the more in applying a rational treatment.

In recent years, much attention has been given to the study of renal function in nephritis, and we have learned many facts in regard to it. The question naturally arises: How much has this newer knowledge of renal function aided us toward a more satisfactory method of treating these patients?

Except for the removal of recognized foci of infection and as prompt and efficient treatment as is possible of all acute infections, we at present can do practically nothing for the prevention of nephritis. Preventive treatment in a practical sense is almost nil for chronic nephritis, and will remain so until we learn more of the etiology and particularly of the factors that influence the progressive development of renal lesions.

THE AIMS IN THE TREATMENT OF CHRONIC NEPHRITIS

As we treat the chronic nephritic today, we aim (1) to stay the progress of the lesion; (2) to remove edema if present to an annoying degree, and (3) to prevent the formation and combat the effects of toxic substances, the result of the presence of the renal lesion. Let us briefly take stock of these methods and the knowledge on which they are founded.

1. *To Stay the Progress of the Lesion.*—With this in view we make two points of attack: (a) We remove foci of infection and guard against repetition of infections, and (b) we attempt to give the renal tissue as much of a chance as possible for recuperation by reducing its work, largely by limitations of diet.

(a) As already intimated, frequently we discover no focus of infection; and when we find one its removal usually accomplishes little, for the damage to the kidney has been done and we do not know how to increase renal repair. Yet it remains rational to seek for and remove, so far as is possible, foci of infection when found; we must not, however, promise the patient any striking result from such treatment, though occasionally great improvement may result. To guard against repetitions of infection, we urge the avoidance of exposure to contagious diseases and the reduction of contacts with infection. For a better

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resistance we urge the best possible hygiene, but these are all very general directions in very general terms; they are easy to state in a general way but difficult to carry out.

(b) To decrease renal work we limit diet. The kidney is an excretory organ concerned in the elimination from the body of water, salts, and nitrogenous and other substances; some well understood, others, such as various toxic substances believed to be eliminated by the kidneys, little understood. We assume that by limiting the intake of food and fluid we decrease the work of the kidney and give the kidney physiologic rest and so opportunity for repair. The tendency today is to decrease fluid intake, especially water. What is the basis for this? We have evidence that water excretion causes renal work, and to an injured kidney an increased fluid intake can lead to a decreased output of urine. When edema is present, we can see it increase as fluid intake increases. We also know that there is a limit to the reduction of water intake below which it is injurious to go because of the concentration of other substances to be excreted which is incident to great water restriction. Very likely, too, a much decreased fluid intake will cause injury to renal cells. Consequently, it seems reasonable to assume that there is an optimum mean of water intake. Do we really know this mean? I think not, except in the sense of the effect of fluid limitations over rather short periods; and even here, knowledge is imperfect. There has been surprisingly little critical study of the effects of different water intakes, especially over long periods of time. What we need to know is the comparative effect of a water intake at a level of 1,000, 1,500, 2,000, 2,500, etc., c.c. for weeks and months in comparable cases. Until these observations have been made, much of the value of a prescribed water intake in influencing the course of nephritis must remain guesswork. Again, we are by no means sure that increased water intake is harmful in all types of nephritis. Just what has been said of water applies to food constituents. Salt intake, protein intake, the problem of an adequate diet in the newer sense, all need to be studied over prolonged periods. If we find that nitrogen elimination is decreased and there is nitrogen increase in the blood in the form of urea, uric acid, etc., we decrease protein intake, often with prompt improvement; but this condition of evident disturbance in nitrogen metabolism really comes late in nephritis. We need to know the optimum protein intake for the early stages, if we are to help matters. War conditions have shown that prolonged reduction of protein intake with a probable imbalance in amino-acid constituents is harmful. Excessive protein intake in the later stages is often observed to be harmful. Between these two extremes there are great gaps in our knowledge at present, and what the optimum intake over a long period of time should be with a mildly damaged kidney, we need to know.

So for salts, of which sodium chlorid almost alone has been studied and that only over relatively short periods of time. I want to impress on you that as to water, salt and protein intake, which we reduce with the idea of affording the kidney rest, and this seems to be sound in principle, we lack the knowledge as to what amount of each in combination is best for the developing nephritis in the sense of reducing renal work without causing other damage, and so affording a physiologic rest that will give the kidney the best opportunity to repair its damage. This information

apparently can be obtained by a thorough, careful study of a large group of patients, followed over a period of not less than five years, to whom we apply a considerable number of the methods of studying renal function at present available; and this surely should be done to give us a better basis for the dieting of patients with nephritis.

Apart from the various constituents of food, should the calory value of the intake in the nephritic be reduced to a level that will cause a loss of body weight, or should body weight remain in equilibrium? In diabetes, evidence seems to favor a lowered level of body weight. In the latter stages of both diabetes and nephritis there is a marked loss in body weight which cannot be made up by an increased calory intake. As to whether a lower level of body weight in the earlier stages of nephritis would be beneficial, we do not know. Careful observation here is almost lacking.

Muscle exertion increases substances to be eliminated by the kidney. Excessive muscular effort appears to lead to renal irritation. Too little exercise lowers the general efficiency of the body. We need to advise our patients with early nephritis in regard to exercise, yet we have few data on which to base our advice. Still, data would be obtainable if an adequate investigation of the effects of varying sorts and degrees of exercise repeated daily for a period of time should be undertaken.

2. *To Remove Edema.*—For this purpose we restrict salt and fluid intake and increase elimination. If we are to deal satisfactorily with edema we should know why the edema is produced. In some patients, apparently few in number, sodium chlorid retention in the body seems to be a very important causative factor in the edema. If salt retention is due to defective renal elimination, in such cases restriction in the salt intake frequently leads to disappearance of the edema. Whether or not this occurs seems to depend on whether, with a lowered intake, there is some excess excretion representing sodium chlorid taken from body stores. In ratio to this excess excretion, accumulated water leaves the body and edema decreases. With the reduction in salt intake, fluid intake too should be reduced to facilitate loss of fluid from the body. To reduce fluid and salt intake is evidently a rational procedure for patients with edema when we have evidence of faulty elimination of one or both. Unfortunately, however, in some cases water and salt excretion by the kidney is at such a low level that we are unable so to reduce intake as to bring about an elimination in excess of intake, and therefore our restrictive measures are ineffective. Fixation of salt and water by body tissues may play a part in causing edema. In many patients with edema we find a very poor salt elimination, and usually a decrease in fluid elimination. So far as can be detected, there is no considerable increase in salt and water in the vascular area as determined by analysis of the blood. In some of these patients a large part of the ingested salt, not excreted by the kidney, is found in such accumulations of fluid as ascites. We know that protoplasm contains both salt and water. Are these amounts, under certain conditions, increased in some way, more of these substances being incorporated or fixed in body cells? This is a phase of the subject, a biophysical one, about which we have little knowledge at present. There is much evidence that edema is by no means a simple question of salt and water retention

by reason of fault in the kidney. Certain edemas in which there is no evidence of renal lesion are proof of this. Anyhow, in actual practice, salt reduction and fluid restriction often fail to decrease the edema of chronic nephritis.

Another view has been expressed that in the edematous nephritic, blood proteins, mainly albumin, are decreased, and this decreases osmotic pressure to be exerted on the filtration membrane of the glomerulus and so increases water retention. To correct this, protein-rich feeding with high carbohydrate intake is advised. In my own trials such treatment has been ineffectual, and several observers fail to find evidence of decreased blood proteins. It would seem for both reasons that this is a factor in the edema in few cases. Usually protein-low feeding is advised on the basis of the principle of securing physiologic rest already referred to.

Another view of the causation of edema attributes it to swelling of colloids on account of increased acidity and variations in salt content. Alkalis are given on this basis; in my hands this treatment has been ineffectual and seems to be harmful.

Other theories as to the causation of edema do not lend themselves to therapeutic application. The entire question of the causation of edema needs thorough study; little is really known about it.

Failing to influence the edema by means planned to change conditions leading to its formation, we are forced to rely on increasing fluid elimination while restricting fluid intake. Naturally, the attempt is made to increase renal elimination by prodding the kidney to do more work; that is, diuretics are used. In edema of nephritis they are almost invariably ineffectual, and often are harmful. In circulatory edema they strikingly increase the excretion of urine, and in mixed circulatory and renal edema they may help. In my own experience I have never seen effective diuresis from a diuretic when the basis of the edema was a renal lesion. They may be tried cautiously, because one cannot be sure of the absence in a given case of a circulatory element in the edema responsive to diuretics, and perhaps there are cases with renal edema which may respond to a diuretic.

Fluid elimination can be brought about through skin and intestine, and sweating and catharsis will increase elimination of water. Unfortunately, they are processes that cannot be repeated very frequently (more than daily); they are debilitating at best, and progress by means of them is rather slow, even when it is obtained.

Mechanical removal of fluid can be carried out, and it always gives temporary relief; rarely is it of permanent help.

3. *To Prevent the Formation of Toxic Products and to Combat Their Effects.*—What causes uremia we do not know. It is a purely hypothetic toxic substance whose formation we seek to prevent or whose elimination we try to bring about. High protein feeding directly or indirectly frequently seems to precipitate toxic manifestations. Conversely low protein feeding should retard or prevent the formation of these toxic substances. We have evidence that it so works; therefore this type of nephritic (usually the nonedematous type), with reason, has a restricted protein diet prescribed. If these toxic substances are formed, we know of no way of neutralizing them; we can only seek to eliminate them. This we attempt by diuresis if possible, by catharsis and by diaphoresis; the last

two are the most effective means. With these we combine an increased fluid intake. Mechanical removal by bleeding is the promptest and most effectual means at hand. With bleeding, transfusion of normal blood is indicated in the anemic or when repeated bleeding is required.

In this review of the treatment of nephritis I have stressed the gaps in our knowledge with the idea of emphasizing the importance of further investigation of the problem of nephritis. Methods of treatment that we use are largely empiric; to recognize this fact is more conducive to investigation than if we assumed that treatment was on a rational basis. Notwithstanding the many deficiencies in our knowledge, we are able to do much to improve the condition of the nephritic, and probably we can retard the progress of the lesion which we cannot cure.

SUMMARY

Deficiencies in knowledge as to the etiology and pathology of chronic nephritis and associated vascular lesions handicap our treatment. Treatment is largely symptomatic and based on such knowledge as we possess of renal function. Preventive treatment is very unsatisfactory. In treating chronic nephritis we aim: (1) to stay the progress of the lesion; (2) to remove edema, and (3) to prevent the formation and combat the effects of toxic substances. To stay the progress, we seek to prevent infections, and by dietary restrictions to decrease renal work and so afford physiologic rest and opportunity for repair. The latter seems a rational procedure, but we need much knowledge for a basis of determining the optimum for a prolonged intake of water, salt and protein. To remove edema, we restrict salt and fluid intake and increase elimination; but we know very little as to the cause of edema, and hence are handicapped in treatment. Increased elimination by diuretics rarely succeeds when a renal lesion causes edema. Elimination by sweating and catharsis is slow, but may succeed. Mechanical removal is effectual, but temporary. To prevent toxic manifestations, we reduce protein intake; to combat them, we increase elimination by diuresis, diaphoresis, catharsis and bleeding. Bleeding is the promptest and most effectual method of elimination of toxic substances.

Peter Bent Brigham Hospital.

ABSTRACT OF DISCUSSION

DR. LEWELLYS F. BARKER, Baltimore: Dr. Christian distinguishes three main types: acute nephritis, the less acute or subchronic form with edema, and the chronic forms that go on for a long time without edema, though they sometimes develop a terminal edema from circulatory lesions. These groups correspond closely to the three generally described as acute diffuse nephritis, subacute or subchronic glomerular renal disease, and hypertension renal disease without edema, known as interstitial nephritis and as the arteriosclerotic kidney. I do not use the term interstitial nephritis unless confronted with an inflammatory condition. Ordinarily, I prefer the term nephropathy. The etiology of these diseases is not clear. Acute nephritis and acute inflammations are doubtless often toxic in origin and very often streptococci are responsible, especially for the subacute or subchronic glomerular tubular forms with dropsy and with edema. The cause of most chronic forms without edema is hypertension. We know less about these forms as far as etiology is concerned. Probably when we know the etiology of hypertension and of arteriosclerosis, we will be more familiar with the etiology of the chronic types. Obesity, hyperthyroidism and slight

infections occurring over and over again may be responsible. As to therapy: In focal diseases without any loss of renal tension, the therapy is simple, but in diffuse lesions with disturbance of the water output, with changes in or near the cardia, disturbance of the nitrogen output and the toxemia that seems to be associated with nitrogen retention, therapy is not so simple. Once nephritis in chronic form has occurred it is impossible to remove it. In the acute forms complete recovery sometimes occurs. Chronic renal disease with hypertension may go on for ten or twenty years and death finally occurs from uremia or myocardial insufficiency. As to the methods of protecting the kidney: The two principles followed are protection of the kidney and support of the heart and circulation. Protection of the kidney is most important in the first two groups and support of the heart is most important in the third group. The three dietetic regimens used are, first, water and milk, or a milk regimen; second, the chlorid-free regimen, and third, the nitrogen-free regimen. In any case of renal deficiency often only water, a wine-glassful every hour, will do good. The patient will suffer no harm by going without food for a few days. Often uremia and marked Cheyne-Stokes breathing will disappear under water regimen. Then give equal parts of water and milk, and finally, milk, but warning against a long continuance of such a regimen. To keep patients on nothing but milk for months is a mistake, since milk alone cannot support the patient properly. There is not enough iron in milk, and it is well to give iron in some form, such as Basham's mixture.

The indication for the chlorin-poor method is water retention with dropsy. In some cases this diet does get rid of the edema, but do not give a chlorin-free diet for too long a period. Give a chlorin-poor rather than a chlorin-free diet. Milk is not chlorin-free, but a pure vegetable diet is more nearly so. Chlorin-poor diet is so unpalatable that patients use pepper and mustard to flavor it. These substances are sometimes irritating to the kidney, and following large intakes of mustard many patients have developed gastric ulcer and hematemesis. The reduction of nitrogenous substances produces good results in the early stages but cannot be continued too long. It is important to keep the intestinal tract freely open by salines and to keep the skin moist. At the same time, avoid prolonged catharsis. Venesection is the quickest way of relieving uremia; often the withdrawal of from 300 to 600 c.c. of blood without any other measures will prove of value.

Some diuretics, such as theobromin sodium salicylate and theocin, may injure the kidney cells. I never give theobromin sodium salicylate for more than three days at a time or theocin for more than two days. The effects of these drugs are much more marked in the edemas due to myocardial insufficiency than to renal insufficiency. Squill also has some effect, but aside from theobromin sodium salicylate and theocin, diuretics do very little good. Support of the heart is important in the subacute cases with edema. Rest in bed with digitalis or strophanthus, reduction of the fluid intake to 500 c.c., five small meals, and laxatives, are the things that restore the heart muscle and circulation through the kidney. Prophylaxis is what we should preach. If we keep every patient with an acute tonsillitis in bed until the throat is well, if we take care of every acute infection by rest in bed, if we get rid of abscessed teeth and other focal infections before damage is done, if we keep patients from being 40 or 50 pounds overweight, if patients will have their family doctor examine them while they are well rather than wait until they are ill, we will accomplish more of what we desire.

DR. GEORGE DOCK, St. Louis: I do not think any advance has been made in our knowledge of kidney disease by trying to substitute the term nephropathy for nephritis. Some of the most typical cases of acute kidney disease are degenerative rather than inflammatory, hence the suffix "itis" cannot be limited to inflammatory processes. Nephritis can be translated "kidney trouble" rather than kidney inflammation. But kidney trouble is the same as nephropathy or nephrosis, and so nephritis is as accurate as any other term so far proposed. At the time the early classifications of kidney disease were

made, function was practically unknown. We have learned much about kidney function, but we have not translated kidney function into pathologic anatomy. There is much to learn. Dr. W. H. Olmsted has been working on a new method, and with promising results. It consists, briefly, in letting the patient starve over night, examining the urine in concentrated form for the most important chemical constituents, then letting the patient drink large quantities of water (several liters), and then making a new series of chemical tests. I agree with Dr. Barker as to the preventive treatment of chronic nephritis. Osler called attention to the advantage of finding a small amount of albumin in the urine because the patient can be told that he has nephritis and his life be regulated so as not to be cut as short by the disease as it would be if he had no treatment. Often patients are given a bad prognosis because they have chronic Bright's disease and they live accordingly. Important points in practice are: Put the patient on a low calory diet early. A milk diet is fairly safe. Eggs are also good food in nephritic cases. Calcium, iron, bread and vegetables should be included in the diet. I prefer a salt free diet, because so many people do better with little salt. Some patients do better with red meat; some do better without meat, especially chronic cases of low grade without serious cardiac degeneration. I agree entirely with what has been said about diuretics. Exercise is important for these patients but it must be exercise suited to their condition. Chronic nephritis patients must be taught how to live.

DR. NELSON W. JANNEY, Santa Barbara, Calif.: There is still an overgreat tendency to overemphasize protein restriction in nephritics. One reason for this is the many laboratory investigations dealing with proteins, protein production, blood urea, etc., which has emphasized, perhaps too greatly, this phase of treatment. I have become accustomed to see nephritics in not a particularly favorable condition so far as the dietetic side of the treatment is concerned because of the low protein intake for a long period. Those patients are frequently rather weak and obese because the average man will make up promptly in fats and carbohydrates for what he is prevented from taking in the way of protein food. Obesity must be avoided in nephritis. The obese nephritic is usually weak and neurasthenic. Some of these patients are taking as low as 30 or 40 gm. of protein over long periods and really suffering protein starvation. Cutting down the fats and increasing the proteins help considerably. As regards the minimum protein requirement, Sherman allows 0.737 kg. of body weight. Many of these patients are given one fourth of that amount over long periods. When our knowledge of thyroid function increases, many patients with latent nephritis will be cured by treating the hypothyroidism. As in the treatment of diabetes we need a standardized dietary chart to record all data as to tests, etc. The correlation of treatment and the time period could then be worked out, in much more satisfactory condition.

DR. EUGENE S. KILGORE, San Francisco: So long as we remain ignorant of the etiology of chronic nephritis it will be necessary to keep under suspicion a number of chemical substances used as medicines and food preservatives. Experience in investigating the effects on the kidneys of certain food preservatives has convinced me that such investigations as were possible heretofore are not decisive even if they fail to show kidney damage. It is possible that such substances may be injurious only when they have been administered over a very long time or only when in conjunction with an infectious or other agent. Still more suspicion must be attached to substances known to produce definite signs of kidney irritation. I refer particularly to the salicylates, which Hanzlik and his associates have shown to be followed quite regularly by the appearance of blood in the urine whenever the drug is given in full therapeutic doses. According to present evidence, salicylates seem to be more likely to injure the kidneys than to effect a cure. They are necessary for the relief of certain kinds of pain, but they should be used much less frequently than at present. For any other purpose than the relief of symptoms the legitimacy of their use is highly questionable.

DR. HENRY A. CHRISTIAN, Boston: I am heartily in accord with everything that has been said. I am a skeptic but not a pessimist. I have my doubts but I am not without hope. I expect to see great advances in this field. What we really need is not so many studies over a short period of time of such chronic conditions as nephritis, but studies over a long period of time. We cannot find out much about a disease that probably takes from five to twenty-five years from its inception to its end by studying it for a few days or a few weeks. We cannot find out very much about the methods of treatment unless we observe carefully the effect of remedial agents over a long period of time. What we need is combined study, because no one clinic is physically able to carry out such studies. An effort is being made through the National Research Council to carry out such a plan. That means finding the money because we have plenty of good people to carry out the work and to conduct such combined investigation over, let us say, a minimum period of five years. In regard to classification: study of a condition should be followed by simplicity rather than complexity. I sometimes take more liberties with classification than others, probably because I was trained as a pathologist who dealt with minute classifications. I think in dividing the disease clinically into acute nephritis, chronic nephritis with edema and chronic nephritis without edema, probably with the addition of a group of subacute nephritis, we have gone as far as we should in classification at present. A more satisfactory classification can come only from a more complete knowledge of nephritis clinically, etiologically and pathologically.

ARTERIAL HYPERTENSION ASSOCIATED WITH ENDOCRINE DYSCRASIA *

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The purport of this paper is to offer additional evidence to the recent literature in which attempts have been made to associate a certain selected group of cases of arterial hypertension with disturbed internal secretions. In doing this the burden of proof is, first, to establish the existence of positive endocrine states in these cases; and, second, definitely to exclude the presence of a possible vasculorenal or other lesion as the cause of the arterial hypertension. With a few exceptions, the negative diagnosis of cardiovascular lesions in the cases here reported was based on the absence of present-day clinical manifestations and the course of the disease. The diagnoses of different endocrine dyscrasias were based on clinical evidence considered sufficient for the demonstration of positive endocrine disease, plus the exclusion of other possible diseases as a cause for the symptomatology. The personal observations here reported were deduced from an analysis of 500 uncomplicated endocrine diseases, in which accurate blood pressure records and other determinations worthy of report had been made. Of these 500 patients, forty-six had a systolic pressure of 160 or above. This surprisingly high number, almost 10 per cent., was considered of sufficient clinical importance to be worthy of attention, and serves as the pretext for this paper. In a considerable number of these cases, the abnormal blood pressure had been diagnosed as being due to "neurosis," or to lesions of the renal or vascular system. Contrary to the unfavorable prognosis based on renal or vascular disease, many of these patients had lived a considerable number of years, completely disregarding their high

blood pressure or other serious lesions held responsible for this sign. The treatment which had been prescribed, definitely indicated, no doubt, by the foregoing diagnosis, if in any way effective, had only served to add materially to the affliction of these patients.

In order to avoid early misconception regarding the possible relationship of endocrine states to arterial hypertension, it should be stated that there is no intention to disconnect arterial hypertension from the already well-established groups of arteriorenal lesions. The scope of this paper covers an entirely different division of cases, perhaps a small percentage of the entire number of arterial hypertensions, the clinical studies of which suggest an entirely different cause for the high blood pressure. Granted that this premise is correct, then the prognosis and treatment in these cases must, of necessity, be radically different from those that are accepted in arterial hypertension.

RELATIONSHIP OF ARTERIAL HYPOTENSION TO ENDOCRINE DISEASE

Since Addison first described epinephrin insufficiency in 1855, there has been a tendency to relate different blood pressure states to abnormal activities of the endocrine glands. The gradual decrease in blood pressure in complete insufficiency of the suprarenal glands not only attracted the attention of physiologists and clinicians (Vaquez and Aubertin,¹ Schur and Wiesel,² Ehrmann, Schlayer,³ Fränkel,⁴ Aschoff and Cohn,⁵ Oberndorfer,⁶ Stewart,⁷ Ingier and Schmorl,⁸ Janeway and Park⁹) to this relationship, but the trend of experimentation has been along the line of attempting to connect arterial diseases and those substances of the internal secretions which are known to influence markedly the unstriped muscle contractions producing constriction of these vessels. Allbutt¹⁰ has described and proved the involutionary or decrescent type of arteriosclerosis in which the arterial tension gradually decreases, adding to the clinical groups of arteriosclerosis an entirely different syndrome from that in which hypertension is associated with sclerotic changes of the vascular system.

For many years the secretion from the thyroid gland has been thought to be an antagonistic hormone to epinephrin in its effect on vasoconstriction. For instance, it is thought that thyroid secretion neutralizes the effect of epinephrin on the general muscular tonus, and particularly on the vasomotor constriction of the vascular system. Mikulicz, in his description of senility, gave, as a probable cause, the early atrophy and decreased secretion of the thyroid gland and consequent withdrawal of the vasodilator neutralizing effect of this secretion on the vascular system, allowing the epinephrin secretion to exert its pressor effect uninfluenced. Many other authorities (Weber, Lorand, Ewald, Rolleston and Williams¹¹) suggested insufficiency of the thyroid secretion as a possible cause for

1. Vaquez and Aubertin: Bull. et mém. Soc. méd. d. hôp. de Paris **22**: 705, 1905.
2. Schur and Wiesel: Wien. klin. Wchnschr., 1907, p. 1202.
3. Schlayer: Deutsch. med. Wchnschr., 1907, p. 1897.
4. Fränkel: Arch. f. exper. Path. u. Pharmacol. **60**, 1909.
5. Aschoff and Cohn: Verhandl. d. deutsch. path. Gesellsch., 1908, p. 131.
6. Oberndorfer: Verhandl. d. deutsch. path. Gesellsch., 1909, p. 273.
7. Stewart: J. Exper. M. **14**: 377, 1911; *ibid.* **15**: 547, 1912.
8. Ingier, Alexandra, and Schmorl, G.: Deutsch. Arch. f. klin. Med. **104**: 125, 1911.
9. Janeway, T. C., and Park, E. A.: J. Exper. M. **16**: 541, 1912.
10. Allbutt, T. C.: Diseases of the Arteries, Including Angina Pectoris, London, Macmillan & Co. **1**; **2**: 81, 1915.
11. Weber, Lorand, Ewald, Rolleston and Williams in Allbutt, T. C.: Diseases of the Arteries **1**: 230, 1915.

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the so-called senile, involutionary or decrescent type (Allbutt) of arteriosclerosis associated with hypotension. On the other hand, Victor Horsley,¹² Rolleston,¹³ and others have denied such relationship. Allbutt, in his exhaustive specialized observation on this particular type of arteriosclerosis, reports negative effects on the hypotension from thyroid therapy.

It has been generally recognized, clinically, that arteriosclerosis is a rather common accompaniment of cretinism, as well as of gout and other so-called metabolic diseases. On the other hand, the changes of the blood pressure in different cases of myxedema cannot be attributed solely to the lack of thyroid substance. If this were true, the pressure would rise in all cases, whereas it is only in a comparatively small percentage of cases that abnormal arterial tension, either increased or decreased, has been noted. Spiethoff,¹⁴ Maire,¹⁵ and Treves¹⁶ found a variable blood pressure compared to the thyroid activity and other symptomatology of hyperthyroidism. Changes in the blood pressure during the climacteric have been assigned by Wilson¹⁷ to the fact that the internal secretion from the ovary has a marked vasodilator effect on the arteries, and that consequently its absence during the menopause is a factor in the rise of the blood pressure in this peculiar group of cases. Nevertheless, the hypertension in these cases must be due to causes other than the disturbed secretion of the ovaries, otherwise, it would occur in a larger percentage of cases. The chromaffin secretion is supposed to influence the sympathetic, and not the autonomic nervous system. Other explanations (Gaskell, Cushny, Dixon and Harvey¹⁸) for the peculiar localized vasoconstriction effect on the vascular system have been attributed to the different amounts of epinephrin contained in the blood in different arteries of the body. Stewart⁷ has proved that none of the theories mentioned above has been substantiated convincingly enough to give them consideration.

THE PATHOGENESIS OF ARTERIAL HYPERTENSION

Despite the prodigious amount of work since Traube¹⁹ expounded his mechanical theory of renal vasoconstriction as the cause of increased blood pressure in 1856, the genesis of arterial hypertension has remained unsolved. It would not be pertinent at this time to attempt to classify the various theories assigned to this interesting sign. Suffice it to say that a great many theories have been advanced which propound other than actual organic or structural changes in the arteriorenal system as the causative factor for the high blood pressure. Those well-known structural lesions of the cardiovascularrenal system, so commonly associated with high blood pressure will be omitted from this discussion; they will be placed in a different group from those which I shall describe. The type of arterial hypertension under consideration is supposed to be entirely dissociated from vascularrenal lesions, or if such lesions, as late changes, are present, the hypertension, it is assumed, antedates them by many years. It is presumable that when such high blood pressure exists for a period of years, arterio-

sclerosis results as an effect (but is not the cause), and that terminal changes such as cerebral hemorrhage and cardiac insufficiency (but never uremia) may be the end-result in these cases. Considerable controversy obtained in the early literature about just such cases of arterial hypertension, and these terms were assigned by various authors to these arterial hypertensions: (1) "prealbuminuric stage of Bright's disease" (Mahomed,²⁰ 1879); (2) "latent sclerosis" (von Basch); (3) "presclerosis" (Huchard, 1893); (4) "essential hypertension" (Krehl,²¹ and Mosenthal and Hamman²²); (5) "hyperpiesia" (Allbutt, 1894); (6) "angiosclerosis" (Thoma); (7) "pure hypertension" (Josué and Block²³); (8) "neurotic hypertension" (Bradford, 1898); (9) "primary cardiovascular hypertension" (Janeway,²⁴ 1906); (10) "benign hypertension" (Vohlhardt and Fahr), and (11) "functional hypertension" (Martinet,²⁵ 1912). Just what relation the diseases of the ductless glands bear to the types of hypertension just enumerated cannot be determined. It is probable, however, that a better knowledge of the diagnosis of internal secretion may reflect considerable light on the etiology of these so-called nonvasculorenal types. Should this occur, it may help to explain why a great many of the exogenous causes, such as mental strain, heredity, intoxications and infections, which have such a marked effect on the secretions of the ductless glands, have been given so constantly as etiologic factors for arterial hypertension.

It may also help to explain why obesity and other metabolic states are so frequently associated with arterial hypertension. While it is true that as yet no convincing proof has been offered, either by histopathology or physiologic chemistry, for the direct association of arterial hypertonia with endocrine dyscrasias, there is, nevertheless, increasing clinical evidence that arterial hypertension does exist in positive endocrine cases in which there is no definite manifestation of either vascular or renal disease.

INCIDENCE OF NONVASCULORENAL ARTERIAL HYPERTENSION

Janeway, after setting aside all doubtful cases, found among 130 patients with blood pressure of over 200 that no renal disorder could be detected in seventeen cases, or 13 per cent. He called these cases "primary cardiovascular hypertensions." In 100 cases of arterial hypertension studied very exhaustively by Rappleye,²⁶ in forty-five cases, or almost 50 per cent, there was practically negative urine, blood urea, blood nitrogen, and phenolsulphonephthalein output. In 100 cases reported by Schneider,²⁷ seventeen were classified as "benign" or "essential hypertension," on this basis: (1) normal vessels; (2) retention of concentrating power of the urine (Mosenthal's test); (3) normal urine, with the exception of an occasional hyaline cast and a trace of albumin; (4) phenolsulphonephthalein output normal or slightly below normal, and (5) normal blood urea and creatinin. He states, however, that, if these cases were observed long enough, from 10 to 20 per cent. would later be classed with the

12. Horsley in Allbutt: *Diseases of the Arteries* 1:230, 1915.

13. Rolleston: *Clin. J.*, June 21, 1905; *Lancet*, Sept. 28, 1907.

14. Spiethoff: *Zentralbl. f. inn. Med.* 23:849, 1902.

15. Maire: *Thèse de Paris*, 1883.

16. Treves: *Riv. iconog. d. sez. nerv. d. Policlin. gen. di Torino* 1:2, 1897.

17. Wilson, S. A. K.: *Brit. M. J.* 1:1261 (June 14) 1913.

18. Gaskell, Cushny, Dixon and Harvey, in Allbutt: *Diseases of the Arteries* 1:228, 1915.

19. Traube: *Gesammelte Beiträge* 3:164, 235; Allbutt, T. C.: *Diseases of the Arteries* 1:7, 1915.

20. Mahomed: *Guy's Hosp. Rep.*, 1879.

21. Krehl: *Deutsch. med. Wehnschr.*, 1905, p. 1872.

22. Mosenthal, H. O., and Hamman: *Pennsylvania M. J.* 22:28 (Feb.) 1919.

23. Josué, O., and Block, L.: *Arch. d. mal. du cœur* 1:162 (March) 1908.

24. Janeway: *Am. J. M. Sc.*, May, 1906.

25. Martinet: *Pression artérielle et viscosité sanguine*, *Presse méd* 19:915, 1911.

26. Rappleye, W. C.: *Boston M. & S. J.* 179:441 (Oct. 3) 1918.

27. Schneider, J. P.: *Journal-Lancet* 38:247 (May 1) 1918.

malignant or nephritic groups. Of these 100 cases, 5 per cent. were grouped with the type due to endocrine dyscrasias; 3 per cent. to exophthalmic goiter; and 2 per cent. to the climacterium. An analysis of this report, based on 500 endocrine cases, demonstrates that forty-six, or nearly 10 per cent., were associated with high blood pressure. Furthermore, in a general consideration of all the cases of arterial hypertension personally observed, comparatively few have been found independent of the vasculorenal lesions which could not be classified in this group.

RECENT LITERATURE ASSOCIATING ARTERIAL HYPERTENSION WITH ENDOCRINE DYSCRASIA

During the last year there have been three papers (Riesman,²⁸ Hopkins,²⁹ and Gutmann³⁰) referable to increased hypertension associated with the menopause. Spiethoff, from an analysis of twenty cases of exophthalmic goiter, found a variable blood pressure dissociated from the general symptomatology. With these exceptions, there has been comparatively little literature extant referable to any number of endocrine states or cases associated with high blood pressure. Isolated cases of endocrine diseases have been reported, in which high blood pressure has been noted. Gibson³¹ suggested the idea of an association of arteriosclerosis with pituitary disorder, and reported a number of cases in which there was arterial hypertension. Riesman²⁸ noted, besides the relation of arterial hypertension to the climacteric, its presence in both pituitarism and thyroidism. Hopkins,²⁹ in two exhaustive papers, has fully described this relationship of arterial hypertonia to the menopause. Plummer has noted its incidence in thyroidism.

In the forty-six cases here reported, it will be noted that high blood pressure was found associated with disturbed activity of various ductless glands, occurring in both sexes and in ages other than that of the menopause. The largest percentage of cases was grouped with those in which occurred polyglandular insufficiency, involving the thyroid and the pituitary gland. It was found associated, however, in cases in which apparently but one endocrine gland was involved.

ABSTRACTS OF ILLUSTRATIVE CASES

CASE 1 (General 1259).—*Diagnosis: Polyglandular insufficiency (hypopituitarism and hypothyroidism).* Blood pressure (before treatment), 200 mm.; (after treatment), 160/95 mm.

History.—Mrs. E. S., aged 38, referred by Dr. F. H. Lamb, Davenport, Iowa, complained of marked fatigability; dyspnea on effort; nervousness, emotionalism, and headaches, of six years' duration. The onset of these symptoms had been gradual, with attacks of weakness, increasing fatigability, nervousness, emotionalism and headaches. One year after the onset, she suffered from attacks of very marked abdominal distention or bloating, associated with belching and constipation. During the entire course of the symptoms she had gained 85 pounds in weight, 25 pounds within the last eight months. There had also been irregular periods of polyphagia, polyuria and polydipsia. The hands and feet had been swollen and stiff intermittently during the last few years. She had suffered from somnolence, a marked complaint during the day, and insomnia at night. She had had measles and mumps during childhood, and bronchitis at the age of 16. Other findings were negative, except the menstrual. She had matured at 11½ years, since when the menses had been

irregular, of three days' duration and the flow had been scanty. During the last two years, the flow had increased in amount and had been associated with slight dysmenorrhea. The patient's mother had died at the age of 76. She had been very obese, drowsy and somnolent for years. The cause of her death was unknown. One sister was very obese; four others were living and well. One brother was very obese, and had been relieved by thyroid treatment. One brother had very high blood pressure.

Examination.—The measurements were: from the symphysis to the soles of the feet, 32 inches (81 cm.); from the symphysis to the vertex, 34 inches (86 cm.), and the span was 70 inches (178 cm.). She was a large woman, weighing 207¾ pounds, with a tendency to the girdle type of obesity. There was considerable fulness through the thighs, and padding about the hypogastrium and over the mons. There was some enlargement of the legs and arms, with evidence of subdermal thickening. The skin was dry, and there was a fine desquamation. There was a slight growth of hair on the legs, but no abnormal distribution about other portions of the body. The hands were of the thyropituitary type: the fingers were tapering, the lunular markings were faintly visible, and there was definite puffing of the backs of the fingers and hands. The feet were of the same character. The color of the body was good and of the face, very good. The systolic blood pressure before treatment was 200 mm. of mercury; and after treatment, 160/95 mm. Regional examination was negative, except for evidence of an endocrine heart. A systolic murmur was heard over the pulmonic area, which disappeared on inspiration. The aortic second sound was slightly accentuated. Palpable arteries were not sclerosed. Single catheterized and twenty-four hour specimens of urine were negative. The phenolsulphonephthalein test gave a total of 85 per cent. Blood analysis revealed: hemoglobin, 110 per cent.; white blood cells, 12,600; red blood cells, 5,670,000. A smear and Wassermann reaction were negative. Nonprotein nitrogen was 25 mg. Sugar tolerance was normal. Blood sugar (after fifteen hours' fasting) was 0.130 (normal, from 0.10 to 0.120); one hour after 162 gm. glucose, 0.219 (normal, 0.180); two hours after 162 gm. glucose, 0.099 (normal, from 0.10 to 0.150). Basal metabolism (Benedict's) had decreased 10 per cent.

CASE 2 (General 1150).—*Diagnosis: Polyglandular insufficiency, hypopituitarism and hypothyroidism (pituitary hibernation). (Achyilia and spastic colon.)* Blood pressure, 198/140 mm.

History.—Mr. C. W. M., aged 58, complained of marked somnolence (he was unable to remain awake unless actively engaged in some physical procedure); nocturnal insomnia and attacks of dyspnea, attacks of gastric disturbances, distention, fulness and pressure in the epigastrium; gradual gain of weight to 255 pounds, and high blood pressure, from 205 to 220 mm., of five years' duration. Somnolence had been gradual during the last few years, the patient being unable to keep awake while reading or talking. The onset of obesity was gradual; a few years before there had been a gain of 10 pounds within five weeks. High blood pressure, recording over 200 mm., had been first noted five years before, at the age of 53. He had suffered from nocturnal insomnia and dyspnea during the last year, and had had to assume the semireclining position for sleep. Dyspnea was present usually in the early morning hours. He had suffered an attack of renal colic several years before. He had had influenza one year before, and an operation on the nose, under a local anesthetic. The tonsils had been removed thirty years before. He had suffered from migraine during the ages of 16 and 17, but not since that age. He was a mild user of tobacco, and an inordinate eater. One sister had nephritis and his mother had migraine.

Examination.—The patient weighed 255 pounds. The lower measurement was 36 inches (91.5 cm.) and the upper measurement, 37 inches (94 cm.); the span was 76 inches (193 cm.). There was an osseous development of probable pre-adolescent anterior lobe hyperpituitarism. There was considerable obesity, but no extreme broadening through the hips. The abdomen was prominent; there was some bulging in the flanks, and a very slight padding about the mons.

28. Riesman, David: Hypertension in Women, J. A. M. A. 73: 330 (Aug. 2) 1919.

29. Hopkins, A. H.: Treatment of Climacteric Hypertension, New York M. J. 110: 930 (Dec. 6) 1919; Am. J. M. Sc. 157: 826 (June) 1919.

30. Gutmann, B.: J. M. S. New Jersey 15: 122 (April) 1918.

31. Gibson: Address on Medicine, Liverpool, 1912.

There was a slight abnormal distribution of hair on the upper abdomen; none on the chest, and a slight growth on the legs and arms. There was no edema, very slight pitting on pressure and no marked subdermal thickening. There were a few indifferent scars and pigmentations about the shins. The hands were of the pituitary type: the palms were broad, the fingers fairly long and tapering, and the lunular markings faintly visible. The feet were of the same general character. The skin was somewhat dry, showing very fine desquamation. The hands and feet were warm. The color of the body was good, the face was florid, and there was a slight general sallowness. There was no muscular atrophy, no abnormality of gait or station, and no cyanosis or dyspnea. The pulse was moderately slow, regular, with a quick rise and fall, equal and symmetrical. There was no pistol-shot sign in the forearm, nor Quincke sign visible in the finger nails. The blood pressure was 198/140 mm. There was a systolic murmur in the pulmonic area, which disappeared on deep inspiration. The second aortic sound was accentuated. The palpable arteries were easily compressed and not thickened or tortuous. The roentgen ray revealed a normal sella turcica (12 by 13 mm.). Stereoscopic examination of the chest revealed fulness over the right auricle and a normal aortic shadow. There were suggestive shadows of calculi in the left kidney. Fluoroscopic examination of the chest revealed aorta, heart, diaphragm, stomach and colon normal. Blood examination revealed: hemoglobin, 76 per cent.; red blood cells, 4,460,000; white blood cells, 8,400; differential count and stained smear, normal; Wassermann reaction, negative. Examination of stomach contents disclosed free hydrochloric acid, negative; otherwise normal. There was a trace of albumin in the urine. The phenol-sulphonephthalein test gave a total of 38 per cent. Blood sugar (after fifteen hours' fast) was 0.120; one hour after 194 gm. glucose, 0.246; two hours after 194 gm. glucose, 0.180. The basal metabolism decreased 25 per cent. (Benedict's). Electrocardiographic examination revealed an absence of preponderance of the left ventricle.

Treatment and Results.—The patient was placed on thyro-pituitary substitution treatment (and hydrochloric acid and essence of pepsin for the achylia). The result of the therapy during two months' observation was complete relief of the gastric disturbances, somnolence, nocturnal insomnia and dyspnea, and reduction of the blood pressure to 154 mm. and of the weight to 220 pounds.

CASE 3. (General 1260).—*Diagnosis: Hyperpituitarism and hyperthyroidism.* Blood pressure, 220/135 mm.

History.—Mr. H. S., aged 45, referred by Dr. J. E. Jost, Jefferson City, Mo., complained of attacks of headache, vertigo, weakness, nervousness, insomnia and loss of memory; high blood pressure, above 200 mm.; loss of weight, amounting to 40 pounds during eighteen months, and marked attacks of dyspnea. The high blood pressure had been present for six years. The onset was gradual, with a mild sensation of fulness in the head, and vertigo, eight years before. Two years following this, high blood pressure was noted at examination, the systolic pressure being 190, and failing to react to dietetic, medicinal, electric or hydrotherapeutic treatment. Following the onset of the disturbance, there were terrific attacks of headache, with extreme vertigo, throbbing sensations and memory defect. There was loss of hearing in the left ear during the third year of the disease. Attacks of abdominal distention had been present during the last eighteen months, for which the patient frequently took repeated enemas, without relief. Following the onset of this disturbance, he began to lose weight, which loss had totaled 40 pounds during the last year and a half. He had suffered from no infectious diseases, no operations and no injuries. He did not use tea or coffee, he chewed tobacco, seldom smoked, used alcohol moderately, and had discontinued its use for the last seven years. The family history was negative.

Examination.—The measurements were: from the symphysis to the soles of the feet, 35¼ inches (89.5 cm.); from the symphysis to the vertex, 32½ inches (82.5 cm.); the span was 72 inches (183 cm.). The general development was good; there was some loss of weight but no marked evidence of

emaciation. There was an osteochondroma on the inner aspect of the left leg, just below the knee. There was a marked growth of hair on the legs, with abnormal distribution on the upper abdomen, chest and forearms. There was a slight pallor of the body, but the color of the face was very good. The hands were long; the fingers were not tapering; the lunular markings were visible, and there was slight cyanosis of the nails. There was no edema or dyspnea, and no abnormality of gait or station. The thyroid was not enlarged. The systolic murmur in the anterior axillary line was not modified by respiration. There was marked accentuation of the second tone at the base. The systolic murmur heard at the base was transmitted upward, along the right side to the carotid, on the left side as high as the clavicle, and disappeared entirely on deep inspiration. There was marked accentuation of both second tones, and no tortuosity, motile pulsation or sclerosis of the superficial vessels. The blood pressure was 220/135 mm. There was a trace of albumin in the urine. The phenolsulphonephthalein test gave a total of 52 per cent. Blood examination revealed: hemoglobin, 110 per cent.; red blood cells, 5,910,000; white blood cells, 6,800. A stained smear and differential count were normal; the Wassermann reaction was negative. Blood sugar (after fifteen hours' fasting) was 0.116; one hour after 115.3 gm. glucose, 0.148; two hours after 115.3 gm. glucose, 0.132. The non-protein nitrogen content was 25 mg. Fluoroscopic examination revealed normal head, neck, chest, heart, mediastinum and diaphragm. Electrocardiographic examination disclosed absence of left ventricular preponderance. Basal metabolism had increased 4 per cent.

CASE 4 (General 1197).—*Diagnosis: Menopause (hypothyroidism and hypo-ovarianism).* Blood pressure, 220/130 mm.

History.—Mrs. S. B. C., aged 53, complained of a throbbing sensation in the head, tinnitus; dyspnea on exertion; nervousness and insomnia; abdominal distention and constipation; of four years' duration, from the time of the menopause (age 49); blood pressure, 210 mm. The onset had been gradual, with nervousness, insomnia, a throbbing sensation in the head, and headaches. Soon afterward an abdominal syndrome began, consisting of distention, constipation, a sensation of gurgling, and diffuse tenderness. There were no localized or focal symptoms or complexes resembling appendicitis or gallbladder or renal disease. During the course of the patient's disease, she was in bed three times with attacks of so-called sciatica, which were limited to the hip, never occurring along the course of the sciatic, and never being associated with temperature or localized tenderness. Arterial hypertension was first noted two years before, since which time it has fluctuated during twenty-four hour intervals, from 210 to 150 mm. She had had measles, mumps, whooping cough and chickenpox. She had undergone two operations: a perineorrhaphy and amputation of the breast for benign tumor. The menstrual history was normal, with the exception of a scanty flow and a menopause which occurred at the late age of 49. The family history was negative.

Examination.—The measurements were: from the symphysis to the soles of the feet, 34 inches (86.25 cm.); from the symphysis to the vertex, 32½ inches (82.5 cm.); the span was 67½ inches (171.5 cm.). The patient was a large woman, but well built and without abnormal obesity. There was slight fulness through the hips (not abnormal); no fulness over the hypogastrium or mons; very slight growth of hair on the lower extremities, and no abnormal distribution on the upper extremities. There was an erythematous blush on the base of the neck and upper chest. The hands were long and fairly slender; the fingers inclined to taper, and the lunular markings were visible. There was no edema, cyanosis or dyspnea, and no abnormality of gait or station. The color of the body and face was good. The thyroid was normal. There was a diffuse impulse over the precordia, accentuated by nervousness. The apex beat was heard in fourth interspace, at about the midclavicular line, forceful but not heaving. There was no palpable thrill or diastolic shock. Borders, apex beat, midsternal line. The first tone at the apex was loud and booming, followed by a short

systolic murmur, which disappeared on inspiration (cardio-respiratory). The same murmur was heard in the pulmonic area, and a similar murmur in the aortic region, which disappeared on inspiration. The aortic second sound was accentuated and sharpened. The pulse was moderately rapid, of fair volume and tension, regular, equal and symmetrical. The peripheral vessels were free from mobile pulsations, not tortuous, nodular or sclerosed. The blood pressure was 220/130 mm. Single and twenty-four hour specimens of urine were normal. The phenolsulphonephthalein test gave a total of 60 per cent. Blood examination revealed: hemoglobin, 104 per cent.; white blood cells, 7,200; red blood cells, 5,140,000. A stained smear was normal; the Wassermann reaction was negative. Nonprotein nitrogen was 23 mg. Blood sugar (after fifteen hours' fasting) was 0.090; one hour after 111 gm. glucose, 0.159, and two hours after 111 gm. glucose, 0.111. Basal metabolism decreased 18 per cent. Fluoroscopic examination of the head, neck, lungs, thoracic vessels, mediastinum and diaphragm was normal; there was very slight left ventricular hypertrophy. Electrocardiographic examination revealed a slight left ventricular preponderance.

Treatment and Results.—Under one week's treatment, consisting of thyroid and corpus luteum substitution, the blood pressure dropped to 144, and remained below 150 for three weeks.

CLASSIFICATION OF CASES

1. Pituitary gland	5
(a) Hypopituitarism	4
Simple hypopituitarism	1
Pituitary headache	1
Eunuchoid gigantism	2
(b) Hyperpituitarism	1
Pituitary glycosuria	1
2. Thyroid gland	12
(a) Hypothyroidism	8
(b) Hyperthyroidism	4
3. Ovaries	15
(a) Menopause	11
Associated with hypothyroidism	4
Associated with hyperthyroidism	3
Associated with hypopituitarism	2
Associated with eunuchoidism	1
Associated with migraine (pituitary?)	1
(b) Gonad	4
Eunuchoidism	1
Early castrate	1
Late castrate (with hypothyroidism)	2
4. Polyglandular	14
(a) Pituitary and thyroid	12
Simple pituitary and thyroid insufficiency	9
Associated with pituitary headache	1
Associated with hibernation	1
Hypersecretion of pituitary and thyroid	1
(b) Thyroid and gonad insufficiency	1
(c) Pituitary, thyroid and gonad insufficiency	1
Total	46

ANALYSIS OF PERSONAL OBSERVATIONS

In an analysis of more than 500 endocrine cases observed during the last four years, it was found that forty-six, or about 10 per cent., had a blood pressure above 160. Those cases in which a diagnosis of nephritis or arteriosclerosis was suspected were excluded. Of the forty-six, the highest percentage of arterial hypertension was found among the pluriglandular dyscrasias. Fourteen of the forty-six, or 30 per cent., were classified as having more than one gland involved, with none so sufficiently dominating the picture or initiating its course that it might be considered the primary secretory disturbance, with the other glands classed as secondary. Combinations of the pituitary and thyroid hyposecretions were present in twelve cases, or about 26 per cent., of the hypertensive cases. The next highest percentage, eleven cases, or one fourth of the entire number, occurred at the menopause. In cases in which there were glandular disturbances apparent in this group, they were merely considered as a part of the climacteric. For instance, in four there was evidence of hypothyroidism; in three, hyperthyroidism, and in two, hypopituitarism. Of the

primary gonad insufficiencies, there were four cases, or 9 per cent.; one in a eunuchoid person, two in a late, and one in an early castrate. The next in frequency was the thyroid group, with eight cases, or 17 per cent., classified as pure hypothyroids, and four, or 8 per cent., as hyperthyroids. The pituitary group ranged lowest in number, five cases, or 11 per cent., being classified as simple dyscrasias of this gland. Of this number, four were hypopituitarism and one hyperpituitarism. One of these was a case of pituitary hibernation, one a case of pituitary headache (both reacted to substitution pituitary treatment), one a hypophyseal glycosuria, and two eunuchoid giants.

DIAGNOSIS

The diagnosis of this type of arterial hypertension is necessarily difficult and perhaps many times questionable. The important diagnostic objectives are the exclusion of the following organic lesions: (1) renal disease; (2) cardiovascular disease; (3) subacute or chronic infections (focal and general) and intoxications (syphilis, lead poisoning, gout, etc.); (4) other conditions producing arterial hypertension (increased viscosity of the blood in plethoric individuals, obesity, diabetes, migraine, organic nervous diseases, pregnancy, eclampsia, premenstrual arterial hypertension, and intermittent or paroxysmal hypertension).

1. The first essential is to exclude, if possible, all varieties of renal disease. Dependence has been placed on complete and prolonged observation of the case, including repeated urine analyses, concentration power of the kidney (Mosenthal renal test), the phenolsulphonephthalein functional test, blood retention products (total nonprotein nitrogen, urea, creatinin and uric acid), retinal changes, and cardiovascular signs ordinarily associated with renal disease, such as cor renale, left ventricular preponderance (electrocardiogram), and accentuation of the second aortic tone. The variability of the blood pressure has been an important differential sign. Marked vacillation of from 40 to 60 mm. of pressure in twelve hours, or a rapid reduction of the pressure of more than 60 mm. by treatment, has been considered not due to renal disease. For instance, in Case 4, reported in this article, the systolic pressure, according to the history, had varied from 210 to 150, and quickly fell from 220 to 134 after three days of a treatment that allowed the patient a regimen of moderate exercise, a liberal diet, and freedom from eliminants and vasodilators. On such non-nephritic treatment, the pressure remained below 150 for the following two weeks.

2. The exclusion of arteriosclerosis is another very difficult problem. It is well known that there is frequent sclerosis of the visceral arteries, with absence of all signs of sclerosis of the superficial or palpable vessels. A history of a previous disease that might have produced either arteriosclerotic degeneration or renal lesion, or a thickening, nodulation, tortuosity or pulsating mobility of the superficial vessels is, of course, significant. Changes in the conjunctival and retinal vessels, or changes in the arch of the aorta or the left ventricle of the heart (demonstrated by roentgenologic examination) must also be sought. The clinical symptoms that are frequently associated with visceral sclerosis, sclerotic dementia and angina pectoris, abdominis and cruris are valuable diagnostic aids.

3. Besides the foregoing negative evidence for vasculorenal disease, there should also be negative evi-

dence for focal or general infections, which frequently have a very decided effect on arterial tension. This also pertains to subacute or chronic intoxications and other metabolic diseases, such as plumbism and gout.

4. The fourth group of conditions which must be borne in mind borders very closely on the type of arterial hypertension that has been under discussion as being associated with endocrinous states; possibly some of these should really belong to the group described. Bac,³² in a recent publication, has renewed the interest in the viscosity of the blood as a possible cause for arterial hypertension in plethoric or obese persons. The intermittent or paroxysmal hypertensions present in migraine, pregnancy, eclampsia and the premenstrual state, or in other so-called functional, neurotic or emotional arterial hypertensions, would probably either fall within this class of arterial hypertensions, or be disqualified entirely, because not persisting for sufficient time to be classified as a definite syndrome. Their differentiation depends on repeated blood pressure observations during the same day, or for a number of consecutive days. In fact, a single blood pressure reading is unreliable, and needs many confirmations. In the great majority of the cases that I have observed, the initial blood pressure reading was usually entirely disregarded, on account of being from 20 to 40 mm. higher than the average procured by making daily examinations. At the same time, the daily variation and the susceptibility of the patient to temporary impressions must, of course, be given consideration in making the final average estimation of the blood pressure.

It must be acknowledged that even after the most searching observations, all clinical evidence sufficient to differentiate and exclude renal and vascular lesions may be lacking, and yet a positive renal or arterial lesion be present. This fact must be borne in mind in each individual case; otherwise, the diagnosis in these cases is subject to a certain percentage of error.

Besides the foregoing negative evidence, there must be present in each of these cases a sufficient history and a definite syndrome of demonstrable endocrine disturbance to account completely for the symptomatology.

PROGNOSIS

The prognosis in these cases is very much more favorable than in those in which there is high arterial tension due to definite vasculorenal lesions. Their course is much longer and less beset with disturbing symptoms than other types of arterial hypertonia. It is true that many of them develop arterial disease, sooner or later; possibly others develop renal disease. The termination of these cases is rarely that accompanying any of the nephropathic diseases, such as uremia. If the arterial tension is not reduced or reducible, many cases terminate from cerebral hemorrhage or cardiac incompetence. For this reason, the term "benign or functional hypertension" is a misnomer, since the high blood pressure is certainly one in which the indications for treatment are just as urgent as in those due to other causes.

TREATMENT

The treatment depends entirely on the treatment of internal secretory dyscrasia, with which this abnormal hypertonus is associated. The general indications for treatment are merely those of correcting, if possible,

the disturbed internal secretory balance. If this can be accomplished, in the majority of the cases the blood pressure will be very much reduced, and frequently return to and remain within normal limits. It can readily be understood that the treatment for these cases is entirely different from that directed toward nephritic or arteriosclerotic hypertension.

The low protein and salt-free diet, as ordinarily recommended for these conditions, has no basis in the majority of cases. Increased elimination, ordinarily applied to the nephritic cases, is also frequently contraindicated. It has been noted, in some of these cases, that the drugs which appear to be absolutely contraindicated in other types of arterial hypertension, on account of their vasoconstriction effects, are really applicable and effective agents. For instance, pituitary extract (hypophysial posterior lobe extract) has been demonstrated actually to reduce the blood pressure in pituitary hibernation, probably on account of its effect on the carbohydrate or fat metabolism, which is the basic fault or cause of the arterial hypertension in these cases. Epinephrin, on account of its hormone effect on the gonads, might also be indicated in the menopause or gonad types. In the hypersecretory cases, such as hyperthyroidism and hyperpituitarism, surgery might even play a rôle in an attempt to relieve the high blood pressure. This is an instance in which arterial hypertension itself would not be a contraindication to a surgical operation, provided the diagnosis is sufficiently clear to prove that the increased secretion from these glands is its sole cause.

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ABSTRACT OF DISCUSSION

DR. FRANCIS M. POTTENGER, Monrovia, Calif.: We have studied the cause of disease, and the results of disease, but we have neglected to study how the cause operates to produce the effect. Nerve control and internal secretions are two factors through which stimuli operate to produce results. A symptom is a resultant of all stimuli. Consequently, it is difficult to say that any one produces this result. We must learn how to analyze conditions and then determine the results. We must bear in mind also the psychical condition. Nearly all neurotics are merely psychics. Stimuli are discharged either through the nervous system or through the endocrine system and upset balance. The result may be a hyperarterial tension or a hypoarterial tension. These are the conditions that must be studied.

DR. GUSTAVE ROUSSY, Paris, France: (Dr. W. S. Thayer, Baltimore, translated the substance of Dr. Roussy's remarks.) Dr. Roussy refers to the observations made some years ago by Josué, who provoked a disease of the vessels, an arteriosclerosis, in rabbits by treatment with the suprarenals. The frequency of suprarenal changes in hypertension in arteriosclerosis was also studied by Mendel and others, who pointed out particularly the changes in the cortical part of the suprarenals. Vaquez demanded further whether this were, perhaps, after all not the primary element in many of these instances of hypertension, clinical hypertension, and anatomic arteriosclerosis.

Dr. Roussy studied with Dr. Clunet, about 1,000 cases, carefully, anatomically. In 200 cases, a systemic examination was made of the glands of internal secretion, and in many instances definite changes were made out, very commonly in the suprarenals and particularly in the cortical substance; sometimes there was a hyperplasia of the pituitary body, especially of the chromophil cells or eosinophils, while the chromophil cells were increased. Also sometimes changes in the thyroid were present; hyperplastic changes were found in the parathyroids. In some instances well marked arteriosclerosis and hyperplasia of the suprarenals were also noted. Dr. Roussy pointed out that there are other

32. Bac, A. A.: *Internat. Clinics Series* 29, 1: 116, 1919.

instances of arteriosclerosis in which changes in the glands of internal secretion are not to be made out. One should study and consider not only the anatomic conditions, but the interpretation of those conditions. In some cases of arteriosclerosis the suprarenals are affected; in others, they are not. The coincidence of the arteriosclerosis and the lesions of glands of internal secretion may be interpreted in the sense that the arteriosclerosis is purely secondary to the hyperplastic changes in the glands of internal secretion. It may be, on the other hand, that the converse is true, that the changes in the glands of internal secretion may be secondary to the changes in the vessels; or lastly, they both may be the result of some other condition of which we are as yet not cognizant. At this moment the explanations are hypothetic. It is a very important matter for further study.

DR. C. J. FISHMAN, Oklahoma City: Clinically, we occasionally see a type of case in which we may say that the endocrine system is affected, namely, in cases of high blood pressure, with a mild degree of glycosuria. We must remember that glycosuria may be produced by injections of suprarenal, and that this substance also produces an increased blood pressure. That is one basis for conclusion. Another basis is that clinically these cases of high blood pressure, with a mild degree of glycosuria, when treated by the reduction of the carbohydrates, return to normal, the blood pressure is reduced and the glycosuria disappears. I have seen three such cases and I believe that increased suprarenalism may be responsible for the high blood pressure and the glycosuria.

DR. F. M. ALLEN, New York: According to present evidence diabetes is not a disturbance of the suprarenal system. The glycosuria is not due to suprarenal stimulation. The vascular changes produced by epinephrin injections in rabbits are probably not a true reproduction of human arteriosclerosis. Many other agencies will produce such changes in the rabbit, which is a very susceptible animal.

Dr. Roussy failed to mention the important contribution of French authors to this subject, beginning in 1903. They established a relation of the chlorids not only to edema but also to high blood pressure. Salt restriction is the most effective means for the control of hypertension, and it has fallen into disuse and disbelief largely because of faulty application. It is seldom enough to tell patients to avoid salt, for most of them, even when conscientiously trying, will still get several grams daily, which will suffice to keep up the pressure in most cases. Before calling any case a failure, it is necessary, first, to give a genuinely salt-poor diet, containing less than 0.5 gm. of sodium chlorid daily; second, to make such a diet appetizing, so that the patient will eat it; and third, to control the treatment by blood and urine analyses to prove the efficiency of the chlorid restriction. Most such patients need treatment in an institution, to be treated and instructed as thoroughly as are diabetics, in order to obtain the best results. In this way some high pressures are brought to normal; some are altered very little or not at all; but the great majority of patients obtain some degree of relief. Cases of hypertension coming on about the menopause seem generally to be of the high chlorid type, and yield to salt restriction. Suitable tests may reveal the beginnings of some such cases long before the menopause, and study of the salt economy may prove important in relation to etiology and prophylaxis. A patient may have more than one disease, neither one dependent on the other. A woman had hypertension and myxedema. Her hypertension responded to salt withdrawal, and her myxedema to thyroid extract. Apparently the two conditions were independent. Many cases of combined metabolic disorders may perhaps be of this type. My longest observation of successful control of hypertension by salt restriction was fifteen months. Wherever good results have been obtained they have been permanent.

DR. W. S. THAYER, Baltimore: The actual physiologic cause of hypertension in most cases is by no means clear. Spasm of the peripheral vessels or extensive thickening of the small peripheral arteries is followed by hypertension, and that is all we know about it. The occurrence of associa-

tions is an important point to bear in mind. It will be very interesting to know the effect of treatment in the cases of hypertension, which Dr. Engelbach believes are due to disease of the glands of internal secretion, and how long such cases have been observed. Dr. Allen's observations with regard to the effect of salt-free diet are very interesting.

DR. WILLIAM ENGELBACH, St. Louis: Dr. Roussy referred to the relationship of the histopathologic changes of the suprarenal, the nervous system and other glands to the clinical syndrome of endocrine disorders. One must acknowledge that no such relationship has yet been established, owing, possibly, to difference of opinion among pathologists regarding the pathology of this disease. There exists a great deal of controversy among the French, who have contributed so much on the subject of internal secretions, that no positive deductions can be drawn from their work on the pathologic changes present in these diseases. Dr. Fishman's reference to arterial hypertension with epinephrin diseases does not correspond with my observations. In the great majority of cases there was a combination of glandular disorders, i. e., a pluriglandular syndrome. I can confirm Dr. Allen's statement that chlorid retention is responsible for a certain percentage of arterial hypertension but not for all high blood pressure cases. My position is much the same as his with relation to endocrine disorders being responsible for a small percentage of the cases of arterial hypertension; not, however, to the exclusion of many other well known causes. In the series of endocrine cases reported, we obtained good results with glandular therapy, without denying the patient a generous diet containing plenty of salt and allowing active exercise.

GOUT: A CLINICAL STUDY OF ONE HUNDRED AND SIXTEEN CASES *

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The analysis of the present series of cases was undertaken because of my conviction that few diseases that are capable of being easily and accurately diagnosed are so often overlooked, or rather misinterpreted, as gout. Among well trained men gout is still too often a curiosity, rather than a clinical entity to be encountered and recognized. With the desire of centering the attention on this fact, the present study was undertaken.

Our series consists of 116 cases, which includes the material of the Cook County Hospital for approximately six years. At the very outset it may be remarked that a perusal of the histories leaves no doubt that the diagnosis of gout was made only when the clinical picture was such as practically to compel that diagnosis. I am well aware that in some quarters the diagnosis of this disease is made very lightly, notably at some health resorts; but the reverse is the case in this series. All were clear-cut cases about which, once the diagnosis had been thought of, there could be but little difference of opinion among experienced clinicians. My own belief is that a very considerable number of cases in the hospital go begging for a diagnosis. This is particularly true when patients are sent by mistake to the surgical wards. I have carefully checked the diagnoses as made at the examining room when the patients were admitted to the hospital. In general these diagnoses are exceedingly good, and it is remarkable at times with what

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acumen the house physicians detect really difficult cases; yet of our 116 patients, only twenty-nine were admitted as having gout or even suspected gout, despite the fact that sixty-five of them had the diagnosis written on their ears in unmistakable characters.

The conclusion is to my mind inevitable: Our younger clinicians are not on the lookout for gout, and as a result many cases are escaping us. Nor is it only the mistake of the inexperienced, for I can recall one patient who returned to the hospital on five different occasions at intervals of perhaps a year, before the correct and really very obvious diagnosis was made. Another patient was operated on in a surgical ward for an "infected hand" and the finger amputated, and the mistake never discovered until his next visit to the hospital a long time afterward. Still another patient left the hospital rather than be operated on for a "bunion," which a later stay in a medical ward showed to be an ordinary gouty toe. Indeed, this mistake was repeatedly made. Still a third patient had a knee opened and scraped, and several years later a finger operated on, with the diagnosis of infectious arthritis.

Our series labors under one disadvantage in that our patients came from the poorer classes who seek admission to a public hospital. It can, therefore, give no information as to the relative frequency of gout in the poor and in the well-to-do classes, since ours were largely cases of the so-called "proletarian gout."

It is rather remarkable that only five of 116 entered the hospital in their first attack, the great majority of our patients having been admitted many years afterward. This is quite in line with what is seen in our hospital in other similar diseases, the patients rarely seeking relief until the disease has been of considerable duration. As the early attacks of gout generally last only a short time, followed by a long period of well-being, the patient puts off seeking hospital aid. Over and over again we find that on asking the patient, who on admission has six or eight joints involved, whether he has ever had anything like this before, we receive a negative answer. A direct question elicits the fact that he had a painful swelling in the great toe five years before, which he has not in any way connected with his present trouble. Further questioning elicits the fact that he has had repeated attacks of so-called "rheumatism." It is surprising how rarely the patient recognizes the identity of the toe infection with the subsequent enlargement of the larger joints.

RESULTS OF OBSERVATIONS

Incidence.—Fletcher gives the incidence of gout for Johns Hopkins as 0.29, and states that this is just two-thirds that of St. Bartholomew's in London, which would be 0.435. In our hospital the ratio of admissions from gout to the total admissions to the medical service is 0.399, which approximates very nearly that of the London hospital.

Etiology.—The influence of sex is by far the most striking fact observed in that only one case occurred in a woman, an incidence of less than 1 per cent. The influence of age is best seen by arranging the cases in decades, it being understood, of course, that this refers to the age at first attack. From 0 to 10, no cases; from 10 to 20, no cases; from 20 to 30, 15 per cent.; from 30 to 40, 37 per cent.; from 40 to 50, 29 per cent.; from 50 to 60, 18 per cent.; from 60 to 70, 1 per cent. The average age at time of first attack was 38 years. The interesting fact elicited is that 15 per cent. of our patients developed their first attack before their thir-

tieth year. This is rather opposed to the idea that gout is exceedingly rare before 30 or 35.

Nativity.—America leads with 47 per cent.; then come Ireland with 17 per cent.; Germany, 13 per cent.; Scandinavia, 7 per cent.; Austria-Hungary, 6 per cent.; Italy, Russia, France and Canada, each 2 per cent., and Belgium and England, each 1 per cent. In the population of a hospital, the cosmopolitan character of which is surpassed by few, it is rather noteworthy that not a single case appeared in a Pole, despite a very large number of Polish patients. The influence of race is shown in the fact that all of our patients, except two, were white.

Seasonal Influence.—This is quite pronounced. Of 126 attacks occurring in our 116 cases, we find the incidence as follows: January, 9; February, 6; March, 14; April, 20; May, 16; June, 11; July, 9; August, 3; September, 5; October, 8; November, 12; December, 13. Grouping these by seasons, we find that the spring months easily lead with fifty cases (40 per cent.); the winter months next with twenty-eight (22 per cent.); the fall next with twenty-five (20 per cent.), and the summer last with twenty-three cases (18 per cent.). It is exceedingly difficult to form an accurate idea in regard to the reasons for this predominance of the cases in the spring months. In some years it is much more striking than in others. I have not been able to trace any relationship between weather conditions and the frequency of attacks. A month of atrocious weather will go by without a case, followed by a week of beautiful balmy weather which may bring in four or five cases. There is, moreover, no uniformity in regard to an individual case. One patient had his attacks invariably in November, another invariably in autumn and winter, while another patient had seven different attacks in seven different months. Several patients noted that their attacks were ushered in by cold, damp weather, particularly if they got wet. In one patient the first attack was brought on by prolonged wading while on a fishing trip.

Heredity.—In our series only twelve gave any history of joint conditions in the family, and in several of these the condition was probably not gout. While it is undoubtedly true that patients in a charity hospital are less likely to have accurate information in regard to this point, especially if they are foreigners, than would private patients, it is my belief that these figures are substantially correct. In all the cases in which I have questioned the patient on this point, heredity was an insignificant factor.

Occupation.—The occupations were analyzed particularly with reference to the influence of lead poisoning. In only eleven instances (9.4 per cent.) was the occupation such that the patient had to deal more or less with lead. In none of the cases did lead seem to have been an actually demonstrable etiologic factor; that is to say, in none of them was there an outspoken plumbism present, as evidenced by colic, lead line on the gums, etc. The great majority of the occupations were those requiring hard manual labor.

Alcohol.—On the other hand, the influence of alcohol was very striking. Only four patients stated that they drank no alcohol or in negligible quantities. In nine cases the patient consumed a small amount of alcohol daily; forty-one others declared themselves to be moderate drinkers, while the remainder were heavy drinkers, some to great excess. No difference could be noted in those who consumed only beer and those who

drank whisky by itself or in addition to beer. The latter condition of affairs was the common one.

Trauma.—The influence of trauma has been much discussed, but in our series we were not able to determine that it was of influence in even a single case. I myself have seen several cases in private practice in which the patient stated that the attack was occasionally ushered in by stubbing the toe or by stepping down from a wagon or something of this sort. A closer analysis of these statements leads me to believe that the patient has confused cause and effect. By this I mean that in most instances the patient's attention is drawn to his toe because it is already inflamed, rather than the reverse.

Syphilis.—The incidence of syphilis is not so frequent as might have been expected among patients of this character, as it occurred in slightly less than 15 per cent. of the ninety-one cases in which it was specifically mentioned. A comparison of the ages at which they had the initial lesion with the age at the first attack of gout shows that in 4 per cent. the gout antedated the syphilis, leaving 11 per cent. of cases in which syphilis might conceivably have been an etiologic factor. The average duration of the syphilis at the time of the first attack of gout was sixteen years. In only one of these cases was there found any clinical evidence of the existence of syphilis, such as aortitis, tabes or skin rashes.

Overeating.—It is worthy of note that in a class of patients in whom want and privation might be reasonably supposed to play an important rôle, we find no evidences of this in our series. In 101 instances in which the condition is specifically noted, we find ninety-two patients noted as well nourished, and in most instances well built. Eight were fairly well nourished and only one poorly nourished. These figures are all the more striking in view of the statement made in many of the histories that the patient had lost considerable weight just before entrance to the hospital. We are to interpret these findings, therefore, as showing very decisively that the big, well-developed, portly individual is the one who develops gout, and this, too, in a population which is normally none too well nourished. The fact must not be lost sight of that the influence of alcohol may here be of moment, in that when we read that a man has been accustomed to drink a quart of whisky or twenty or thirty glasses of beer daily, the food value contained in these drinks is very considerable.

Nephritis.—The theoretical importance of nephritis in connection with gout is of course very great, and all the more so in view of the importance of recognizing a renal gout. Of our 116 cases, fifty-two (45 per cent.) showed albuminuria. In only seven instances was a nephritis thought to be of sufficient importance to make it part of the diagnosis, and in no instance was it ever recorded as a primary diagnosis, nor had any of the patients been in the hospital previously for a nephritis. In twenty-two instances the coexistence of albuminuria with a blood pressure definitely, but not greatly, above the normal for the patient's age made the beginning of a contracted kidney at least possible, perhaps probable. It would seem clear from our figures that in spite of the many cases of albuminuria there were relatively few cases of true nephritis.

Clinical History.—First Attack: In five instances the patient entered the hospital with his first attack of the disease. In only one were there any prodromal symp-

toms, these consisting of chilly sensations and cough. The onset in all was acute, with intense pain in the affected joint, which was in the great toe in three cases and the instep in two. The pain is described in all as intense, and in one so great that the patient "rolled around in agony." The joints were moderately swollen in all of them, and red and hot. The fever is noteworthy in that the average was only 100.3 F. One of these patients is in the hospital at the time of writing, and it is remarkable how much inflammatory change exists in the toe and how intense is the suffering as compared with the trifling rise in temperature. One patient had been ill for four weeks before admission, and in addition to this spent twenty days in the hospital, which is the best evidence of the severity of the attack. The remaining four patients averaged three days' sickness before entering the hospital, and remained in the hospital on an average of two weeks. One of these patients had outspoken nephritic symptoms with beginning broken compensation with this, his first attack of gout, and this case we have reckoned as our only case of probably true renal gout. In only one of these first attacks were any other joints than those of the foot involved. In this particular patient both knees were attacked. The remarkable feature of these first attacks is their uniformity, each case being almost a replica of the others.

Subsequent Attacks: The same uniformity exists in those patients who came in for second or subsequent attacks. These patients, 111 in all, form the entire series, with the exception of the five just discussed.

As there is generally a lapse of some years between the first and subsequent attacks, it was not always possible to determine with certainty in what joint the disease began. As a matter of fact, the average time that had elapsed between the first attack and the entrance of the patient into the hospital was ten years, since the average age at entrance was 48 years, and that of the onset of the disease 38 years. In 88 per cent. of our cases in which the joint first affected could be definitely determined, this was in the great toe, and it is noteworthy that the right toe was involved a little more than four times as frequently as the left. The small toes were involved by themselves once, the ankle and instep five times, the left thumb once, and the left knee once. It is equally striking that in those cases in which the disease began in some other joint than the great toe, it showed a strong tendency to attack that member later on. In our series this was the case to such an extent that 95 per cent. of our patients had the big toe involved sooner or later, leaving only 5 per cent. that had never had the big toe involved.

The great majority of the patients developed the attacks at night and with great suddenness. A few noticed the pain and swelling coming on in the daytime, and we note that when this is the case it comes on during the day in subsequent attacks.

Four cases were definitely polyarticular in their first attack. Because of the difficulty in the diagnosis of these cases, I shall give them a little more in detail. In the first case, both ankles, both big toes, the left knee and the index finger of the left hand were simultaneously involved; in the second, the hands and feet were affected; the third was unfortunate enough to have the right foot and instep, the right knee, the right hand, the left shoulder and the left foot simultaneously involved; the fourth showed swelling, redness and pain of the right ankle, right knee, left knee and the little and middle fingers of the right hand, and the middle

finger on the left hand. In all of these, tophi were subsequently found in the ears, and in two of them, sodium biurate crystals in the joint fluid.

These cases which are polyarticular from the very beginning should be sharply differentiated from the ordinary case, which begins in the toe and perhaps remains limited to the toe, or to the toe and instep for several attacks, and then, as these become more numerous, the number of joints involved becomes greater, and this to such an extent that 106 of the 116 cases became definitely polyarticular in the further course of the disease. The hospital physician who, for the most part, sees the case only after many attacks, is thus confronted with a picture of six or eight joints simultaneously involved. This fact probably accounts for the many times the disease is diagnosed as acute articular rheumatism. It is remarkable how little elevation of temperature is usually present, the average maximum of our series being 100.3. This we regard as of the highest diagnostic significance, since there are few clinical pictures in which a half dozen joints are greatly swollen and reddened which exhibit so little fever.

As compared with the descriptions given by most authors, the majority of our cases seem of unusual severity. The average length of attacks was twenty-nine days, some covering several months.

Tophi were present in sixty-six instances (56 per cent.). They were present in the ears sixty-five times, and in only one case were tophi found elsewhere without the ears being simultaneously affected. This case was in the great toe, producing a bunion-like deformity. In fourteen instances there were tophi in the ears and in other portions of the body as well. Such other locations were the fingers; toes, knuckles, thumb, elbows and the thyroid cartilage. Bursae were found four separate times, three times over the olecranon and once over the acromion.

The blood findings in our cases were quite uniform. A moderate leukocytosis occurred in most of the cases. The highest count that we have recorded is 19,800; the average count is 10,500. The average differential count was: polymorphonuclear neutrophils, 74 per cent.; lymphocytes, 14 per cent.; large mononuclears and transitionals, 11 per cent.; eosinophils, 1 per cent. The blood pressure, as would be expected from what has been said in regard to nephritis, was somewhat higher than normal, and averaged 147 systolic.

One frequently sees the statement that after an attack of gout the patient generally feels better than before. While this may be true in certain cases, we could not determine that it was true in any considerable number of our series.

The Roentgen Findings.—In forty-two of our cases, careful roentgen-ray studies were made of the joints involved. Fourteen of these cases were reported by the roentgenologist as either showing definite gouty changes or else changes that were consistent with gout. All of the other twenty-eight cases were returned with the statement that the joint changes indicated hypertrophic osteoarthritis, or else showed arthritic changes of an indefinite character. Of the fourteen cases recognized by the roentgen ray as gout, thirteen showed tophi in the ears, and the fourteenth patient had a gout of fifteen years' standing. Of the twenty-eight cases in which the roentgen findings were not characteristic of gout, twenty-one showed tophi in the ears. Now it is very evident that all of these cases were far

advanced, and the conclusion, therefore, seems inevitable that even in the most skilled hands, the roentgen ray is of very little service from a diagnostic standpoint. Long before the roentgen-ray findings are sufficiently definite to warrant a conclusion, the diagnosis can be made by the usual clinical means. Conversely, the roentgen ray in nearly two thirds of all the cases submitted to it not only failed to assist in the diagnosis, but tended, if anything, to lead one to arrive at wrong conclusions. We may not, therefore, give the roentgen findings a very high place in the diagnosis of gout, since the changes are not sufficiently characteristic to enable the differentiation to be made between it and kindred joint affections.

Association with Other Diseases.—The two classical diseases of metabolism associated with gout are, of course, obesity and diabetes. We have already noted under the etiology that the great majority of our cases were well nourished. In addition to this we find eleven instances in which the patient was spoken of as directly obese, and in a few instances the obesity attained considerable proportions. This was particularly true among the heavy beer drinkers. On the other hand, not a single case in all the series showed sugar in the urine at any time.

The abarticular forms of gout were almost nil in this series. One patient died of angina pectoris while in the hospital. A severe sore throat preceded the onset in five cases, and this further increased the resemblance to acute rheumatic fever.

CONCLUSIONS

The frequency of gout under our conditions is much greater than is commonly thought. Errors in diagnosis are relatively numerous, owing, not to the inherent difficulty in the recognition of the disease, but to the erroneous assumption of its great rarity in this country.

25 East Washington Street.

ABSTRACT OF DISCUSSION

DR. WALTER L. BIERRING, Des Moines, Iowa: Analyzing the report given in this excellent paper, one wonders that there are not local conditions or other influences which may explain this apparent increase in the number of cases. The cases are attributed largely to the incidence of good nutrition, or apparently good nutrition. Yet in many communities in which that obtains there is no gout, so that there must be something in the mode of life in a large city, of the class of patients that come to a large charity hospital to account for the greater frequency of these cases in the hospitals of the larger cities. With the clinical symptoms usually so well marked it is rather strange that the condition should be overlooked. An explanation may be found in the fact that we have been greatly interested in focal infections as causes of arthritis and have overlooked entirely, in a way, those cases of arthritis which were not due to infection. Furthermore, it occurs in single joints in many instances, and recurs frequently in the same joint; therefore, these patients are referred to the surgical service and the surgeon, not being on the lookout for tophi, overlooks the condition. Little evidence of infection, low fever and the involvement usually of single points, ought to make the diagnosis comparatively easy. The roentgen ray is practically a negative factor in the recognition of gout. Whenever there are distinct joint changes, the case most likely is one of arthritis deformans. We must rely on the appearance of tophi, and unless tophi are present we will always be in some doubt as to the existence of gout.

SIR HUMPHRY ROLLESTON, London, England: In London there seems to be no doubt that gout is commoner in people

who are brought in contact with lead than in other people. In other industrial centers where lead poisoning is common, such as Newcastle on Tyne, gout is rare. The importance of lead gout was insisted on by the late Sir A. B. Garrod. It is generally believed that the connection between lead and gout depends to a certain extent on whether the patient takes beer or not. Trauma may act in two ways, by predisposing to the attack in the big toe joint, and also by once determining an attack. Thus, after an undoubted injury, such as the falling of a box on the foot, a gouty patient may in a day or two have an acute attack of gout in that joint, and other joints may suffer in that attack. In connection with the diagnosis between arthritis deformans and gout, the two may be combined, as was shown at the Cambridge experimental hospital. Lastly, to refer to a rather dangerous subject, that of abarticular gout: There is a distinct tendency to regard almost any manifestation occurring in a gouty person as gout; for example, gouty bronchitis, the gout going to the stomach, and even cerebral gout; and the diagnosis of gout and goutiness may easily be much abused. I would suggest, however, that the question of abarticular gout should be taken seriously into consideration. Gout is recognized as a disturbance of protein metabolism, and the manifestations of anaphylaxis are now well known; gouty patients are extremely susceptible to various articles of diet; in other words, a gouty person may present symptoms analogous to those of anaphylaxis. Therefore, gouty manifestations, although they are entirely different from frank articular gout, may be due to the same change of metabolism as occurs in gout, and from a practical point of view may react to the treatment proper for gout. Not very long ago I saw a man with high blood pressure and the subject of gout, in an attack of what appeared to be undoubted hemiplegia due to cerebral hemorrhage. For some hours he was extremely ill. Then an acute swelling of the big toe joint came on, and the symptoms rapidly improved. I agree with Dr. Williamson as to the association of pharyngitis with gout; a gouty person may very easily, as a result of some indiscretion, get an attack of pharyngitis, or sore throat, which is relieved by antigout remedies.

DR. ALEXANDER LAMBERT, New York: Gout is not of infrequent occurrence in the eastern area of the United States. I have noticed that these patients have an English or Irish ancestry more often than not. A remarkable fact brought out by Dr. Rolleston is the peculiar idiosyncrasies of gouty people, appearing in different members in the same families. I have known a man who could not touch white wines, while his brother could not touch red, and still another member of the family could not touch any alcohol. In other members of the family an attack was brought on by coffee. Food idiosyncrasy has much to do with the production of gout. A peculiarity of a gouty joint is that the point of maximum intensity of pain is on the side of the joint, not on the top, and less frequently on the bottom. The point of greatest tenderness is almost invariably on the side. Chronic gout is a disturbance of protein metabolism. One of the best remedies is iodine or the iodids, which stimulate the thyroid. The dry skin, the chipping nails and the dry hair are manifestations of hypothyroidism. I believe the thyroid has more to do with gout than any other gland. The patients whom I have treated on the basis of thyroid deficiency have done better than those whom I treated on any other basis.

DR. CHARLES SPENCER WILLIAMSON, Chicago: Any arthritis which involves the great toe, either as the first joint or simultaneously with some other joint, should be regarded as highly suspicious of gout. Garrod's observation was not only thoroughly sound, but, if anything, fell short of the truth. An important diagnostic feature is the relatively slight fever, at times none at all, taken in connection with the great acuity of the local symptoms. This is not a new point, of course, but I do not think that it has found its way into the general clinical consciousness of the medical profession. When you are called to a patient, especially if a middle aged man, and find him with both knees, an elbow or two, and at the same time the great toe greatly swollen, with a temperature of, perhaps, 99 F., do not forget to think of gout before any-

thing else. By the time the case has reached this stage tophi are generally present in the ears, but they must be looked for with real care, as the diagnosis may depend on a little nodule in the ear scarcely as large as a small pinhead. I was very glad to hear Dr. Lambert bring out the point about the pain on the side of the toe. Less than ten days ago I called the attention of one of my interns to that point, but as far as I know it is new, and I was not sufficiently assured of the accuracy of my observation to be sure that it was of diagnostic importance. I have noticed half a dozen times that the pain is almost entirely on the side. I did not quite have the courage to bring that out. Let us rid ourselves of the idea that gout is a disease of extraordinary rarity in this country, since the incidence in general hospital practice is not much less than in a London hospital of the same general type.

A CLINICAL STUDY OF THE END-RESULTS OF SOME FOCAL INFECTIONS *

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In a casual survey of the literature on focal infections, one is impressed with the fact that only recently has the subject been studied from the standpoint of its bearing on systemic disease.

Until the last decade there were few notable contributions. In 1819, Rush reported the cure of a case of rheumatism by the extraction of a tooth. William Hunter, in 1899, recorded his studies of what he termed "oral sepsis." Later, the dentists Price, Broomell and Chayes in their articles cautioned against careless dentistry and neglected oral sepsis, suggesting the probability of systemic disease ensuing. Goadby's article in 1912 claimed the direct relationship of some joint conditions to focal infection.

It remained, however, for Frank Billings and his co-workers, especially Rosenow and Davis, to bring the subject prominently before the medical profession. Too much cannot be said in praise of their work, and the credit for the present knowledge of the subject must be given to them. Since the first paper by Billings appeared in 1912, tremendous enthusiasm has been manifested in this subject, many articles and one monograph appearing within the short space of eight years.

Despite this splendid work, there exists in many sources some doubt as to the part focal infections play in the production of diseases, and many are questioning whether or not any real relationship exists. A warning is sounded lest we, in our zealous efforts to eradicate suspected foci, sacrifice useful organs, such as the teeth and tonsils. I realize that in many instances the pendulum has swung too far, and that some practitioners are likely to remove sound teeth or tonsils without justification. If the cases are carefully studied from every angle, and all other possible etiologic factors eliminated, the prompt relief obtained by radical measures should convince the most skeptical that it is not due to accident, coincidence, or to any effect on the mind.

In this confused state of evidence, it may be of interest to hear the clinical experience of one observer, and note the end-results obtained in approximately 100 cases selected from a private and consultation practice, during a period of two years.

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

The relation of the focus of infection to the symptoms in question has depended on: (1) the absence of any other demonstrable cause for the symptom; (2) the failure to cure the symptom by all other methods of treatment, and (3) prompt and continued relief, with no return of the symptom, on the cure or eradication of the focus of infection.

In this study, conclusions have been arrived at largely through the cooperation of a group of nose, throat and dental specialists. Great reliance has been placed on roentgenograms of the diseased structures.

SOURCES OF INFECTION

The teeth have been the most common source of infection, and all varieties of dental conditions, from pyorrhea to unerupted twenty-one year molars, have been encountered. The most common lesions were either apical abscesses or granulomas at one or more roots of devitalized teeth. The diagnosis was confirmed by plates of the whole upper and lower jaws, including all devitalized teeth. Not only should infected teeth be removed, but the cavities left should be thoroughly curetted.

The tonsils were next in importance as a seat of infection. The small fibrous, or submerged, tonsils were quite as frequently involved as those visibly infected and greatly hypertrophied. Complete enucleation with the capsule was usually necessary for permanent relief.

The sinuses were least in importance in this series. The maxillary sinus was most frequently implicated, because of its close proximity to the throat and nose. Transillumination and roentgenograms were employed to reveal existing trouble.

There has been no experience with foci of infection in other parts of the body. Billings, however, reports them in almost every conceivable location.

SYMPTOMS FOR WHICH RELIEF WAS SOUGHT

Pain occurring in 42 per cent. of the cases was the symptom for which relief was most frequently sought, the location usually being in the muscles of the neck, back, chest or limbs. In a few cases it occurred along the course of some nerve, frequently branches of the brachial plexus or the sciatic nerve. Its character varied from ordinary discomfort to intense agony, requiring morphin for alleviation. The painful area was not affected by changes in temperature, nor was it often associated with tenderness. It was not accompanied by fatigue, or other neurotic symptoms one might expect in neurasthenia. Conditions about the teeth most frequently produced these symptoms, though some cases were due to diseased tonsils or sinuses.

CASE 1.—E. A. S., a white man, aged 50, had constant pains in the right back, side and hypochondriac region, at times severe enough to require morphin. A diagnosis of gallstones had been made, and operation advised. A physical examination of the chest and abdomen was negative. The gastric contents, urine and blood were normal. The Wassermann reaction of the blood serum was negative. Only temporary relief was obtained by the usual methods of treatment. Examination of the teeth disclosed two apical abscesses. Removal of the teeth afforded immediate relief, with no recurrence of pain.

CASE 2.—H. C. N., a white man, aged 35, had pain in both shoulders, causing discomfort, rather than acute suffering. It was not especially related to the joints or nerves, but affected the muscles about both shoulders. There was no tenderness. It was not affected by changes in weather. Physical examina-

tion of the heart, lungs and abdomen was negative. The urine and blood were normal. The Wassermann reaction of the blood serum was negative. Examination of the throat revealed infected tonsils. The patient was always relieved for weeks at a time, by massage and squeezing out of crypts by a throat specialist. Ordinary methods afforded no relief. Tonsillectomy was finally performed, giving immediate relief, with no recurrence of pain. The patient made a gain of 12 pounds.

Fever, occurring in 18 per cent. of the cases, was second in importance as a symptom. The fever, seldom over 101 F., was not often accompanied by chills, though in a few cases night sweats occurred. These cases were usually ambulatory, resembling, and most frequently confused with, the fever of incipient tuberculosis. The foci were about equally distributed between the teeth and the tonsils.

CASE 3.—H. R. W., a white man, aged 44, had had fever for four weeks, with some malaise, an occasional night sweat and a slight loss of weight. His highest temperature was 99.8 or 100, usually in the afternoon. The patient was not ill enough to go to bed. He had been at his office almost every day. Physical examination of heart, lungs and abdomen was negative. The differential blood count was normal. There were no plasmodia. On three occasions the Widal test was negative with typhoid and paratyphoid bacilli. The Wassermann reaction of the blood serum was negative. There was slight tenderness about the first lower molar on the right side, which was devitalized and crowned a few years ago. A roentgenogram revealed an apical abscess. Removal of the tooth was followed by prompt and permanent subsidence of temperature, with a gain in weight to normal.

Chronic headache as a result of focal infection has long been suspected by throat and oral surgeons. Often in their experience the removal of infected tonsils has relieved the patient of headache of long standing. In this series, chronic headache has occurred in 4 per cent. of the cases, each depending on tonsillar infection. In every case a prompt and permanent cure has followed tonsillectomy.

CASE 4.—Mrs. W. V., aged 28, white, complained of headache, which had occurred rather frequently for the last two years. It did not occur at any regular time, nor was it related to the menstrual period. The patient had had no previous illness. She had had many examinations, with negative findings and no benefit. The last physician who made an examination suggested glasses, but they caused no improvement. Physical examination of heart, lungs, abdomen and pelvis was negative. Neurologic examination was also negative. The urine, blood and gastric contents were normal. The Wassermann reaction of the blood serum was negative. An oral surgeon reported that all sinuses were negative, but the tonsils were hypertrophied, showing evidences of infection in the crypts. Tonsillectomy gave prompt relief.

General debility with loss of weight and strength, resulting from focal infection, has occurred in about 10 per cent. of the cases.

This syndrome, as a rule, occurred in middle-aged adults, without any other apparent basis, and in most instances was accompanied by obvious diseases of the teeth. No cases have occurred with infection elsewhere. In many cases it was necessary to remove all the teeth in order to get rid of the severe oral infection, all ordinary methods of treatment having utterly failed. Removal of the teeth and treatment of the gums, when promptly and effectively done, was followed by marked improvement in the general condition, with a gain in weight and strength.

Severe secondary anemia occurred in 4 per cent. of the cases. In no case, despite the ordinary methods of treatment, such as rest, feeding and the continued use

of iron and arsenic, was there any perceptible improvement until the removal of the focus of infection. The cases were equally distributed between the tonsils and the teeth. In no instance did the blood present the morphologic appearance of pernicious anemia. There was usually a moderate reduction of the hemoglobin and in the number of erythrocytes, with normal differential and leukocyte counts.

CASE 5.—Mrs. N. O. E., aged 26, white, complained of weakness and indigestion, beginning more than a year before. Physical examination of the heart, lungs, abdomen and pelvis was negative. The Wassermann reaction of the blood serum was negative. The urine was negative. The gastric contents after an Ewald test meal showed free hydrochloric acid 5, total acidity 16. Blood examination revealed: leukocytes, 7,300; erythrocytes, 3,800,500; hemoglobin, 65 per cent. Differential count revealed: polymorphonuclears, 63 per cent.; transitionals, 1; lymphocytes, 29; large mononuclears, 5; eosinophils, 2. Red cells were slightly irregular in size. No normoblasts were seen. There were no plasmodia. Examination of the throat by an oral surgeon showed the tonsils to be hypertrophied and infected. Tonsillectomy resulted in an almost immediate gain of 12 pounds. Four months later the blood was normal.

The relationship of focal infections to albuminuria and nephritis has been proved and referred to by several observers, prominent among whom are Ophuls, Klotz, LeCount and Jackson. In this series there were six cases apparently dependent on this cause. In a majority the focus of infection was in the tonsils, though in two, it was about the teeth. In every instance, after tonsillectomy or removal of the oral infection, there was a progressive improvement, with a disappearance of albumin and casts from the urine.

CASE 6.—Mrs. W. L. S., aged 32, white, complained of itching, loss of weight, and pain in the back and shoulders. Physical examination of the heart, lungs and abdomen was negative. The blood was negative. The systolic blood pressure was 110, the diastolic, 80. The urine showed a moderate trace of albumin, with numerous hyaline and granular casts. After a Mosenthal test meal for renal function, the urine showed a total output of 1,240 c.c., a normal variation in the specific gravity of day specimens. The specific gravity was inversely proportional to the volume of the specimens. There was diuresis after the first two meals; after the third meal, it was very slight. The night urine was small in volume, with high specific gravity. There was adequate salt elimination, and adequate nitrogen concentration in the night specimen. There was moderate fluid retention, and slight nitrogen retention. The salt concentration was low. The phenolsulphonephthalein output at the end of two hours was 30. The tonsils were small and fibrous, showing pus in the crypts. Treatment by dieting and rest for some months resulted in no improvement. Tonsillectomy eight months ago gave immediate relief from pain, with a gain of 20 pounds. The urine three weeks ago was absolutely normal.

The association of achylia gastrica with focal infections has been referred to by several observers, cases being reported by Beck and others. Every gastroenterologist has witnessed the improvement in many cases of this character, following the cure of oral sepsis. In this series there were six cases, all proved by the fractional method of analysis to be true achylas. In each there seemed to be considerable infection in the mouth, but in no other location. In some of the cases the extent of the infection necessitated the extraction of all the teeth. Without exception, improvement followed the cure of the oral sepsis. Free hydrochloric acid reappeared to some extent in every case, and in a few it finally reached the normal level.

CASE 7.—Mrs. E. T., aged 38, white, complained of loss of weight and strength, discomfort in the abdomen, gas and constipation. Physical examination of the heart, lungs and abdomen was negative. The blood and urine were negative. The Wassermann reaction of the blood serum was negative. The gastric contents by fractional analysis showed a total acidity of 12 at the end of one and one-half hours. There was no free hydrochloric acid throughout the test, which was carried on for two and one-half hours. There was no occult blood or lactic acid. Roentgenographic examination of the stomach, after a barium meal, was negative, except for hypermotility, the stomach being empty at the end of three and one-half hours. The patient had previously had several attacks of tonsillitis. The tonsils were recognized to be hypertrophied and infected. Under dieting and free hydrochloric acid, along with a modified rest cure, there was only slight improvement. Tonsillectomy was performed eight months ago, with immediate improvement in the patient's general condition, with a gain in weight and strength, and improvement in stomach symptoms. The last analysis of gastric contents, one month ago, showed free hydrochloric acid 12, and a total acidity of 20.

Vascular hypertension of moderate degree, indicated by a systolic pressure of from 150 to 170, occurred in 6 per cent. of the patients, all middle-aged persons, principally women. In these cases the condition was apparently not due to nephritis, because of the negative urine findings. There may, however, have been some chance of error, if we consider as a clinical entity the hypertension of the climacteric so well described by Reisman, and probably due to some endocrine dysfunction. In every case the hypertension seemed to resist all ordinary therapeutic measures, such as dieting, rest and vasodilators. Without exception, the infection was about the teeth, and on its cure there was a prompt reduction in the blood pressure, though it rarely reached normal.

While the report of the foregoing cases does not comprise all in which there has been a direct relationship or dependence on focal infection, others have occurred with rarity, and time forbids mentioning them.

Finally, a word must be said about joint conditions. No acute joint cases are tabulated in this series. There have been perhaps eight cases of chronic arthritis, usually of the type of arthritis deformans, with definite deformity and disability of many joints. An unsuccessful attempt was made to benefit these patients by curing foci of infection existing in the teeth, tonsils or sinuses.

CONCLUSION

While this report is necessarily brief, I hope it is sufficiently convincing to prove that often such conditions as pain, fever and headache are directly traceable to focal infections, and that the most effective measure for relief is complete eradication, or a cure.

Central Bank Building.

ABSTRACT OF DISCUSSION

DR. FRANK BILLINGS, Chicago: Focal infection as a cause of disease has come to stay. But, like every other principle in medicine, it has its limitations. Many of those who accept it have not thought of just what the term means. A focus of infection differs from a focal infection. A focus of infection may give rise to focal infection, or it may give rise to intoxication of the body. What is meant by infection? Infection means the invasion of the body by micro-organisms that have the power of reproduction in the host, of producing reactions within the tissues of the host, and the reaction producing abnormal phenomena, which we term clinical manifestations of disease. Focal infection means the invasion of the body

from a focus of pathogenic organisms, and these organisms have the power of reproduction or of multiplication within the host. Much of the fallacy and failure in the treatment or management of the patients who suffer from what may be proved to be focal infection is due to the fact that the surgeon or physician in charge removes a focus, which may be the right one, and then neglects any further management of his patient. And, if what I have just said is true, then the removal of the focus has not disturbed the organisms already in the tissues of the body. If you have removed the true focus, you have simply prevented the invasion of the tissues by additional organisms from the primary focus. Focal infection is usually an invasion by pathogenic agents of the tissues through the blood stream. They lodge in the tissues, they produce reactions, dependent on their character and on their virulence. They remain there if the defenses of the host are not sufficient to kill them or at least to drive them from the body. And unless, in the treatment of chronic infectious arthritis, for instance, that fact is borne in mind, the removal of the focus will usually not greatly benefit the patient, or at any rate not the majority of patients. Therefore, what is your duty? Our duty is to build up the resistance of the host against the invaders already there by all of the known means of support of the patient from the beginning of treatment. Can we use anything specific? The use of antigens in the form of dead bacteria, injected subcutaneously, in my experience, is not justified. I have used them all, controlling the work with all the knowledge we have, using the autogenous, the nonautogenous, the activated and the non-activated. The controls got along just as well as those that had the vaccines given them carefully. May one use some other specific? It is not uncommon now to read that a foreign protein antigen, injected intravenously, will restore the protective powers of the body, and drive out the pathogenic invaders. Apparently, many men have had success. But immunologists are not able to tell us much if anything of the *modus operandi*. It produces serious reactions, and we are using it in a haphazard way. The conscientious man is taking the health, and possibly the life, of the individual in his hands when he uses these substances. I do not say, do not use them, but I believe that we should approach that part of the treatment with judgment and discretion.

DR. JOSEPH H. PRATT, Boston: The subject of focal infections in its present day conception is very complex. There is much need of careful clinical study. Dr. Fontaine took a conservative position. A defect in most of the papers on this subject is that they give only the immediate results of removing foci of infection, but Dr. Fontaine has followed his cases for from one to two years, and the results are striking. I wish every physician in my section of the country could have heard the words just spoken by Dr. Billings, because the idea of focal infection, especially abscesses about the teeth, as a cause of chronic disease has spread like wildfire. At the present time many physicians, if they have an obscure case, simply advise the patient to go to a dentist and have the dead teeth removed. When this is done the patients are often turned adrift. Even living teeth may be extracted. The treatment in cases of psychoneuroses may consist simply in the extraction of teeth or of a tonsillectomy. Last summer I saw a woman with a mild neurasthenia, without a symptom of chronic infection, who was sent by her physician to an oral surgeon, who according to the patient's statement was the leading authority in the state. Fifteen teeth were extracted. I saw the roentgenograms later and only eight of the fourteen teeth were dead! Her symptoms became more marked after the teeth were removed. Many of the chronic cases that drift from physician to physician are patients suffering from psychoneuroses, and while it is proper, of course, to treat the teeth if they are in bad condition, it is a mistake to consider that in these cases the discovery and removal of infected teeth constitutes proper diagnosis and treatment. If an infection has become generalized, removal of the local focus will not result in cure. In a rare case of recurrent thrombophlebitis under my observation for several years there was chronic antral suppuration. Treatment of the empyema was followed by improvement for

about one year; then new thrombi formed. Careful examination has revealed no focus of infection outside of the inflamed veins, but every few months he has an attack of phlebitis with fever. Support from pathologists and immunologists is needed in solving the clinical problems connected with focal infection.

DR. FRANK B. WYNN, Indianapolis: In the olden days men were very prone in obscure cases to hide behind the liver; and a little later they found recourse in malaria to cover their sins of ignorance; and I wish to join with Dr. Pratt in emphasizing still further the point he made, namely, that the sin which we are very apt to commit at this time in regard to this matter of focal infection is that in cases with obscure symptoms we will hastily put the blame on the tonsils or on the teeth, without due clinical investigation of that case. It behooves us not to be content with looking at the tonsils or the teeth, but to search the body for other foci of infection. One other point is there which I wish to make, namely, that, granting the importance of a focus of infection, from which there is fed into the system the infectious material that gives rise in one case to rheumatic symptoms, in another to neuritis or to a neurosis, let us beware of the manner in which we proceed to correct that focus of infection. A patient had pain in the back, with tenderness, which was designated by her physician as lumbago. She unquestionably had bad teeth. On the advice of her physician they were extracted. In twenty-four hours following the removal of her teeth, she had severe pain throughout the whole extent of her spinal column, which rapidly developed into a typical spondylitis deformans. Undoubtedly, many of you have discovered bad tonsils, associated with the development of a chronic nephritis. You have removed the tonsils as the focus of infection, only to find that following the operation there has been an extreme aggravation of the symptoms, and in a few cases very disastrous results.

DR. W. S. THAYER, Baltimore: In dealing with many obscure conditions, looking for and properly treating a focus of infection, which may be a contributory cause of the trouble, we sometimes forget that our responsibility goes considerably beyond the point of finding a focus which may possibly be the seat from which the infection which has caused the trouble has come, and of considering its proper treatment. The attempt to treat these foci of infection properly has made common surgical operations which were not so common years ago; and it has brought into use certain specialties of surgical procedure which were not common years ago, surgical procedures of a very delicate character, which only the best trained man is capable of carrying out. I know many men whom I would be glad to have take out my appendix, if it were necessary. I know very few men who I would be willing to have take out an adherent tonsil or interfere with ethmoid disease. The proper treatment of ethmoid disease, and of gravely infected tonsils is often a serious matter. Those are very delicate procedures, which should only be done by very well trained surgeons. And there are relatively very few well trained surgeons in these special branches. It is our duty to consider very carefully to whom our patients are sent, and, furthermore, to follow them up afterward. The common treatment of the teeth in individuals whose trouble is supposed to depend on infection there is barbarous in the extreme. The reckless manner in which teeth are extracted today is a scandal to the medical profession. The very commonest infection in the mouth is probably gingivitis and pyorrhea alveolaris, which is not properly treated in the vast majority of cases. Very few dentists pay proper attention to pyorrhea alveolaris, and it is the duty of the physician to find one who does. I often do not know what to do when I have to refer a patient to some one for the treatment of such a condition. Dead teeth are opened and extracted on suspicion, simply because they are dead. Such a procedure is shameful. The extraction of a dead tooth, because it is dead, is unpardonable.

Often apical necroses are found in teeth, and those teeth are instantly extracted. In many instances that is an entirely wrong procedure. An apical necrosis does not at the moment often mean a very grave infection. Very often it is easy to

treat the condition without extracting the teeth. A sufficiently free opening, with cuřetting, and amputation of the root, done by a skilful man, will save many teeth which are today sacrificed recklessly. When we send a patient to a dentist to have his teeth extracted, it is not only necessary to see that he is properly cured, but it is unfortunately necessary very often to watch the patient to see that he himself treats the cavities properly. I know dentists of the highest reputation in their communities who extract a tooth, curet well the socket and then dismiss the patient; and I have on more than one occasion met such a patient several years later, and found that he had suppurating cavities, the necrosis still continuing, well closed in, simply because the cavity had not been properly treated.

DR. LEON L. SOLOMON, Louisville, Ky.: It were well for us, in searching for the primary focus of infection, to search the lower part of the gastro-intestinal tract, more particularly the lower part of the colon, the sigmoid and the rectum for a secondary, as well as for the primary focus. It has been my observation that the colon, the sigmoid and the rectum often contain an old focus of infection which is responsible for the means of ingress into the body of infecting organisms.

DR. CARLETON DEDERER, Bay City, Mich.: This subject is in the experimental stage. However, I want to place the weight of my influence on the side of the enthusiast rather

VIRULENCE OF DIPHTHERIA BACILLI FROM DIPHTHERIA PATIENTS AND FROM CARRIERS

THE RESULTS OF FIVE HUNDRED AND
FORTY-EIGHT TESTS *

AUGUSTUS B. WADSWORTH, M.D.

ALBANY, N. Y.

During the last four years we have found it necessary to test the virulence of cultures that have been obtained from convalescent and from contact carriers, and also those from a group of persons who have been classified as noncontact carriers. We have found these virulence tests helpful in distinguishing the nonvirulent from the virulent diphtheria bacilli, and thus have been able to authorize the release of patients when virulent diphtheria bacilli are no longer present in the secretions.

When the laboratory first undertook to make these tests, health officers and physicians were eager to send cultures in the hope of securing the release of their

TESTS OF VIRULENCE OF B. DIPHTHERIAE FROM CONVALESCENTS AND FROM CONTACT AND NONCONTACT CARRIERS

	Duration Less Than 3 Months			Duration More Than 3 Months			Duration Not Known			Total		
	No. Tests	No. Vir.	Per Cent. Vir.	No. Tests	No. Vir.	Per Cent. Vir.	No. Tests	No. Vir.	Per Cent. Vir.	No. Tests	No. Vir.	Per Cent. Vir.
Tests Made Prior to 1916:												
Convalescent carriers	159	144	90.0	2	2	100.0	...	..	....	161	146	90.6
Contact carriers	20	16	80.0	..	..	....	...	..	....	20	16	80.0
Noncontact carriers*	32	3	10.0	1	0	....	...	..	....	33	3	8.3
Total number of tests prior to 1916.....	211	163	77.2	3	2	....	...	..	....	214	165	77.1
Tests Made from January, 1916, to April, 1919:												
Convalescent carriers	147	136	92.5	28	25	89.2	44	30	68.1	219	191	87.2
Contact carriers.....	35	28	80.0	9	8	88.8	51	33	64.7	95	69	72.6
Noncontact carriers†	12	10	83.3	2	1	50.0	6	4	66.6	20	15	75.0
Total number of tests, 1916-1919.....	194	174	89.6	39	34	87.1	101	67	66.3	334	275	82.0
Combined total	405	337	83.2	42	36	85.7	...	..	....	548	440	80.4

* These noncontact carriers were carefully classified as carriers when there was no diphtheria.

† These noncontact carriers could not be so accurately classified.

than on the side of the conservative. My method of treating surgical patients consists in making a general rigid physical examination first. In all cases in which a major operation, such as a cholecystectomy, is done, I always, if the patient consents, eliminate the minor foci in the teeth and in the tonsils, if they appear to show infection, before I remove the other foci of infection.

DR. BRYCE W. FONTAINE, Memphis, Tenn.: The diagnosis of focal infection is made reluctantly, not until every other means of arriving at the cause in these cases has been exhausted, and then only with the cooperation of other men, who are conservative and especially skilled in their several lines. These end-results have been carried over two years, and during this time there has not been a return in one of the cases reported.

Clinically Trained versus Laboratory Trained Observers.—Many valuable signs are only perceptible to the trained eye or the trained ear or the trained finger. Still more valuable signs are only revealed by the sensations experienced by the patient. To interpret these requires a training that can only be acquired by many years of patient observation, during which the mind is stored by the experiences of the past, by methods which are peculiar to medicine. These methods can never be acquired by a laboratory trained observer, and it is because of this that men trained in the laboratory fail as clinical investigators, however distinguished they may be as physiologists, chemists, or bacteriologists.—J. MacKenzie, *Brit. M. J.* 1:109 (Jan. 24) 1920.

patients or carriers from quarantine. In fact, they chose to send cultures to the laboratory for virulence tests rather than to undertake the strenuous task of getting the patients to rid themselves of the cultures by mouth-cleansing and other general measures of personal hygiene, all of which are either generally disregarded or are not very carefully carried out.

VALUE OF ROUTINE VIRULENCE TESTS

At first, the task of making these virulence tests was an arduous one. Nevertheless, tests were made during a period of two years with 250 strains of the diphtheria bacillus. To determine the value of these routine virulence tests, Dr. W. E. Youland, of the laboratory staff, tabulated the results. He found that 90 per cent. of the strains of *B. diphtheriae* that were isolated from cases of clinical diphtheria, from the day of onset to and including one year after onset, were virulent for guinea-pigs. Eighty per cent. of the strains isolated from a smaller series of healthy contact carriers who acquired the bacilli during epidemics were virulent,¹ while only 10 per cent. of the strains isolated from noncontact carriers were virulent. The noncontact

* Read before the New York State Medical Society, Syracuse, N. Y., May 8, 1919.

¹ From the Division of Laboratories and Research, New York State Department of Health.

1. Diphtheria Carriers, New York State Department of Health.

carriers of this series were persons in state institutions or schools where there were no cases of diphtheria, who, nevertheless, carried diphtheria bacilli in their secretions. Ninety per cent. of the cultures that were obtained from convalescent patients during the first three months after the onset of the disease and from contact carriers were virulent. It was thus possible to discontinue a large part of the work, namely, the examination of convalescent and contact carriers during the first three months after the onset of the disease.

But physicians and health officers, who are deeply concerned for the release of their patients, have very naturally been impatient at this delay. In order to avoid making any unnecessary hardship for these carriers, it has been customary to make examinations whenever the health officer thought there were special reasons why he should have such a test made and stated his reasons clearly. Thus a considerable number of virulence tests have been made since the previous tabulation, and it is thought that it might be of interest to record the results of these examinations.

The tabulation of this series includes 334 virulence tests that have been made from January, 1916, to April, 1919. The classification of noncontact carriers is nondescript and not as reliable as that in the previous study of noncontact carriers on account of the fact that it was impossible to get complete and reliable information from all the physicians who sent these cultures to the laboratory. The results of this tabulation are presented in the accompanying table. The results obtained in the tabulation of the first series are included for the purpose of comparison.

When the results obtained with cultures from convalescent carriers in whom the duration of infection is less than three months are examined, it is found that of 147 strains of *B. diphtheriae*, 136, or 92.5 per cent., are virulent. This agrees closely with the results obtained in the first series, in which 90 per cent. of the strains were virulent. In the same period, from healthy contact carriers, twenty-eight strains of diphtheria bacilli out of thirty-five strains tested, or 80 per cent., were virulent; 80 per cent. was also obtained for these contact carriers in the first series.

The percentage of virulent diphtheria bacilli from convalescent carriers of more than three months' duration, 89.2 per cent., agrees closely with 92.5 per cent., obtained in cases of less than three months' duration. The number of examinations made on contact carriers in this period, nine, is too small to be of any significance.

CONDITIONS AFFECTING STATISTICAL VALUE OF RESULTS

The number of cases, 101, in which the duration of the disease was not stated on the information blank renders the results of these examinations for virulence unavailable for statistical study. Similarly, the results obtained for noncontact carriers are of little value since the information describing the cases as noncontact was often unreliable.

In both series, 398 cultures from convalescent and contact carriers in which the duration of the infection is known were studied. Three hundred and fifty-seven, or 89.7 per cent., of these were virulent. When the total number of tests for virulence (548) are examined without attempt to classify the cases on which the tests were made, it is found that 440, or 80.4 per cent., are virulent.

CONCLUSION

It is evident that *B. diphtheriae* from persons who have had diphtheria or from those who through contact become "carriers" retains its virulence for several months. Changes in virulence or changes in species or strains of the diphtheria organisms take place so slowly in the throat that the three months' period required before making these virulence tests is, after all, a lenient ruling and a satisfactory one if, in special instances in which carriers are definitely known to be noncontact carriers, a virulence test is made without delay.

ABNORMAL LACTATION

A CAREFUL STUDY OF THE LITERATURE, WITH THE REPORT OF A CASE *

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Lactation, the coping stone of motherhood, is a function sometimes impossible, often intentionally or ignorantly neglected, and in many instances practiced to excess.

In women of high social standing, the last mentioned condition is practically unknown. Investigations show that among women of the poorer classes, and particularly among the tribes and races of ignorant and uncivilized peoples, prolonged lactation is common. This is much to be regretted, as it tends to produce depletion of the mother with symptoms of "tabes lactealis," and poorly nourished babies.

TIME

Normally, nine months is considered the proper period for a mother to nurse her child. Under prolonged lactation would come cases in which maternal nursing, wholly or partially, has been indulged in longer than twelve months.

When lactation exceeds a period of two years, it is, however, permissible to speak of it as "abnormal mammary secretion," as the child, obviously at this time, has become independent of the milk supply of the mother; yet it is an altogether common occurrence to see lactation intentionally prolonged indefinitely, sometimes exceeding forty years (Cazeaux¹). In the ethnographic work by Ploss² we find that this unnatural custom is found among all the races of the globe. Gellhorn,³ in his travels in Siam, reports that he has repeatedly seen a boy of 6 or 7 interrupt his play, or put his palm-leaf cigaret behind his ear, and return to his mother's breast and take a sip of refreshment. Among the poorer classes this habit is often induced by economic reasons, but sometimes, also, as a matter of convenience, since it pacifies the child with the least disturbance to the mother. Then, the popular belief that lactation prevents conception is also a potent factor in producing this custom. Jacobi, many years ago, stated that "lactation and pregnancy are incompatible," but this statement is far from being universally accepted.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Cited by Noel: *Echo méd. de Cévennes*, 1901, p. 207.

2. Ploss and Bartels: *Das Weib in der Natur und Völkerkunde*, Ed. 6, Leipzig, 1899.

3. Gellhorn: *Medizinische Reise-Erinnerungen an Siam*, *Deutsch. med. Wchnschr.* 25, No. 9, 1899.

LACTATION AND CONCEPTION

Weinberg⁴ states that conception occurred during the first six months after childbirth in only 1.2 per cent. of 513 nonmenstruating women nursing their children, and in 59.5 per cent. in 615 who were not nursing.

Fordyce⁵ reports that out of 645 cases, 22 per cent. were cases of prolonged lactation. The same author⁶ states that overlapping pregnancy and lactation occurs in 24 per cent. of mothers, and may, obviously, exist for some time without being suspected. Only too often in such cases, it is found that after the birth of the child the mother is quite unable to nurse satisfactorily for any length of time, as the milk is usually poor in quality and insufficient in quantity.

Fordyce⁷ conducted an observation on 100 mothers who had given birth to 405 children (twins in five cases); of these, 376 infants survived at least two months. In 259 (69 per cent.), the children were nursed at the breast for at least two months, and therefore in these 259 cases there was a possibility of pregnancy or menstruation coexisting with lactation. In these cases the duration of lactation averaged ten months. In six cases the condition as to menstruation was not ascertained. Of the 253 remaining cases of lactation in which this point was determined, in 60 per cent., there was complete amenorrhea, while in 40 per cent. menstruation occurred.

From every point of view, prolonged lactation is unsatisfactory. The risks are real, and the compensating advantages only illusionary.

I am emphatic in the belief that along with the constant reiteration of the command for maternal nursing there is the very important obligation of advising a strictly limited lactation. While my personal figures are comparatively small, my findings concur with those of other observers, and lead to the deductions that:

1. The concurrence of pregnancy and lactation is comparatively common.
2. Conception is rare within the first six months of lactation, and uncommon before the eighth month.
3. When pregnancy and lactation overlap, both the fetus and the mother are likely to suffer.

EFFECT ON BABIES

Fordyce⁷ studied 300 children with regard to rickets and prolonged lactation, and found that rickets was more common among children who were breast fed for over eight months than among other children. This is attributed to the natural variations in the composition of mother's milk, not only in different individuals, but in the same individual at different times.

While no one questions that, where practicable, maternal nursing, when properly regulated, is the best and only method of procedure for the good of both mother and child, one must, however, not lose sight of the evil consequences of overlapping pregnancy and lactation, and prolonged lactation. Such conditions overshadow a diminished value of the milk in future lactations, and consequently form a serious handicap in the natural nutrition of later infants.

CAUSE OF PELVIC INFLAMMATION

Fordyce also reports that prolonged lactation is a cause of pelvic inflammations.

Walsh,⁸ who made an extensive study of prolonged lactation, states that the deleterious effects of this prac-

tice are more noticeable in women physically below par, and that they suffer from serious disturbances—circulatory, digestive and nervous; that the endometrium, as well as the muscular structures, partake of the general debility; that they suffer metrorrhagia from relaxation of the capillaries, and, that leukorrhea usually accompanies their other symptoms.

Lawson Tait asserts that prolonged lactation is the cause of a large number of cases of subinvolution of the uterus; and, further, that "in the majority of cases, one might almost say that in ninety-nine out of every 100 cases, chronic endometritis is accompanied by, and is indirectly due to, subinvolution of the uterus, following labor or miscarriage."

Skene mentions this as predisposing to endometritis, and reports a case of a woman who nursed her child for eighteen months and who, in consequence, suffered from cervical endometritis.

Thomas also mentions it as a cause of chronic cervical endometritis.

Marion Sims⁸ says that metrorrhagia may result from superlactation, but that such cases are not common and usually not obstinate. He mentions eight cases of metrorrhagia due to this cause. The period of suckling varied from sixteen to twenty-four months.

Johnston⁹ reports the occurrence of mammary secretion, accompanied by certain rational signs of pregnancy, in two nonpregnant women. One of these patients had retroflexion of the uterus. When this was corrected the secretion of milk ceased.

Stewart¹⁰ reports the case of a woman who was secreting milk from her right breast six years and four months after delivery. The child was not nursed on account of insufficient secretion and too short nipples. A plastic operation, and one for retroflexion, had been performed after confinement. The pelvic organs were otherwise normal. The breasts were small and had enlarged milk ducts.

Grünbaum¹¹ cites two cases of hysterectomy with ovariectomy in women of child-bearing age, one being a multipara. These women had secretions of milk following the operation for from eleven to seventeen days. He reviewed twenty-one cases of similar nature.

Dassier¹² noticed in climacteric women, secretion of milk following mastitis.

These cases lead to the very interesting question of the activity of the breast due to pathologic conditions. Tumors of the breast may be left out of consideration. We are here merely concerned with affections of the genital sphere.

Gellhorn has observed in the University Clinic, Bern, fourteen cases of mammary secretion in sterile women who exhibited uterine fibroids. He also found colostrum in the mammae in twenty-five out of forty-four cases of fibroids. He believes that the alteration of the blood by the uterine tumor causes the mammary symptoms. Irritation of the uterus by a strong galvanic current failed in his hands to cause milk secretion. He excludes reflex through the nervous system.

None of these authors endeavor to explain why the uterus is thus affected.

Sinclair⁸ offers this explanation: During pregnancy, the breasts are undergoing a change to prepare them for the purpose of lactation. Immediately after

4. Weinberg: *Ztschr. f. Geburtsh. u. Gynäk.* 1903.

5. Fordyce, A. D.: *Brit. J. Child. Dis.* 3: 302-304, 1906.

6. Fordyce, A. D.: *Lancet*, Jan. 27, 1906.

7. Fordyce, A. D.: *Lancet* 84: 221, 1906.

8. Virginia Med. Month. 18: 1001-1007, 1891-1892.

9. Johnston, G. W.: *Am. J. Obst.* 21: 830, 1888.

10. Stewart, D. H., cited by Jacobius: *Arch. f. Kinderh.* 48: 1-160.

11. Grünbaum, D.: *Milchsekretion nach Kastration*. *Deutsch. med. Wchnschr.* 33, No. 26, 1907; *abstr. J. A. M. A.* 49: 976 (Sept. 14) 1907.

12. Dassier, cited by Noel: *Echo méd. de Cévennes*, 1901, p. 207.

delivery, there is an acceleration of this process, which is generally completed in from three to four days. Stimulation of the breasts by nursing at this time exerts a powerful influence in causing contraction of the uterus. Then, if lactation is gradually stopped, reevolution of the sexual functions becomes gradually complete; but if lactation has been carried to excess, it is natural to expect that it has exerted a greater than normal influence on the sexual organs. And when lactation is suddenly stopped, it is reasonable to suppose that the final stage of evolution will be more rapid than usual and attended by some unusual phenomenon. But this does not explain why the uterus suffers in prolonged lactation. Besides the uterus, other organs are affected.

Microscopic researches have shown that in all forms of true secretion, the active agents are cells which have the power of selecting from the blood the requisite materials; these cells, developed in the interior of the organ, become distended, burst or liquefy, and yield their contents to the excretory ducts.

In the mammary glands, as in other glandular structures, according to Goodsir,¹³ the inner surfaces of the ultimate milk follicles are covered by a layer of epithelial cells, the true agent in the process of secretion. As soon as one set of cells has emptied its contents, the cells die and are replaced by a new set of cells from the nuclei of the germinal cells of the follicles.

Bird¹³ obtained evidence that this alteration commences in the blood, and goes on during pregnancy as a preparation for lactation. The evidence is through the presence of kystein (which is nearly related to casein) in the urine during pregnancy; indicating the conversion of albumin into casein of the blood, and preventing its accumulation in this fluid before it is secreted by the mammae by this curious substance in the urine.

If these results are true, it does not seem so very strange that the secretion of milk cells should be permanent, under favorable circumstances, which cannot at present be specified, any more than that the secretion of the urine or bile, once commenced, should be permanent. The secretion of milk, abnormally continuous in the foregoing case, may be only a transfer of the office of freeing the system of nitrogen by the usual agents, the kidneys, to the unusual one, the mammae, which remove it by casein instead of by urea, from idiosyncrasy, the former being permanently formed in the blood.

Channing¹³ reports two cases of prolonged lactation lasting four and eight years; but the secretion of urine was not studied in them.

Coale¹³ deemed the analysis of the urine desirable and important, in such cases.

NEW-BORN

Billroth¹⁴ states that in a tolerably large number of cases of such tumors, he has never witnessed a coincidence with abnormal milk secretion. The occasional occurrence of milk secretion of the new-born of either sex is sufficiently known, but satisfactory explanation has not yet been given.

Steifensand¹⁵ was the first to call attention to the fact that, in the new-born, all glands exhibit pronounced activity.

Basch¹⁶ ascribes the phenomena to the welling up of the secretion to the surface, thereby loosening the hornified epithelium which clogs the orifices of the milk ducts.

Bumm¹⁷ says that the skin of the new-born is very sensitive and responds to the influence of air and light by reddening and exfoliation of the uppermost layers of the epidermis. This irritation is also the cause of the mammary secretion.

Longridge¹⁸ finds that in large children with an abundance of subcutaneous fat, the breasts are normally well developed irrespective of sex, and on pressure often secrete a fluid indistinguishable from milk.

Starling¹⁹ and Lane-Clayton state that there is a chemical factor in the body of the fetus, analogous to the one acting on the mother's breasts.

Halbau²⁰ concludes from his researches that pregnancy produces local phenomena in the fetus, which are identical with, though not so intense as, those in the organism of the mother. In a later study he attributes the causation of this mammary hypertrophy to an internal secretion of the placenta. He is of the opinion that the etiology of mammary secretion has nothing to do with the fetus, but is due to the internal secretion of the ovary; in pregnancy the function of the ovary is temporarily assumed by the placenta. In exceptional instances, lacteal secretion takes the place of menstruation.

CAUSE OF EYE AND BRAIN DISORDERS

Some report resultant eye and brain disorders. McKenzie⁸ was the first British writer to call attention to the effect of prolonged lactation on diseases of the eye. He described a case of retinitis due to this cause. It is usually bilateral.

Taylor⁸ stated that the injury may extend from a slight impairment of vision to a total loss of sight.

The brain is also seriously affected, and epilepsy is known to have developed. Luke⁸ mentions two cases of insanity as a result. Similar cases are also cited by Hewitt and Ashwell.⁸ Morton²¹ reports twenty-two cases showing inflammation of the brain and its membranes occurring in children in consequence of prolonged lactation.

Duval²² speaks of nonpuerperal mammary secretion and gives as causes: (1) menstruation; (2) tumors of the breasts; (3) affections of the utero-ovarian apparatus; (4) mechanical or psychic stimuli independent of any material modification of the organ, and (5) cases occurring after the ménopause.

Spark²³ reports a serious case of galactorrhoea with emaciation, anorexia, disturbed digestion, etc. It took four months to stop it. Abscesses had occurred in two successive confinements. Previous to the third confinement, extract of belladonna and glycerin were applied to the breasts every third night for a week. Milk appeared slightly for a day or two at the end of the week, and then discontinued.

Jacobius²⁴ was able to revive nursing in from three to twenty-six days after it was discontinued, by using

13. Am. J. Med. Sc., N. S. 23: 110-112, 1852.

14. Billroth: Diseases of the Female Mammary Glands, in Cycl. Obst. & Gynec. 9: 44, 1887.

15. Steifensand, cited by Knapp in F. von Winckel's Handbuch der Geburtshilfe, 1904, II, Part 1, p. 163, 1845.

16. Basch. Beiträge zur Kenntniss des menschlichen Milchapparates, Arch. f. Gynäk. 40, No. 1.

17. Bumm: Grundriss zum Studium der Geburtshilfe, Ed. 2, 1903, p. 271.

18. Longridge: J. Obst. & Gynec. Brit. Emp., March, 1908, p. 165.

19. Starling, E. H.: The Chemical Control of the Body, J. A. M. A. 50: 835 (March 14) 1908.

20. Halbau: Ztschr. f. Geburtsh. u. Gynäk. 3: 191, 1904.

21. Morton: London M. & Phys. J., 1888-1889.

22. Duval: Cited by Johnston (Footnote 9).

23. Spark, J. S.: Brit. M. J. 2: 653, 1878.

24. Jacobius: Arch. f. Kinderh. 48: 1-160.

a rubber nipple attached to a rubber tube, which the mother sucked. This was effective treatment with many patients that never nursed a child, not even during the puerperium.

CASES OF PROLONGED LACTATION

Mention will be made of some interesting cases:

Mrs. E. B., aged 31, born in Chicago, with unimportant family history, gave birth to a child eleven years ago, and had an extra-uterine pregnancy of five and one-half months' duration, three years ago. Both breasts have secreted rich, creamy milk since the birth of the child eleven years ago. (For complete report, with unique surgical complications of this case, see: Seifert, M. J.: Ectopic Gestation, *Internat. Clin. Series* 30, 2, 1920.)

Arnheim²⁵ reported a case of a woman of twenty-six who had been confined four years before, and since then had had a profuse mammary secretion that resisted all known methods of treatment.

Kneeland¹³ reported a case in a woman of 35, who gave birth to a child five years before. She nursed it until it was 2 years old, when it died of chronic hydrocephalus. Her husband died when the child was 2 years old. Milk secretion was very profuse, and although not pregnant again, she secreted milk in abundance five years after the birth of the child.

Walsh⁸ reported a case in a colored woman of 23; her first child was 5½ years old, whom she had nursed for two years. Her breasts had not been dry since, and she had been accustomed to milk herself two or three times daily. Three years before, she had an abscess of the breast, and a year later, miscarriage followed by dysmenorrhea. Her breasts were large and filled with milk, which could be expressed on the slightest pressure. Belladonna, turpentine and strapping were tried, but milk continued to secrete in spite of treatment.

Nikolski²⁶ reports a case of a woman of 31, delivered of a child five years before, who lived but a short time. She continued to secrete milk to date.

Edelberg²⁷ reports a case in a widow of 27 who married at 18, and had never menstruated. She had irregular menstruation after marriage. Four years later she became pregnant, menstruation ceased, and she was later delivered of a healthy child. There was no menstruation for eleven months, whereupon it again became irregular. No further pregnancy occurred, but there was copious secretion of milk six years after the birth of the child. The patient lacked in sex sense. No gynecologic examination could be obtained.

Clarke²⁸ reports a case of a mother who nursed her child for five years and two months. She menstruated only twice during this period. On a physician's advice the child was weaned, and the milk secretion soon stopped.

Cheimisse²⁹ cites a case of latent lactation, with anemia and debility, two years after the weaning of the child. Milk was secreted, but expressed only on pressure.

Beltz³⁰ reports a case of latent lactation four years after the child was weaned. The secretion increased at menstrual periods, but was obtained only on pressure.

Dr. Ellittson cites a case of a woman who secreted milk after miscarrying at seven months; then, another, who had never been pregnant. He also cites a case of a young woman who suffered from dysmenorrhea as a result of ovarian trouble. She had never been pregnant, but had mammary secretion of milk.

EXTRAORDINARILY PROLONGED CASES

There are several cases on record of extraordinarily prolonged lactation.

Kanneff³¹ reports a case of thirty-two years' duration. Cazeaux¹ describes the case of a woman in whom an abundance of milk was secreted for forty-seven years.

Siegarth³² quotes cases of five grandmothers who had borne from nine to seventeen children of their own and nursed each one for two years, as well as suckled their grandchildren—one of these for more than twenty-two years, and twelve of the children for 280 months. In spite of unfavorable social and economic conditions, there was not a case of rickets among them, and only one of these children died in early infancy.

Landau³³ quotes Billroth regarding a woman, aged 82, whose breasts were functioning. The same author removed the ovaries in a woman, aged 29, who later on developed milk in her breasts without pregnancy. He also cites a case of a woman, aged 24, whose milk in one breast was sweet, and in the other salty. The child refused nursing. Chemical analysis was not obtained.

VIRGINS

The occurrence of copious lacteal secretion in the virgin was noticed and discussed by the illustrious father of medicine. His observations have since been periodically added to by records of new cases, in all ages down to our own.

The American physiologist Dunglison emphasized the fact that very active and copious lactation may be present without previous impregnation, "for it has been witnessed in the unquestionable virgin, in the superannuated female, and even in the male sex."

Knott³⁴ cites three cases of nurse girls who were entrusted with the care of infants for the night. In order to quiet the babies, they allowed them to play with their breasts and suckle their nipples. Increased sense of fullness and warmth was followed in a few days by copious secretion of milk. It promptly yielded to simple treatment of belladonna externally and internally. Another case of a girl of 8 who suckled her infant brother for a month was recorded by the French obstetrician Baudelocque.

LeRoy³⁵ mentions an African Jewess, with a history of marked nervousness in the family, but no stigmas, who menstruated at 10 and developed secretion of milk in considerable quantity. At 23 she developed symptoms of mania and was placed in an institution in Paris. The breasts were well developed, but the nipples absent, so that in this case the secretion could not be attributed to a stimulation, from the suction of nipples. There was extreme erotism in her talk, and she was proud of her anomalous function.

Noel³⁶ mentions the case of a young married woman who had never had sexual intercourse. She was called

25. Arnheim: Transactions of the Medical Society of Hamburg, Deutsch. med. Wchnschr., 1908, p. 445.

26. Nikolski: Russk. Vrach 20: 178, 1899.

27. Edelberg, F.: Russk. Vrach. 21: 57, 1900.

28. Clarke, H. R.: Brit. M. J. 1: 1143, 1902.

29. Cheimisse, L.: Semaine méd. 24, No. 28, 1904.

30. Beltz: Bull. Soc. méd. Rhems, 1876.

31. Kanneff: Russk. Vrach 20: 450, 1899.

32. Siegarth, F.: München. med. Wchnschr. 1903, p. 1349.

33. Landau, T.: Deutsch. med. Wchnschr. 16: 745-747, 1890.

34. Knott, John: Am. Med., N. S. 2: 373-378, 1907.

35. LeRoy, R.: Tribune méd., N. S. 63: 7, 1910.

36. Noel: Echo méd. de Cévennes, 1901, p. 207.

on to care for an infant 6 months old. To quiet it, she took it to her breasts, and secretion soon followed.

Blum³⁷ reports the case of a girl, aged 17, with two developed mammae in their normal places, who had in the region of the mons veneris a third mamma, the size of a goose egg, with seven nipples. Four of these secreted regularly a copious amount of colostrum before and during the first day of menstruation. The two normal mammae did not secrete at all.

VIRGIN ANIMALS

These references are also corroborated by animal breeders. Virgin sheep, dogs and rabbits have occasionally been found to secrete milk.

Harvey³⁸ states that overfed female dogs which admit the dog without fecundation following steal away the whelps of another female dog, tend and lick them, and fight fiercely for them. Others have milk and colostrum in their teats, and are subject to diseases of those that have whelped.

Noel³⁶ cites the case of an ape confined in a cage, an unquestionable *virgo intactu*, which developed secretion of milk in her teats by occasionally rubbing them. It lasted nine months, and reappeared at intervals. This author also cites several instances in which women were able to nurse after an interval of four months.

PHANTOM PREGNANCIES AND VICARIOUS MENSTRUATION

Gellhorn³ cites several cases of phantom pregnancy with mammary secretions. These were due, either to the desire or the fear of pregnancy, and in one case to the sight of milk secretion.

Pusch and Courty³⁹ collected twenty-six instances in which there was vicarious menstruation.

Landau³³ and Gautier⁴⁰ report a similar case; the latter, that of a virgin.

SUPERANNUATED FEMALES

Turning our attention to the superannuated female, Dr. Gordon Smith refers to a manuscript by Sir Hans Sloane containing the record of a woman of 68 who had borne a child more than twenty years before, and who had nursed all her grandchildren, one after the other.

Professor Hall of the University of Maryland reports the case of a widow, aged 50, whom he had witnessed nursing her grandchildren, although she had not borne a child of her own for twenty years. In this case the child was put to the breast to quiet it, in the process of weaning.

Dr. Francis of New York narrated a case of a woman who for fourteen years after the birth of her child secreted milk in great abundance.

Dr. Kennedy of Ashby de la Zouch has described the case of a woman who menstruated during lactation, suckled children through the full course of forty-seven years, and in her eighty-first year had a moderate but regular supply of milk, rich and sweet, and not differing from that secreted by young, healthy mothers.

Stack⁴¹ tells of a woman of 64 who had not borne a child in sixteen years, but nursed her grandchildren, one after the other.

LACTATION IN THE MALE

Finally, I will mention the still more anomalous phenomenon of lactation in the male.

Knott³⁴ tells of Professor Hall exhibiting to his obstetric class in 1827 a colored man, aged 55, who had large, soft, well formed mammae, rather more conical than those of a female, and projecting fully 7 inches from the chest, with perfect and large nipples. The glandular structure was in every respect like that of a female. This man officiated as wet nurse for his mistress, and when the milk was no longer required, great difficulty was experienced in arresting the secretion. His genital organs were fully developed.

There has been cited⁴² the case of a man about 70, who was left a widower with an infant, aged 2 months. He took the baby to his breast and soon secreted enough milk to rear him. His breasts were large—larger than those of some women.

Knott⁴³ cites the case of a Chippewa Indian, who also was left a widower with a young infant. He cared for him as a mother would, his breasts began to secrete milk, and he raised the child.

Dorland states that it is not at all uncommon among the men of the lower classes of Siam to nurse the babies, either altogether or alternately with the mothers.

Cases of male domestic animals have been cited⁴² whose breasts secrete milk in abundance.

SUMMARY AND CONCLUSION

We have seen, in the foregoing, that lacteal secretion not only occurs during pregnancy and the puerperium, but also may appear in the new-born, in the growing child, in the adult virgin, in the old woman, and in the male.

It may be prolonged indefinitely after childbirth, and may be associated with certain pathologic conditions in the genital sphere, as well as after hysterectomy and ovariectomy.

Aside from the intense scientific interest in the etiology of lacteal secretion, which is still obscure, there is also considerable practical importance attached to abnormal activity of the mammary glands, and a thorough knowledge of the atypical functions of these organs is indispensable to the expert in medicolegal practice.

The inference is: Most mothers could nurse their babies if, instead of shirking, heeding false advice, or taking galactagogues, they would stimulate their breasts by normal methods.

30 North Michigan Avenue.

ABSTRACT OF DISCUSSION

DR. WILLIAM KOHLMANN, New Orleans: Dr. Seifert has collected all the literature and at the same time brings out some points on the practical facts of lactation. He has shown that the secretion of milk takes place not only during pregnancy, but under other conditions. We have all seen a woman who either wishes or is afraid to be pregnant and yet secretes colostrum, if not milk. During inflammatory conditions of the uterus, milk secretion may not be very frequent. I operated on a woman five years ago following infection of childbirth. She had to be operated on again last fall because of infection. Immediately after recovery she was secreting milk and did so for about two weeks. From the medicolegal aspect this is important. It could be brought up that a woman was pregnant because of the presence of

37. Blum: München. med. Wchnschr., May 21, 1907, No. 9.

38. Harvey, cited by Edgar: Practice of Obstetrics, 1903, p. 484.

39. Pusch and Courty, cited by Henning: Zentralbl. f. Gynäk., 1908, No. 18, p. 601.

40. Gautier: Lyon méd., 1903, p. 199.

41. Stack: Phil. Tr. cited by Knott (Footnote 34).

42. Phil. Tr., cited by Knott (Footnote 34).

43. Knott, cited in Dr. Richardson's Journal.

milk in her breast. I wish to emphasize two points: first, the hypersecretion of milk, and, second, protective secretion of milk. Hypersecretion of milk is to be spoken of if the secretion exceeds two pints a day. Ordinarily, a woman secretes half a pint a day. Of course, there are women who secrete a great deal of milk and can nurse several babies, especially twins. Unfortunately, many women who have a chronic disease, like tuberculosis, are inclined to secrete a great deal of milk. To let her continue to secrete milk without attempt to stop it would interfere with the health of the woman, and milk of that kind is no doubt unhealthful and may be followed by complications of the digestive organs of the child. There seems to be a decrease of mothers who are able to nurse their children. Unfortunately, there is little we can do to stimulate the secretion. The only thing we can do is to regulate the general health and to try to increase the secretion of milk. We should try to increase the flow of milk because the child will do much better when nursed by the mother than to be fed by artificial means.

PROLAPSE OF THE FEMALE URETHRA*

RICHARD R. SMITH, M.D.

GRAND RAPIDS, MICH.

My object in presenting this paper is to call attention to the condition designated by its title, to describe it and to offer a simple means for its correction. I hardly need say that so-called bladder symptoms are among the most annoying of all the discomforts that

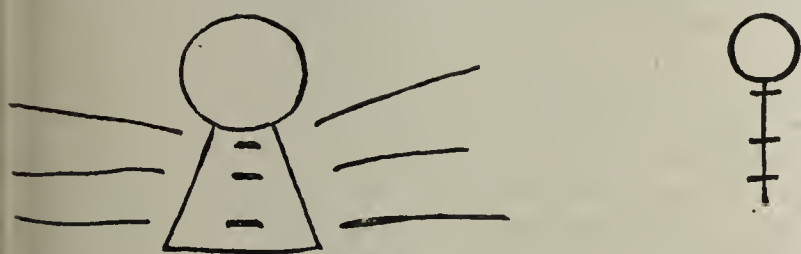


Fig. 1.—Diagram of operation on meatus itself. This is done for the purpose of narrowing a dilated orifice and restoring normal projection to the urethral mucous membrane.

rise from childbirth injuries. We have recognized that they are due directly, though perhaps not entirely, to the loss of integrity of structures anterior to the vagina which have intimately to do with the support of the bladder and the urethra. In general these injuries are more important than the prolapse of the posterior wall and rectocele which follow the separation or tearing of the levators. But far more consideration has been given to the perineum and its repair than to the defects in these anterior structures. It would be difficult to understand why the condition so described has not received earlier attention, and even today is so commonly overlooked, if we did not realize that cystocele and its associated lesions have only recently received the attention they deserve.

When a woman comes to us complaining of frequent and perhaps painful urination, together with more or less constant discomfort in the region of the bladder, or of other symptoms associated with the act of micturition, we systematically examine the bladder and upper urinary passages for a cause of the trouble, which we think of largely in terms of infection. At the same time we look for mechanical defects. If we find a cystocele we are likely to consider this the extent of the mechanical trouble and offer its surgical correction as a means of relief.

In making such an examination we note and consider the extent of the cystocele, the position and condition of the uterus, and the integrity of the perineum and posterior vaginal wall. We are likely, however, not to inspect thoroughly and examine the meatus urinarius. With the patient on her back and relaxed,



Fig. 2.—Denudation and suturing of anterior vaginal wall above meatus. After obtaining a good hold on the forward edge of the mucous membrane, a rather deep bite is taken into the firm tissue beneath the pubic bone, care being taken, of course, to avoid the urethra. When tied, the meatus is drawn upward and its normal protected position restored.

the meatus and anterior vaginal wall close to it protrude but little, if any, whatever the condition present, and are likely to be regarded as quite normal. Ask the woman to strain, however, and if there has been an injury at this point the meatus and the anterior vaginal wall back of it bulge forward and roll upward, bringing them into marked prominence.

Close observation will not infrequently disclose an edema of these structures. Most important is the condition of the meatus itself. The mucosa at the lower end of the urethra is seen to roll slightly out of the meatus, exposing to view a bit of the tender lining of the canal. The meatus may be found to be larger than usual, its two small lips torn or stretched and offering a very imperfect covering for the sensitive membrane within. The mucosa is not infrequently the seat of a so-called caruncle, which is sometimes exquisitely sensitive, though frequently very little so.

Imagine, now, the patient up and about, or straining to evacuate the bowel or bladder. We must, of course, have the protrusion produced many times a day. Ask the patient whether there is tenderness at this point and whether she has discomfort there. The answer will frequently be "yes." She will tell you that her clothing often irritates her and that bathing the parts or any roughness produces the same results. It occasionally happens that close questioning will reveal the fact that practically all her symptoms are those just mentioned. At other times they are but a part, though an important part, of the urinary symptoms of which she complains. Frequent urination has many causes. The usual ones lie perhaps in the urinary passages above the meatus,

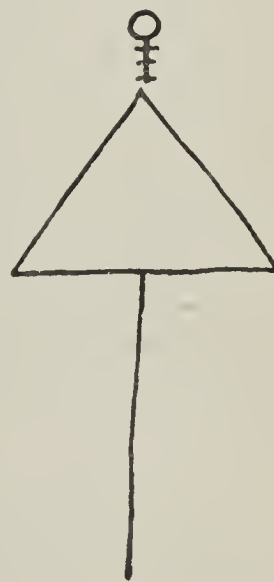


Fig. 3.—Lines of incision used when other operations are performed requiring the usual longitudinal incision in the anterior vaginal wall.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

but I have occasionally seen it produced by this condition alone. It is well to question, when painful urination is complained of, as to its nature. The passage of urine over a swollen, irritated meatus produces burning and discomfort at this point.

In considering the correction of cystocele, with or without a prolapse of the uterus, I would urge that the condition of the urethra be observed, and if it is prolapsed, that this condition be corrected at the same time, or, if the latter condition alone exists, that the slight operation necessary to its correction be offered the patient. The operation will vary somewhat according to the circumstances. Let us assume first that the prolapse of the urethra exists alone. First we will remove the caruncle or protruding mucosa. This should be done with greatest delicacy, because the tissue is extremely soft and bleeds freely. A very fine stitch or two on a fine needle is occasionally, but not always, necessary. More important is the closure of the meatus to its normal dimensions, and this is done by making a small denudation (Fig. 1), removing a bit of the circumference of the meatus and denuding a little of the surface beneath it as in the diagram. The placing of the fine chromicized sutures will vary according to the individual case, but there is little difficulty in this part of the operation. There follows a large triangular denudation of the anterior vaginal wall that protrudes (Fig. 2), the base of which is placed as high as the under edge of the pubic bone, or slightly higher, so that when it is closed by sutures the meatus is drawn back to a normal position. The stitches, which must, of course, avoid the urethra, are inserted deep enough to obtain a good hold of the firm tissue close to the pubic bone. I commonly employ chromicized catgut.

If an ordinary cystocele operation is performed, the usual median incision along the anterior vaginal wall should continue well forward, and should then be broken by a transverse one, which forms the base of the triangle described above, the operation being completed in the same way (Fig. 3). When an interposition operation is performed, I would urge bringing the fundus close to the pubis and stitching it rather firmly there, the retaining stitch being placed directly on top of the fundus. This, I believe, will prevent a protrusion afterward of the anterior wall at this point and, if combined with a correction of a previously existing protrusion of the meatus and anterior wall, will do away with and prevent the occurrence of this disagreeable result; at least, I have had no trouble since I have been more particular about doing it this way.

I am aware that many gynecologists have recognized the condition that is the subject of this paper and have adopted similar means of correcting it. I am sure, however, that the practice has not been universally followed and has not been sufficiently emphasized.

ABSTRACT OF DISCUSSION

DR. S. M. D. CLARK, New Orleans: Murette's article shed new light on the true pathology of this incontinence of urine. The walls of the urethra are parallel normally. In childbirth the structures that support the posterior vaginal wall are damaged in such a way as to cause a prolapse, a sagging, and instead of having parallel urethral walls a bottle formation results. That is the basis of the whole trouble. By reestablishing the parallelism of the urethral walls, which Dr. Smith's procedure does in the large majority of cases, the incontinence is overcome. Murette's procedure, which we have adopted in our clinic, does that very effectually.

DR. F. F. LAWRENCE, Columbus, Ohio: Before a prolapse of the urethra can occur, as described by the essayist, there must be a descent of the uterus, together with the formation of the cystocele. A cystocele or urethral prolapse cannot develop so long as the uterus lies in its normal axis. The first thing that must occur is the dropping downward and forward of the cervix, thus relaxing and permitting pouching of the anterior vaginal wall with the development of cystocele. Any operation which shortens the anterior vaginal wall tends to draw the cervix forward, and must fail in its object because it favors the descent of the uterus. I very much doubt if any of us have ever seen a cystocele when the patient had a good perineum to support and hold the cervix in its proper position. Hence, the first and most important thing to do is to rebuild the perineum, and this must be done in a manner to get a wide infolding of the deep pelvic fascia and perineal muscles at its upper point, so as to hold the cervix back in its normal position. Then with the anterior colporrhaphy performed in such manner that the suture line is in the long axis of the vagina, we will get results. Any operation which produces a crosswise cicatrix will shorten the vagina, tending to pull the cervix forward and widen it, favoring the development of cystocele.

DR. ARTHUR H. CURTIS, Chicago: A great number of patients complain of symptoms and on routine examination we fail to recognize the pathology. It is necessary in such instances to examine the patient in the standing position. In the recumbent posture, even when the patient strains, we will often overlook a relaxed urethra and cystocele and even a prolapse of the uterus. When the patient is standing these lesions are almost invariably evident and easily diagnosed. As to urethral caruncle: the more common form is that in which there is a moderate prolapse of the urethra with the development of redundant granulations on this prolapsed tissue. About one year and a half ago I noted that there was usually a cystocele in conjunction with the caruncle. Since then I have failed to observe a single caruncle in which there was not a urethrocele or cystocele. I have since performed all caruncle operations with removal of the caruncle, combined with slight reparative operations on the prolapsed urethra and cystocele. In none of these instances have I seen a recurrence. Therefore, I believe it would be a good plan in cases where we find a caruncle to look carefully for the causative urethrocele or cystocele.

DR. RICHARD R. SMITH, Grand Rapids, Mich.: I did not mention incontinence as one of the symptoms for which this operation should be done, nor did I mention cystocele, with which this prolapse of the urethra is so often associated. That is a subject quite in itself. This operation is not intended to correct the cystocele. The standing of the patient during examination is a very important point. Snipping off the caruncle almost invariably leads to recurrence. It is necessary to protect the mucous membrane at the lower end of the urethra.

What Is Diabetes?—All our present knowledge and particularly the recent experimental work of Allen show that the underlying deficiency is a failure of the internal secretion of the pancreas, with consequent inability to convert sugar from the crystalline to the colloid form, in which form it must be present before it can be utilized by the body cell. Such failure on the part of the internal secretion of the pancreas may or may not be related to gross disease; it seems reasonably certain that nervous disturbance may disturb the equilibrium normally maintained between the organs of the endocrine system, and undoubtedly nervous disorder frequently upsets the balance of a diabetic. There is reason to believe that the white races generally are overtaxing the pancreatic function; the present day enormous consumption of carbohydrate, and particularly of sugar, is a new thing for the race. In America the consumption of sugar per head has risen from 4,990 grams per head in 1810 to 40,700 grams per head in 1916; perhaps a sugar famine would not be an unmixed evil.—J. F. Wilkinson, *Med J. Australia*, Feb. 14, 1920.

TYPHOID REDUCTION IN SOUTH CAROLINA

COMPARATIVE RESULTS IN COUNTIES WITH AND WITHOUT HEALTH ORGANIZATIONS *

L. A. RISER, M.D.

Director, County Health Work, South Carolina State Board of Health
COLUMBIA, S. C.

The vital statistics department was organized in South Carolina in 1915, and we have no accurate records of deaths from typhoid previous to that year. In this paper I will attempt to show how typhoid fever has decreased, and what methods are being used to effect this decrease. The decrease has been gradual

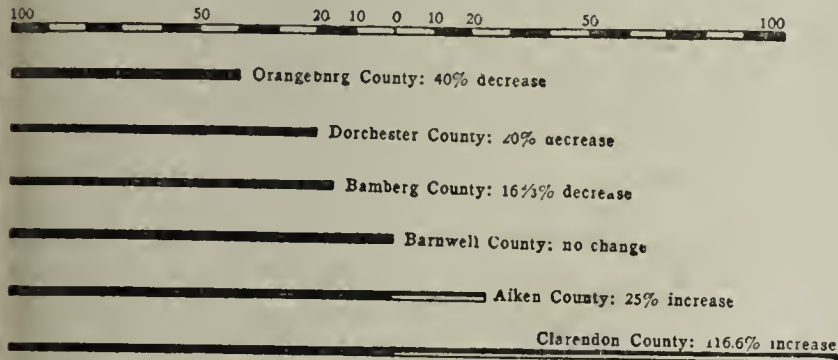


Fig. 1.—Increase and decrease in incidence of typhoid, 1917-1919: Orangeburg has had a county health department for three years. It has an area of 960 square miles and has made the same appropriations each year as Darlington with 600 square miles. Other counties compared have had no city or county health organizations.

since 1915, with the exception of 1918, during which year the army camps brought more than a hundred thousand people to the state. This does not refer to soldiers, but to workmen and camp followers who were not under army restrictions, and we credit to this fact the increase in 1918, as the cities in which these camps were constructed showed very large increases, some of them doubling their number of deaths of the preceding year.

ORGANIZATION

In 1917 the first county health unit was formed in South Carolina. This organization was perfected in Orangeburg County, one of the largest and most prosperous counties in the state. The unit consisted of a physician as director, with a corps of inspectors and carpenters. Greenwood County also took up the work during the year.

TYPE OF WORK

The ultimate object of the health unit was to stamp out typhoid fever and other intestinal diseases. The type of work was both educational and constructive. The physician gave lantern slide lectures in each school district on various health subjects, but stressed intestinal diseases spread by bad sanitation. The inspectors made a survey of the district, visiting each home and securing data as to living conditions of the family and sanitary surroundings of the home. Wherever possible the inspector persuaded the householder to put in a sanitary privy; if the inspector failed, then the physician made a personal visit to the home. The carpenters assisted in the construction of the privies. Specimens of feces were collected and examined for intestinal parasites, and when the

patients were found infected they were given free treatment. By circulars, posters, personal letters, exhibits, school contests, public lectures, newspaper publicity and personal interviews the importance of sanitation was constantly kept before the public

GROWTH AND PROGRESS OF COUNTY ORGANIZATIONS

In 1918 four full-time county health organizations were perfected, in 1919 six and in 1920 seven. In 1918 medical inspection of rural schools was made a part of the work, and public health nurses were added to the county units. Darlington County is probably the only county in the South in which every rural schoolchild, white or colored, has received a medical examination and a follow-up visit from a nurse.

Each organization is now designated as a county health department, and the physician has by legislation been made the county health officer, and his duties are prescribed. Counties which in 1917 appropriated \$2,000 for this work are now appropriating \$5,000, and in addition cars are furnished the nurses by local organizations. Our state appropriation for 1917 was \$7,000 for county health work; for 1920 we have been given \$27,000, a portion of which will be used for a traveling moving picture unit.

DIFFICULTIES ENCOUNTERED

In 1917 comparatively few sanitary privies were built—pioneer work is always difficult. The war with all its effects, the shortage of labor and material, the physical unrest, the breaking up of departments by the volunteering of men (every county director but one, as well as the state director, having volunteered and entered service) crippled the work for a time. The present high prices and low salaries are keeping up the difficulties, but with it all we have something to show for our work.

RESULTS OF WORK

Each county in which we have worked two years has shown a decided decrease in typhoid; the first year an increase is usually shown, owing, perhaps, to better reporting. We have selected this disease as a type of intestinal disease and have selected Darlington and

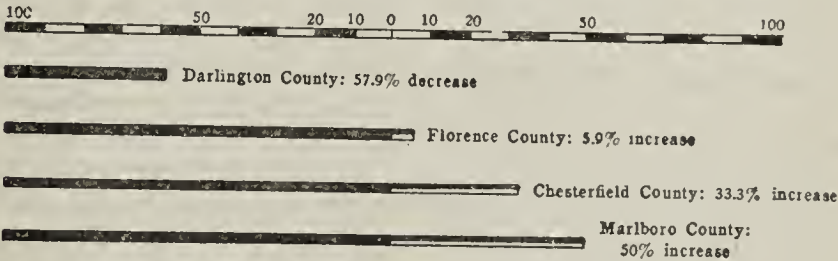


Fig. 2.—Increase and decrease in incidence of typhoid, 1917-1919: Darlington has had a county health department two years. Florence has had a city but no county health department. Chesterfield and Marlboro have had neither city nor county health departments.

Orangeburg counties for comparative results with surrounding counties having no health organizations, as these counties have had no campaigns of giving free typhoid inoculations. We are giving results from each county touching Darlington where no work has been done, and each touching Orangeburg where no work has been done, with the exception of two black counties. These two counties with a large black population give poor reports, as so many of the negroes are unattended by physicians and "fever" is given as a cause of death. Mr. C. W. Miller, our vital statistician, who helped me to get up these statistics, thought the statistics of these two counties unreliable.

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

It will be noticed (Chart 2) that each county touching and compared with Darlington shows an increase, while Darlington shows a decrease in typhoid—Darlington shows a decrease of 57.9 per cent. from 1917 to 1919.

Orangeburg shows a decrease of 40 per cent. (Chart 1). This is one of the largest and most populous counties in South Carolina, and it would naturally take longer for results to show. The state at large has gradually decreased its typhoid death rate, as illustrated in Chart 3, from 35.2 per hundred thousand in 1915 to 21.7 per hundred thousand in 1919.

CONCLUSIONS

The reduction of typhoid fever is largely a matter of education. The building of privies alone will not check typhoid entirely, but will reduce it. We have purposely held no campaigns of free inoculations of antityphoid serum in Darlington and Orangeburg counties, and the results shown are due to educational work and privy building alone, and not to inoculations. If this disease can be so materially reduced by education, it would seem that all other diseases of which the cause is known could be reduced in a similar way.

A county health organization is necessary, as one physician or nurse without assistance is not adequate for the supervision of the health conditions of a whole county.

ABSTRACT OF DISCUSSION

DR. W. S. LEATHERS, Jackson, Miss.: In Mississippi we have organizations at work in different counties, and the results we have obtained are along the same lines

which have been indicated by Dr. Riser. In one county in the state we had about 230 typhoid cases a year. This county was leading the state in typhoid. In that county we organized one of these units and conducted what we termed an intensive health campaign. We built about 2,000 privies, visited every home in the county, obtained the name of every man, woman and child we could find and tried in every possible way to get in touch with the people, and to determine the conditions which existed in the county. We instituted measures which we thought were necessary for the prevention of intestinal diseases. This intensive campaign was conducted in 1917. In 1918 there were fifty cases of typhoid and eight deaths. That is an example of what may be accomplished in every county in every state in the South; in fact, that may be done wherever typhoid exists. In 1914 there were approximately 6,066 cases of typhoid in the state. In 1919 there were 3,660 cases of typhoid. We have been able to get 90 per cent. of the doctors of the state to report their morbidity statistics for a period of six years. We assume that there are errors in these reports, but the errors are uniform, in all probability, for the same doctors have been making the reports. The decrease in figures is unmistakably very significant, and we can draw from these figures a very definite conclusion so far as reduction of typhoid fever is concerned. The education of the people is basic. One of the most effective measures is personal demonstration. We ought to go into the various communities and work with the people, and show them by

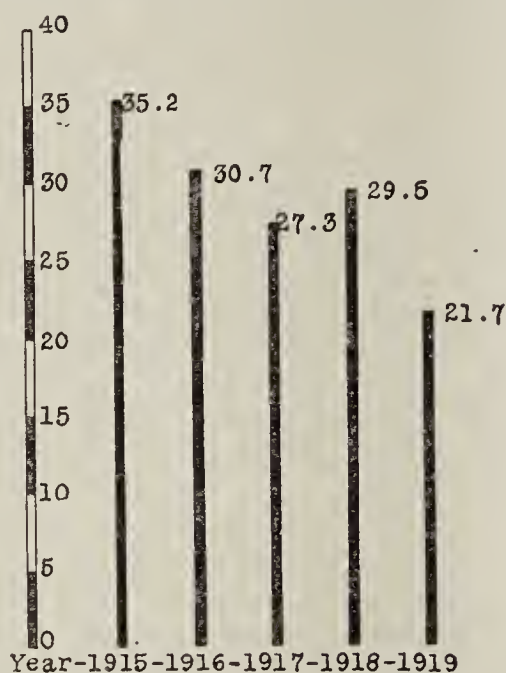


Fig. 3.—Death rate per hundred thousand.

practical demonstration what to do. We can demonstrate in a community how to build a privy and get people to build privies by demonstration methods, and illustrate that by such methods we will get very definite results in the reduction of typhoid fever. The time is rapidly approaching when typhoid fever will be a relatively rare disease.

DR. JOHN D. MCLEAN, Philadelphia: It has been stated that the incidence of typhoid fever indicates the health of a state or of a community. If that be so, the report we received in Pennsylvania last week, would indicate that Pennsylvania is becoming a very healthy state indeed. We have found that the greatest number of epidemics have been caused by carrying the disease from one person to other persons through the water and through the milk. If that be true, then the lessening of typhoid fever must be effected through supplying pure drinking water and pure milk. Pennsylvania, therefore, has determined, as far as it possibly can be done, to control the water supply of the state. We have also determined that the people shall drink good milk, clean milk. To bring this about we have, with other measures, drawn two model health ordinances. One provides how an organized community can get pure water to drink, and the other provides how this community can get pure milk to drink. We ask those responsible for the laws and for the expenditure of the finances in these communities to pass these ordinances. We hope to secure pure water and pure milk. Educate the public to the need for these things so that they will tell those responsible for the expenditure of their money that they must install a filter plant or they must install a pasteurizing plant for milk.

How is that done? Choose from among the existing agencies one, the Red Cross, the Emergency Aid, the Y. M. C. A., the Y. W. C. A., whatever it may be in that particular community, and create an advisory board to tell the councillors that they represent public opinion, and ask them to spend the money. In Pennsylvania we investigate every case of typhoid and take measures to prevent a spread of the disease and in that way we have lessened the number of cases.

DR. G. C. CHANDLER, Shreveport, La.: The sources of these diseases are the excretions of human beings, and in getting rid of these excretions and the germs they contain you will have a healthy city and save many lives. One of the best means of suppressing typhoid fever is to take milk samples, and wherever you find water in the milk, fine the milkman the limit. By doing that you will stop the spread of typhoid fever from milk. Typhoid fever can be stamped out easily if you know the source of the disease. Shreveport, up to 1918, used filtered bayou water for its water supply. In 1911, when they had about the lowest number of deaths from typhoid fever, there were 104 deaths among the residents of Shreveport from fevers, diarrhea and dysentery. There were only about 25,000 people there then, and that was about the lowest death rate we had.

DR. JOHN A. FERRELL, New York City: The public health work in South Carolina is a demonstration which carries conviction to the people and to their legislative representatives. There is uniformity of opinion that to succeed in public health work we must first educate the public. There is some difference of opinion as to the best method for conducting the educational program. The opinion is held by some enthusiasts that if you lecture to the people and distribute literature among them they will readily accept what you have to say, do what you tell them to do, and vote the money required for the work. To these enthusiasts the control of disease is a very simple undertaking. Once you have the knowledge as to the cause of the disease and its mode of spread, all you have to do is to tell the people about it, these optimists believe, and the job is done. Health officers of extended experience have learned that the people can be interested in control measures, that they are open minded, but that they have had unsound advice on many occasions. They are ready to be shown in terms that are simple and understandable, and when convinced that the proposed program has merit from a business standpoint and will yield a satisfactory return on the investment you may depend on them to give support to their leaders in public health. This method of developing public health work has been followed in a number of states, particu-

larly in the South. South Carolina, for example, in the year 1908 had less than \$10,000 state appropriation for health work. The appropriation voted by the legislature which recently adjourned approximates \$155,000 a year, exclusive of the appropriation for tuberculosis work. The growth in a number of other southern states has likewise been phenomenal. Dr. Riser recently reported that the South Carolina legislature actually appropriated more money for the health program than was requested by the executive officers of the state board of health. That the people in these states have been convinced that public health work is worth while is evidenced by the growth in the state appropriations for eleven southern states from about a quarter of a million dollars in 1910 to more than two million dollars at present. Ten years ago a full time health officer in these states was the exception. Now, they are numerous and, in the near future, I believe, will be the rule. The state's funds are being generously supplemented by towns and counties for the purpose of establishing local departments of health work in cooperation with the state board of health. These developments should be a source of keen gratification to the public health officers who have had the wisdom and ability to give the people a large value for their investments in public health.

DR. LUTHER A. RISER, Columbia, S. C.: The figures I gave here are not figures of typhoid fever cases, but of typhoid fever deaths. Dr. Leathers spoke of the necessity for demonstrations. I consider demonstrations as part of his educational work; it is all educational, but the demonstration is just a type of the educational work. Dr. Chandler spoke of the reduction of typhoid fever as being an indication of the reduction of other diseases of that type. It is also an indication of the reduction of all types of diseases, because in these counties you will find a reduction of tuberculosis just as well as you will of typhoid fever and intestinal diseases, and the death rate has also decreased in those counties more than it has in those counties where no educational work of this type has been done.

THE TRAINING OF INDUSTRIAL PHYSICIANS *

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CINCINNATI

It took the medical profession quite a while to realize that the possession of a sound medical education did not, per se, qualify a man adequately to carry on the duties of a health officer. The profession has likewise been somewhat slow to recognize that the acquisition of sound surgical technic or skilled diagnostic ability does not qualify a man to carry on the duties of an industrial physician. Just as public health work led to the requirement of specialized training, so with the development of industrial medicine has come the realization that herein lies a specialty in medical science that requires of the physician special theoretical and practical training, which has in the past ordinarily been outside the sphere of medical education. Moreover, it is just becoming apparent that the profession has in a measure failed to grasp an opportunity for the extension of its influence and the utilization of medical knowledge and experience toward the prevention of disability and the shortening of the disability period, the profession's duty to society.

The need for special training of physicians engaged in industrial work has been recognized by the profes-

sion none too soon nor too widely. Modern industrial management has been quick to distinguish between the physician trained in industrial medicine and the physician catering to industrial practice.

Urban health officers have long seen in the work of the industrial physician valuable and much needed assistance in constructive health work, for such can be prosecuted intensively among industrial personnel as it can in no other group.

Civic bodies, social workers, large industrial corporations and community organizations have seen that the old-time plant physician did not render to industrial personnel the maximum service that could justly be expected of medical science.

With the realization by these several groups of society of the need for specialized training of medical men, several of our colleges have offered such training facilities.

PRESENT FACILITIES FOR TRAINING¹

There are thirty-one medical colleges or universities offering training facilities or instruction in industrial medicine or related subjects. Of these there are two schools offering courses in this subject, leading to certification on satisfactory completion; ten schools offer a limited amount of work in the curriculums leading to the degree of Doctor of Medicine; four universities offer some instruction in vocational hygiene during the course leading to one of four degrees in public health, the requirements of which are not standardized, while fifteen schools offering postgraduate public health instruction include limited instruction in industrial medicine or related subjects.

Thus we see that there are, first, inadequate opportunities in the United States for the physician to receive either theoretical or well directed, practical instruction in industrial medicine, and secondly, that such courses of instruction as are offered show a marked lack of uniformity in conduct and standardization both of requirements for entrance and completion (certification).

It is hoped that the profession will interest itself sufficiently in this exceedingly important function of medicine to stimulate a more general inauguration of industrial medical training facilities in our medical schools, with a standardization of requirements for completion and some uniformity in type of courses of instruction.

In anticipating such action on the part of our schools, it is essential that a clear and complete understanding as to the basic requirements of an industrial physician be fully discussed, toward the end that the necessary facilities for the training of such specialists be provided. It is a discussion of this subject that I have been asked to open.

On attaining the degree of Doctor of Medicine, the future industrial physician should look forward to assuredly one year, and preferably two years of postgraduate general medical experience before he assumes the study of industrial medicine. One year of this time, at least, should be spent in internship. The experience to be gained in outpatient clinics, in dispensary work, on emergency service and admitting wards in general hospitals will be found of value. Such postgraduate experience should be supplemented, if possible, by work in night clinics, industrial clinics, industrial health centers, public health agencies and

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. I am indebted to Mr. Royal Mecker of the Bureau of Labor Statistics for the information and data here given.

municipal dispensaries. It is in such places that he will study, if he is thoughtful, not only the sick individual, but the sick as a group. Such experience, supplemented by some general private practice, is invaluable. If not socially minded, he will acquire a social point of view, and he will see at first hand the medical, social and economic problems confronting society and awaiting the assistance that the medical profession has in its power to grant.

SPECIALIZED TRAINING

The completion of this instruction and experience, if taken advantage of, should afford a good groundwork for entering industrial medical training. This is post-graduate work. It should be given in an A-1 college, either in a special department or in a division of the department of preventive medicine.

HYGIENIC TRAINING

Hygienic instruction will fall naturally into two classes, medical and engineering.

The first should cover the subject of vocational hygiene in its entirety. The student should be taught to recognize occupational affections, not only direct, specific occupational diseases, but the indirect effect of occupation on the physiology of man, though masked by subsequent acute intercurrent pathologic conditions. Among these none is more important than that of industrial fatigue. In this subject the basic physiologic facts should be acquired, but he should not allow himself to become too academic, realizing that industry is essentially practical. The student of industrial medical science should here acquire a knowledge of personal hygiene in all its aspects and learn to impart this knowledge to industrial workers in a manner which is characterized essentially by clarity and brevity, so that large groups badly in need of benefits to be derived from this information can thus profit.

Foremost in personal hygiene is dental prophylaxis. Though this specialty in industrial medicine will be handled by the dental profession, yet it should not be introduced in industry without a medical department, and should be a part of such organization. The industrial physician should possess sufficient information on the subject to apply profitably the specialized knowledge of the oral hygienist or dentist.

The student at this time should acquire an extensive knowledge of medical supervisory systems. The experience and knowledge of those engaged in this type of work both in military organizations, public schools, insurance companies, industries and other organizations should be carefully acquired. He will at this time learn what is meant by, the purpose of, and the limitations of the physical examination in industry. The distinction between physical examination and medical inspection should be clear, with the scope and function of each definitely outlined. He should understand the inauguration and conduct of follow-up systems, and should profit by the knowledge and experience of those engaged in the organization and conduct of visiting nurse systems.

The industrial medical student can also profitably learn of those who have specialized in the subject of recreation and athletics for groups, and be prepared to institute such activities among industrial workers where indicated, in a manner which is consistent with the type of industry, the character of the work performed, and with other circumstances.

Engineering hygienic instruction is ordinarily outside the scope of training of the medical man. Many of these subjects are very broad and have given rise to specialists among engineers. The industrial physician, however, should have a sound knowledge of the subject, for on him will fall the duty of acquiring the desired conditions, even if he himself is not capable of carrying them out in detail. I refer to such as heating and ventilating systems and the problems of illumination, particularly artificial illumination. Elementary engineering principles of exhaust and supply systems should be well understood, and a thorough knowledge of the mechanical principles involved in the design, construction and operation of drinking water systems should be obtained. A study of the engineering phases of housing is of great value. He should acquire knowledge of the various sanitary equipment, such as toilet and wash-up facilities; baths, lockers; water supply and sewage disposal systems; and industrial waste disposal methods, also the specifications, outlay and conduct of restaurant or cafeteria systems; and he should be able to discuss with specialists in these various fields the basic problems presenting themselves, and so act as the adviser to the industrial management on these problems.

INDUSTRIAL CONSIDERATIONS

It should be immediately recognized by the profession that a physician cannot be successful if he has in his possession only a purely academic knowledge of the various phases of industrial medical work. The position of the physician in industry is unusual in the experience of the profession. He must first learn that his success in this field and the respect that he commands will result, not *ex officio* by reason of the fact that he possesses the title of doctor, but by the quality and type of his work. Unless he can apply his academic knowledge in a practical manner in full coordination with other branches of the industrial management, he will not receive the consideration, either executive or otherwise, that he should. He must learn that his leadership depends on his ability sufficiently to convince his associates of the soundness of his views and activities. This type of leadership is at the other extreme, however, of that which attempts leadership through the dignity of the title doctor. He must learn that many activities which are theoretically sound are not practical. He must learn, in other words, that there is a compromise between practical industrial medicine and theoretical hygiene, and unless he can with this realization apply theoretical medicine only so far as it is practical, or so far as he can make it of practical value, he will be unsuccessful. He must learn, too, that the respect that he commands from the industrial workers will depend solely on the quality of his work and on his personality.

I know of no other place than in an industrial plant where the medical graduate, essentially an individualistic practitioner, can acquire all this experience and knowledge. It is my opinion, therefore, that the industrial medical training should be partly theoretical and partly practical—that the theory be given in the classroom and that the practical be given in industrial plants. At least one half of the period of training should be spent actually in the plant, associated with the various departments with which the industrial medical work is so closely associated. He should understand the basic principles of employment man-

agement and personnel relations. He should become familiar with training and apprenticeship systems, with the view of there applying preventive medical work. He should know of the organization and conduct of continuation or skilled schools, and if he is thoughtful he will immediately see an opportunity for the practical application of medical supervisory work. He should understand trade tests and their relation to mental tests and psychology. He should understand job analyses, time study and shift systems, and their relation to his academic knowledge of fatigue. He should learn of accident prevention and safety-first organization and activities and consider their intimate relation to first aid medical work; physical examination, mentality, acuity of vision and such hygienic subjects as illumination, of which he has academic knowledge. He should acquire the necessary knowledge to analyze and thoroughly understand and deduct information from various labor force statistics, such as absenteeism, turnover, rates of pay as related to cost of living, housing, food—and hence health.

SOCIAL AND ECONOMIC ASPECTS

The student should understand the various systems of education of large groups and the basic problems presenting themselves in Americanization activities. He should know state insurance, group insurance, liability insurance and such actuary problems as present themselves in the mutual benefit associations and the pension plans. He should become acquainted with, understand, and enter into the local social and economic problems as such affect the industrial workers with whom he is concerned.

He should, in brief, have a sound medical education; ample practical experience in medical relief; a well rounded knowledge of preventive medicine; a thorough knowledge of vocational hygiene; an understanding of our present day social problems, and be able in the light of this knowledge to apply intensively to groups and in a practical manner the best that the medical profession has to offer to society.

ABSTRACT OF DISCUSSION

DR. J. W. SCHERESCHEWSKY, Washington, D. C.: The industrial physician has it in his power to influence enormously the health of a considerable portion of the community in which he is located. Many industrial communities have defective sanitary conditions which make the question of public health a problem of great difficulty. But industries are beginning to recognize more and more the dividends from keeping their men 100 per cent. well all the time. Not only that good business, not only is it of value locally, but it is reflected in national prosperity and national productivity. The prosperity of the country, of the state or of the city rests on the productivity and activity of its man power, and the ability of its man power to produce rests on health. We must recognize this new group of industrial physicians who are endeavoring to carry on this type of work as powerful agents in the development of public health. I am sorry that the establishment of departments of industrial hygiene has been neglected in our municipalities. I know of only one city, among the first class cities, that has created such a department. The general tendency has been to leave industries pretty much to themselves, and any definite scheme of correlating the work of preservation of health in industrial plants with that of the city health department is very slow in being developed. The industrial physician forms the link by which city health departments may be coupled with the industries. If they can be linked up they will be able together to make great progress in a general health movement. The

industrial physician will form the means by which industrial corporations themselves may be made to take an active interest in the sanitation of their own communities. The general attitude on the part of industrial units is pretty much as follows: We never mix in local politics because we want to be free from the suspicion of being connected with politics in order to advance our own purposes. As a matter of fact, that is a very short-sighted policy for industrial corporations to take, because most of them are large taxpayers, and they are more intimately concerned than anybody else in the health of the community. Therefore, the training of industrial physicians is one of great importance. Our great universities are giving their students an opportunity of entering a profession which gives a man a high degree of professional qualification, and places him in the situation of being able to influence for good the lives and health of a large number of our fellow citizens.

DR. EDWARD MARTIN, Philadelphia: The keynote of these most valuable papers and discussions today has been cooperation. We feel in Pennsylvania that the public health service means well, but its pull is not always with us, and sometimes it gives us little surprises. Public health service people are scattered around our state doing even they do not know what. No harm is done, as a rule, but we would like to work with the public health service, and we find it difficult sometimes to do so. The Red Cross is giving us splendid help and cooperation. Without it we could do little.

PARAPLEGIC MULTIPLE SCLEROSIS

ARCHIBALD CHURCH, M.D.

CHICAGO

When multiple insular sclerosis manifests itself by the classical signs of nystagmus, intention tremor and scanning speech, the diagnosis is self asserting. Such cases are extremely rare, and this triad of symptoms frequently is never fully developed or appears only after the lapse of years. Many cases persist clinically as optic atrophy, spastic paraplegia, primary lateral sclerosis, or vague organic and functional nervous maladies for long periods of time before the actual pathologic diagnosis and clinical differentiation are made. The frequent association of this condition with neurasthenia and as frequently with hysteria has long been recognized, but the organic process is too often overlooked under the protean subjective mask of the psychoneuroses.

A generation back, multiple sclerosis was considered an absolute rarity in this country, largely because only the classical picture was recognized. In some of its larvate and unusual forms it now furnishes a common clinical finding. On the point of possible increasing frequency of this disease I recently sent out a questionnaire to a limited number of American neurologists. All agree that they are seeing more cases than formerly, but all agree that they now recognize the formes frustes and aberrant types with a readiness that is somewhat of a recent acquisition. This is my own feeling in the matter, but I am convinced that the rank and file of the profession are not alive to the easy recognition of this dreadful disease. In the last three years in my private practice I find notes of thirty-two cases, in addition to which I might add an indefinite number seen in hospital practice. This group may perhaps be compared with the statistics of Uhthoff, who was able to collect 100 instances in all the hospitals and clinics of Berlin in six years. But that was a decade ago, and only the advanced cases apparently were listed. Some recent observations tending to establish the etiology of the disease on a nonsyphilitic spiro-

chetal basis make one hesitate to deny the possibility or even the probability of an increasing incidence.

Considering that the lesions of multiple sclerosis are extremely widespread in the brain and spinal cord, without symmetry or systematization, it is quite surprising that the original clinical conception should have prevailed so completely and persisted so long. In many cases, symptomatically at least, the brain seems quite exempt; in others the cord is not materially disturbed; but in all, sooner or later both are implicated.

A number of clinical types may be encountered: first, the generalized classical form, which is infrequent, except as a terminal phase of the fractional forms; second, the cerebellar type, a rare early manifestation of the disease which tends to become full fledged rather rapidly; third, the optic atrophy type, which I believe is not uncommon and which only slowly eventuates into the generalized condition; fourth, the paraplegic or lateral sclerotic type, which appears to be the most common of all and which very slowly takes on the features of upper level and cerebral involvement, and fifth, a very rare monoplegic type.

I have no intention of drawing hard and fast lines, for they are far from justified in a disease the lesions of which are as diffuse and as uncertain as a shotgun pattern. However beginning, all types tend to eventuate in the fuller picture of the old description, and case records show the remarkable variations presented by cases at various times. To this observation must be added the tendency of the disease to advance in waves or crops and to recede often to a marked, but never, I believe, to an absolute degree. These clinical fluctuations are pregnant sources of false hope, and are particularly trying to the judicial mind attempting an evaluation of therapeutic effort.

While I desire to call immediate attention to the paraplegic and spastic form, it must be said that some degree of spasticity is the rule in all cases. This clinical type commonly begins with a weakness or clumsiness in one leg or foot. Patients not rarely describe a flapping of the foot in walking, or their friends call their attention to an irregularity in gait. This may improve or seem quite to recede after being present for weeks or months. Not infrequently it leads to stumbling or rather severe falls, and I have had patients who gained a reputation for falling in an unexpected and, to them, unusual fashion, for several years before other disability led to definite investigation.

Contrary to early descriptions, sensory disturbances both subjective and objective in character are not at all infrequent in this type of multiple sclerosis. Complaints of heaviness, numbness, coldness, and very rarely of more painful paresthesias have been encountered. I have actually demonstrated objectively a certain degree of coldness in one leg as compared with the other in two patients who complained of it, and suppose it must have depended on local circulatory disturbance, though no vascular inequalities could be demonstrated by manometer or detected by palpation.

Hypesthesia and girdling sensations of segment level distribution of very definite and persistent character have more than once given rise, in conjunction with other paraplegic features, to a diagnosis of pressure on the cord. Elsberg operated on one such patient, expecting to find a cord tumor, and I have had the same experience. Needless to say, the upper level symptoms were absent at the time, but in my

case gradually developed to a complete and illuminating degree.

Among the signs of the disease, when affecting mainly or only the lower extremities, are the pathologic reflexes—ankle clonus, Babinski's toe sign, intensified knee jerks, and last and most important of all, one-sided, partial or complete abolition of the umbilical reflex. The complete superficial abdominal reflex has been present in only one of my cases, and it may later disappear. With the absence of superficial abdominal reflexes, the deeper muscular reactions brought out by the percussion hammer are retained and often apparently increased, in parallel with other muscle and tendon responses.

An interesting and instructive observation is furnished by the lack of uniformity with which the reflexes are modified on the two sides. I have seen the abdominal reflex abolished on one side only, and in one case obtained from one lower quadrant of the abdominal area alone. I have seen ankle clonus on both sides disappear first on one side and, after a year, gradually on the other; but a Babinski once established seems to be persistent. Some patients give no toe movements of any kind from plantar stimulation, a feature emphasized years ago by Buzzard, who thought he saw in it a warning against a too ready diagnosis of hysteria.

The sphincter control in the late stages is not rarely weakened, and actual incontinence may occur. The gait shows all modifications of spastic, paraparetic and incoordinate conditions. Ready fatigue after a short walk, quickly yielding to a few minutes' rest, reminds one of intermittent claudication, but of course lacks the arterial factor.

To the lower level symptoms of the paraplegic type there are commonly added some of the cephalic manifestations of cerebral participation. Squints, double vision, marginal optic atrophy, irregularities of the visual field, cerebellar symptoms, intention tremor, speech defects, and even mental peculiarities, are some or all, in slight or marked degree, sooner or later observed.

The condition, therefore, as in all other manifestations of multiple sclerosis, becomes progressively worse, and complete disability the ultima. Fortunately, the patients suffer little, aside from the growing feebleness and helplessness, to which they progressively adjust themselves, and the disease does not in itself appear to be fatal.

The treatment of multiple sclerosis is a frequent source of disappointment. The iodids, mercury and arsenic have at times had strong supporters. Nonne and other European clinicians have given importance to Merck's fibrolysin, which I have tried very faithfully without in the end being able to share their favorable point of view. I am hopeful that a new era of therapeutic success may be shortly attained if the spirochetal origin of the disease is firmly determined and effective spirocheticidal remedies are discovered.

The contention of spirochetal origin started three years ago with Kuhn and Steiner¹ who, after injecting guinea-pigs and rabbits with the blood and serum of patients suffering from multiple sclerosis, found the spirochetes in some of the rabbits. These animals had presented motor symptoms suggestive of the human clinical manifestations. The spirochetes did not resemble those of syphilis, but rather the organism

1. Kuhn and Steiner: *Med. Klin.* 13: 1007, 1917.

found in hemorrhagic icterus. They were spiral, often with a refracting terminal point, variable in form, and either extremity sometimes provided with a hairlike process. In 1918, Siemerling² found several similar spirochetes in the brain of a multiple sclerosis patient two hours after death. The next year Marinesco³ was able by intracerebral inoculations of spinal fluid from a patient to induce significant symptoms in guinea-pigs, and recovered spirochetes of the Kuhn-Steiner type from fluid taken from the fourth ventricle.

I have had several spinal fluids carefully searched for spirochetes without success, but have not yet repeated the animal experiments.

When we recall the difficulty of eradicating the syphilitic organism when seated in the parenchymatous nervous structures, a chill is given to enthusiastic expectations in regard to the manageability of this form of spirochete, even if it should be proved the essential cause of multiple sclerosis.

I have treated several cases with intensive courses of mercury, arsphenamin, neo-arsphenamin and the various iodids without being able to report any modification of the clinical course of the disease. As in syphilis, we must perhaps hope for better therapeutic agents.

1117 Marshall Field Annex.

THE TOXICITY OF NITROBENZENE

WITH REPORT OF A FATAL CASE

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Recently in *THE JOURNAL* there appeared three articles on the subject of acute nitrobenzene poisoning. The first, by Stifel,¹ referred to sixteen cases of nitrobenzene poisoning among army officers at Jacksonville, Fla., caused by a shoe dye. All men had recently worn freshly dyed shoes or puttees. The chief symptoms were marked cyanosis, headache, vertigo and tinnitus. Complete recovery occurred within from twelve to twenty-four hours in all cases. The second paper, by Scott and Hanzlik,² records some cases of nitrobenzene poisoning, with much the same symptoms as in the first article, due to the imbibition of "denatured" alcohol; here, too, no fatalities occurred. As a result of their observations and those of Stifel, these authors express the opinion that "this 'denaturizing' agent is relatively harmless." More recently, Sanders³ reported a case of nitrobenzene poisoning with cyanosis, a rapid recovery being made.

That nitrobenzene may be quite toxic for man has been attested by many German writers, and by Cushny,⁴ who states that it may cause "a grayish-blue cyanotic color of the skin and visible mucous membranes, often with nausea, vomiting, great muscular weakness, marked dyspnea, delirium and some convulsive movements of the face and jaws, less frequently of the whole body. Total unconsciousness and coma

are followed by arrest of the respiration." According to Cushny, the symptoms are due mainly to blood changes (deformation and destruction of red cells; formation of methemoglobin and nitrobenzene hemoglobin) and to a central nervous action—stimulation followed by depression.

Fatal cases are not unknown, among which may be mentioned that reported by Blythe (quoted by Stifel) of a man who died following the accidental spilling of nitrobenzene on his clothing.

As may be surmised, most cases of acute poisoning from this substance, as recorded in the literature, were due to its absorption through the skin or pulmonary alveoli (inhalation), as in Blythe's case of fatal poisoning. In Scott and Hanzlik's cases it took place presumably from the gastro-intestinal tract, which, it may be argued, had some mitigating influence on its fatal toxic properties.

REPORT OF CASE

The case reported herewith resulted fatally, and was apparently uncomplicated nitrobenzene poisoning in which the poison was swallowed.

In 1917, a middle-aged white man was brought by patrol into the receiving ward of the University Hospital, Philadelphia, in coma. A striking feature was the marked ashen-gray cyanosis, which was more intense than that usually seen. There was a very strong odor of nitrobenzene (shoe polish) about the patient, especially in his mouth. Respirations were about ten a minute. Gastric lavage yielded a fluid of similar odor in which nitrobenzene was detected by chemical means. In spite of vigorous stimulation and the use of the pulmotor with attached oxygen tank, the patient died about forty-five minutes after entering the hospital. He did not regain consciousness. Death was apparently respiratory—the breathing becoming less and less frequent. No spectroscopic examination of the blood for methemoglobin or nitrobenzene hemoglobin was made. It was never learned in what medium the poison was taken.

COMMENT

The details of this case are necessarily meager because of its emergency character—the patient not having been "admitted" and therefore no history written. The facts are simply culled from memory. It is possible that some other poison was taken simultaneously. I simply wish to report it as a possible case of uncomplicated nitrobenzene poisoning with fatality, in which the substance was apparently swallowed.

CONCLUSION

Nitrobenzene may be more toxic than is indicated by Scott and Hanzlik.

University Infirmary.

The Study of Surgical Diseases.—There can be little question that the diseases spoken of as surgical (because operative technic is employed in treating them) are of such great importance and the technic of their therapy has become so specialized, that one or more clinics of the department should be devoted to the study of these diseases. This does not mean, however, that the methods employed in studying these diseases differ from those used in studying any other group of diseases. Exophthalmic goiter is the same disease whether we treat it by removal of the thyroid or by rest and drugs. Whether we call the professor who studies especially those diseases in which the chief therapeutic procedures are operative, a professor of surgery or a professor of medicine, is unimportant so far as the principle is concerned. His methods should be those of the professor of medicine, and the surgical clinic should be exactly like the medical clinic with the addition of facilities for employing complicated operative procedures.—Rufus Cole, *Science*, April 2, 1920.

2. Siemerling: Berl. klin. Wehnschr., 1919, p. 273.

3. Marinesco, G.: Rev. neurol. 34: 481 (June) 1919.

1. Stifel, R. E.: Methemoglobinemia Due to Poisoning by Shoe-Dye, J. A. M. A. 72: 395 (Feb. 8) 1919.

2. Scott, R. W., and Hanzlik, J. P.: Poisoning by Alcohol "Denatured" with Nitrobenzene, J. A. M. A. 74: 1000 (April 10) 1920.

3. Sanders, F. G.: Nitrobenzene Poisoning with Cyanosis, J. A. M. A. 74: 1518 (May 29) 1920.

4. Cushny, A. R.: A Text-Book of Pharmacology and Therapeutics, Edition 5, Philadelphia, Lea & Febiger, 1910.

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SATURDAY, JUNE 12, 1920

CARDINAL FACTORS IN PULMONARY EDEMA

The menace of the poisonous war gases is no longer with us. Perhaps the suffering and deaths which these frightful agencies of destruction caused will not have been entirely in vain if the experience gained in the extensive study of war gas poisoning can be utilized with advantage in the relief of disease among mankind. The consensus among the investigators who concerned themselves with the pathology of the acute effects of the commonest war gases is that the prominent feature is a typical pulmonary edema. This is also a distressing symptom encountered in every-day clinical experience; hence whatever new may be learned about it has more than merely war-time application.

In a lecture before the Harvey Society last year, Underhill¹ directed attention to the circulatory conditions attending the formation of the pulmonary edema due to lethal war gases. An early period of blood dilution is followed by an interval during which the blood rapidly becomes concentrated to a point far beyond the normal value, and remains near this level for some time. Eyster showed that at this stage the heart may be markedly decreased in size, a result which would presumably tend toward decreased efficiency of this organ and lead to an inadequate circulation. The striking loss of fluid from the blood by transfusion into the tissue spaces and into the air passages of the lung may lead to reduction in blood volume, hemoglobin concentration and decrease in heart size to somewhat extreme degree, as has lately been reemphasized by Meek and Eyster² of the University of Wisconsin. They agree with Underhill that death ultimately results from decreased oxygenation of the pulmonary blood and from oxygen starvation of the tissues due to decreased blood volume, the latter probably being the more important.

Impaired respiratory function of the blood owing to deficiency in corpuscles and oxygen-carrying hemo-

globin is emphasized daily in medical practice. The possibility of an impairment with the same outcome but due to decrease of the circulating medium as a whole has not been so generally recognized. Underhill has proposed that as a fundamental principle in the therapeutics of such edemas the blood concentration should be diminished or prevented, if possible. This may be accomplished experimentally by infusion of sodium chlorid solution, by intraperitoneal injections of the latter, and even by oral administration of water. The lack of oxygen due to a reduced circulation further impaired by the increased viscosity of the concentrated blood can be remedied in part by administration of oxygen. This is, of course, a palliative, as it cannot reduce the edema or restore alveolar epithelium if the latter has been damaged. It may serve, however, to help avert tissue asphyxiation until the fundamental defect of decreased blood volume can be remedied. It will be interesting and important to learn in what conditions this more recently recognized blood concentration occurs in pulmonary edema during times of peace. The possibilities of therapy suggested for the alleviation of suffering from the edema due to war gases can then perhaps find application.

THE SPHINCTER OF THE COMMON BILE DUCT

The opening of the common bile duct into the duodenum is ordinarily closed by a sphincter. On this account the bile, which is formed more or less continuously by the liver, discharges into the bowel only at periods when the muscle closing the orifice of the duct is relaxed or inhibited. In the intervals between the periodic passage of bile into the intestine, the fluid secreted is stored away in a quiescent gallbladder. Meltzer¹ has compared the mechanism of the gallbladder with that of the urinary bladder. In the latter the collection and evacuation of the urine is controlled by the antagonistic activities of two muscles of the bladder. During the accumulation of urine in the bladder, the detrusor muscle is relaxed and the sphincter is tonically contracted; whereas during micturition, the reverse takes place: the detrusor contracts and simultaneously the tonus of the sphincter at the neck of the bladder becomes inhibited. Comparably, according to Meltzer, the muscle fibers of the gallbladder and those about the papilla of Vater are antagonists. During the absence of flow into the bowel, the muscle fibers in the papilla are contracted and those of the gallbladder are inhibited; during the discharge, the gallbladder contracts and Oddi's muscle is relaxed; the bile has then no other way out but into the duodenum.

If this conception of the functions of the bile-storing organ leading to periodic discharge of bile into the

1. Underhill, F. P.: The Pathology and Experimental Treatment of Poisoning with the Lethal War Gases, *Arch. Int. Med.* **23**: 753 (June) 1919.

2. Meek, W. J., and Eyster, J. A. E.: Experiments on the Pathological Physiology of Acute Phosgene Poisoning, *Am. J. Physiol.* **51**: 303 (March) 1920.

1. Meltzer, S. J.: The Disturbance of the Law of Contrary Innervation as a Pathogenetic Factor in the Diseases of the Bile Ducts and the Gallbladder, *Am. J. M. Sc.* **153**: 469 (April) 1917.

duodenum is correct, it is obvious that failure of appropriate action in any part or disturbance in the nice correlations involved may lead to pathologic consequences. The occurrence of stasis through imperfect behavior of the sphincter closing the common bile duct is at once suggested; and the mention of stagnation of the bile at once calls to mind secondary complications that may ultimately lead to mechanical obstruction in biliary flow.

In view of these considerations, it is surprising that so little attention has been paid to the physiology of the sphincter which Oddi² described, in 1887, as occurring at the termination of the common duct. Until recently, many clinicians have actually declined to attach any importance to the muscular structure to which we have referred. As recently as 1900 Naunyn,³ a recognized expert in the field of biliary pathology, regarded it as worth while to emphasize the significance of the choledochoduodenal sphincter in connection with the filling of the gallbladder, and the possible dangers of an exaggerated tonus in the musculature. Recently, Mann⁴ of the Mayo Clinic has shown, what might perhaps be suspected from physiologic reasoning, that the tonus of the sphincter at the duodenal end of the common bile duct is decidedly more vigorous in species that have a gallbladder than in animals that normally lack this organ. In the latter species, the sphincter would not withstand pressure of more than slight intensity at the most. While anatomic studies have shown that a sphincter is present in each species lacking a gallbladder, the sphincter does not seem to function appreciably. Obviously, when there is lack of a gallbladder for storage of bile, stasis produced by a resistant sphincter might soon induce serious difficulties.

A study which Reach⁵ of Vienna has lately published shows anew that the sphincter of the common bile duct can be influenced reflexly in various ways. According to him, filling the stomach tends to maintain a closed duct orifice; as the stomach empties, the sphincter relaxes and the bile is discharged. Whatever inhibits this sphincter and empties the bile passages must reduce the pressure in the gallbladder, a fact of importance when it is desired to facilitate the healing of fistulous openings in this organ. According to Reach, drugs also can act on the tonicity of the sphincter; some, like papaverin and scopolamin, inhibiting, while others, such as morphin, are able to stimulate the muscle to close the orifice. These tentative pharmacologic findings deserve to be elaborated to the point at which their possible application in human therapy can be ascertained; for occasional

instances undoubtedly arise in which failure of relaxation of the sphincter of the common duct, particularly during contraction of the gallbladder, needs to be counteracted.

THE RÔLE OF LYMPHATICS IN PNEUMONIC INFECTION OF THE LUNGS

In a recent issue,¹ evidence for the bronchiogenic character of the lobar pneumonia produced experimentally in monkeys by Blake and Cecil was reviewed. It is apparent from their studies that the respiratory tract, rather than bacterial invasion of the blood, is the primary factor in the genesis of the disease so closely related to the comparable malady in man. When the lining mucosa of the trachea is damaged and the protective mechanism of the respiratory tract is impaired, a portal of entry for micro-organisms associated with pneumonia is obviously afforded. This is undoubtedly what happens as a consequence of the inhalation of pulmonary irritating gases, as has been pointed out by Winternitz.²

Blake and Cecil³ produced their experimental results by intratracheal inoculation of the animals through needle puncture. They apparently assumed that no damage was produced by this procedure; hence the pneumonia seems to have started despite an unharmed and normally adequately protective mucosa. Winternitz, Smith and Robinson⁴ of the Yale School of Medicine have pointed out, however, that in such inoculations the needle, though sterile on entry, is unquestionably infected when it is withdrawn, and consequently a possible path of infection to the lung may be found elsewhere than through the lumen of the trachea.

In harmony with this assumption, the submucosa of the trachea and bronchi has been demonstrated by the New Haven investigators to furnish a pathway of infection to the lung. It contains a rich plexus of lymphatics prominent everywhere and devoid of valves. There is a continuity throughout this lymphatic system so that bacteria which once find their way into it can easily spread. Although it thus affords a direct pathway of infection to the lung, Winternitz and his colleagues allege that it may also serve as a protective mechanism against pulmonary infection; for the drainage of the submucosa of the trachea and bronchi is largely diverted as the lung is approached to the protecting regional lymph nodes.

The spread of infection through lymphatic channels is probably more common than has been appreciated by most clinicians. The investigations of recent years

2. Oddi: Arch. ital. de biol. 8, 1887.

3. Naunyn, B.: Die heutige Lehre der Cholelithiasis, Therap. d. Gegenw., 1900, No. 9.

4. Mann, F. C.: A Study of the Tonicity of the Sphincter at the Duodenal End of the Common Bile Duct, J. Lab. & Clin. Med. 5: 107 (Nov.) 1919.

5. Reach, F.: Der Schliessmuskel des Ductus choledochus in funktioneller Beziehung, Arch. f. exper. Path. u. Pharmacol. 85: 178 (Nov.) 1919.

1. Experimental Lobar Pneumonia, editorial, J. A. M. A. 74: 1168 (April 24) 1920.

2. Winternitz, M. C.: Experimental Studies on the Lesions Produced by Poisonous Gases, New Haven, Yale University Press, 1919.

3. Blake, F. G., and Cecil, R. L.: Studies on Experimental Pneumonia. I, Production of Pneumococcus Lobar Pneumonia in Monkeys, J. Exper. Med. 31: 403 (April) 1920; II, Pathology and Pathogenesis of Lobar Pneumonia in Monkeys, *ibid.*, p. 445.

4. Winternitz, M. C.; Smith, G. H., and Robinson, E. S.: An Unrecognized Pathway for Bacterial Invasion of the Respiratory Tract, Bull. Johns Hopkins Hosp. 31: 63 (March) 1920.

have shown that progressive pyelonephritis is by no means always, if indeed it is commonly, dependent on direct transference of the micro-organism backward along the urinary channels from the distal parts of the latter first invaded. The little recognized lymphatics of the urinary organs may serve in this case as the paths of bacterial advance independent of the urine in the ureters. A further analogy is seen in the streptococcus lymphangitis of the finger which sometimes follows a needle puncture.

FACTORS AFFECTING THE CONSERVATION OF PROTEIN IN THE BODY

Soon after the signing of the armistice, when the first reports of the food stringency and the resulting malnutrition of the population of the Central Empires reached this country, the statements were looked on by many as a continuation of propaganda intended to secure amelioration of peace terms. Subsequent investigations have, however, furnished a verification of the threatening conditions that still exist abroad. Thus, in a recent issue of *THE JOURNAL*,¹ an experienced observer wrote that of 4,500 medical men in Vienna at least 90 per cent. are working on half rations, and many are actually on the point of starvation. Major Mason² of the Sanitary Corps, U. S. Army, reviewing the situation, remarks that "for the first time in history the world at large faces a universal food shortage. Heretofore scarcity of food has been only local, the famines of India and Ireland being well-known examples, and in these cases it was always possible for other countries to get food to the lands of shortage. Today there seems reason to believe that in the whole world there is not all the food which could be consumed by all the people."

The undernourishment that has ensued abroad involves not only reduction of fat but also a loss of protein from the body. Restoration of adequate nutritive conditions will require renewal of the store of protein, that foodstuff which the war stringency has made the scarcest of all. Recently it has been asserted³ that the mineral metabolism of the body plays an important part in the intensity of the protein destruction, the contention being that potential acidity of the diet tends to increase, whereas a preponderance of base-forming food tends to curtail the protein breakdown.

If this assertion should prove true, its bearing on the nutrition of those restricted to minimal intakes of protein is obvious. Careful consideration of the acid-base relationships of the diet would then be desirable to assure a maximum conservation of bodily tissues

when the supply of protein is below the optimum. A reinvestigation of the question by Jansen⁴ in Friedrich Müller's clinic in Munich disposes of the assertion. He has found that even the addition of inorganic acid to a diet of low protein value does not alter the output of nitrogen in the urine. The fecal output may be slightly augmented, owing to the action of acid in provoking alimentary secretions; but, broadly speaking, under usual dietary conditions the acid or basic potentialities of the food are without practical significance in the maintenance of protein equilibrium. The partition of nitrogen in the urine, as indicated by greater or less participation of ammonia in its output, may be altered; not, however, the total metabolism. In times of stress, therefore, protein is best conserved by the liberal ingestion of carbohydrates, not by a readjustment of the acid-base balance of the diet. And this is what the classic students of nutrition have long taught.

Current Comment

ARCHIVES OF SURGERY

For a number of years the proposal to publish a high-class journal devoted to surgery has been before the Board of Trustees of the American Medical Association. The final decision to publish such a journal has been delayed from time to time, partly because of the war, and partly because some believed there was no real need for a surgical journal. But criticism has been advanced that American surgery is not developing symmetrically, that the technical side—operative surgery—has been highly developed at the expense of the investigative and philosophical sides, and that there is a real need for a journal to represent these phases of surgery as a science. The Board of Trustees finally decided to publish such a journal, and the action of the Trustees was approved by the House of Delegates at the New Orleans meeting. At the outset it will be issued bimonthly. Papers dealing with experimental work will be accepted and space allowed for protocols which have a direct bearing on, or an explanatory relation to, the problem considered. Articles will be welcomed which deal with clinical research in the hope of stimulating more careful and closer clinical examination. The value of laboratory methods has been rightly emphasized, but unfortunately in many instances to such an extent that the ability and desire to make close clinical observations have been lessened or lost. The value of monographic publication cannot be denied, and whenever a monograph is of sufficient value an entire number, if necessary, will be given to it. In a word, this new journal—*Archives of Surgery*—will be devoted to the advancement of American surgery, in the same way as the other special journals published by the American Medical Association are devoted to the advancement of the specialties they represent: Internal

1. Wilbur, R. L.: Conditions in Vienna, Correspondence, J. A. M. A. 74: 967 (April 3) 1920.

2. Mason, C. C.: German Nutrition, 1914-1919, Bull. Johns Hopkins Hosp. 31: 66 (March) 1920.

3. Berg, R.: Die Nähr- und Genussmittel, Dresden, 1913; Die Bewertung der Säureverteilung im Harn. München, med. Wchnschr., 1914, No. 23. Röse, C., and Berg, R.: Ueber die Abhängigkeit des Eiweissbedarfs vom Mineralstoffwechsel, ibid., 1918, No. 37.

4. Jansen, W. H.: Zur Frage der Abhängigkeit des Eiweissstoffwechsels vom Säuren-Basengehalt der Nahrung, Ztschr. f. klin. Med. 88: 221, 1919.

Medicine, Diseases of Children, Neurology and Psychiatry, and Dermatology and Syphilology. The personnel of the editorial board consists of Dr. Hugh Cabot, professor of surgery, University of Michigan, Ann Arbor; Dr. Thomas Cullen, professor of gynecology, Johns Hopkins University, Baltimore, Maryland; Dr. William Darrach, professor of surgery, Columbia University College of Physicians and Surgeons, New York City; Dr. Evarts A. Graham, professor of surgery, Washington University, St. Louis, Missouri; Dr. Dean D. Lewis, professor of surgery, Rush Medical College, Chicago, and Dr. W. J. Mayo, the Mayo Clinic, Rochester, Minn. The positions in American surgery of the group of men who have accepted the responsibility for the editorial standard of the new journal will indicate its scientific scope and character. Coming from the press of the American Medical Association it is unnecessary to say that it will be, mechanically and typographically, equal to any similar publication in any language. This will especially apply to the illustrations: drawings, photomicrographs, half-tones, in color or in black and white, will be liberally used. The first number will appear, July 1.¹

STOMACH GASES AND AEROPHAGY

The occurrence of gases in abnormal quantities in the gastro-intestinal tract is familiar through the frequent clinical observation of meteorism and tympanites. Most of the available analyses of intestinal gases indicate that nitrogen, methane, hydrogen and carbon dioxid may be present, while hydrogen sulphid and oxygen are sometimes added to the list. It has generally been assumed that the nitrogen and oxygen represent residual parts of atmospheric air swallowed with food; carbon dioxid may be derived from the blood, whereas the other gases mentioned are products of fermentative changes induced by micro-organisms always present in the alimentary canal. In aerophagy, or the increased swallowing of air, sometimes occurring as a nervous performance in hysterical persons, part of the gases may be eructated again, though frequently some of the air passes farther into the bowel. The clinician regards the presence of the gases in the intestine as an undesirable symptom that needs therapeutic attention whenever the local accumulations cannot escape properly and tend to produce distention. Aside from this aspect of the subject, little consideration has been given to the occurrence of gases in the stomach.² By studying the content of carbon dioxid in the stomach gases of air-swallowing infants, Ylppö³ came to the conclusion that the carbon dioxid at least was derived by diffusion from the blood. Further investigations on adults have demonstrated that various gases, whether represented by atmospheric air, pure

oxygen or carbon dioxid, when introduced even in considerable volume into the stomach, soon come into equilibrium with the blood gases as represented in the alveolar air. Thus, at the end of an hour the percentage of carbon dioxid and of oxygen in the stomach gases and alveolar air are usually almost identical. When air has been introduced into the stomach, flatulence will result because of the residual nitrogen. This is not the case when carbon dioxid is introduced; and with oxygen it happens only when the intake is very large—more than 1,000 c.c. As the gases have thus been shown to behave toward the alimentary wall in accord with physical laws of diffusion, it has been estimated that not negligible amounts of oxygen might be introduced into the body by way of the gastro-intestinal tract under circumstances in which pulmonary respiration is severely impaired by disease. At best, however, the total quantity would represent only a small fraction of the day's need of the indispensable element.

A PEDIATRICIAN OF THE SECOND CENTURY

According to a recent publication,¹ during the reign of Trajan, between 110 and 130 A. D., Rome was the home of the greatest obstetrician and pediatrician of antiquity—Soranus of Ephesus. At the eleventh International Congress in Rome, 1895, I. V. Troitski, writing in Russian, compared in parallel columns the practices of Soranus with the teachings of authorities of his own time. The survey of what Soranus knew is again an appeal for the study of medical history, for if we exclude innovations resulting from our knowledge of antiseptics, the practical advice which he gave might well serve for modern use. His instructions as to breast nursing and the care of the wetnurse are delightfully worded. "The essential mental qualities of a good nurse," he says, "are patience, common sense, good nature or gentleness and neatness." These essential qualities have not changed. Again, "Feeding at irregular intervals and often during the day, and especially during the night, may be the cause of sickness in the infant." Every pediatrician will confirm this view. His suggestions as to the causes of crying, and how to differentiate between the various causes, appear much the same as those in our modern "baby books." None of the earlier writers on medical subjects so well appreciated, as did Soranus, the importance of feeding in the care of the infant. He made one suggestion typical of the customs of his time, namely, that wetnurses be employed rather than having the mother nurse her own infant. This advice was based on the theory that the mother might be physically unable, after parturition, to nurse the infant, and no doubt also on the fact that mothers, in his time, were notoriously dissipated. Parenthetically, it may be remarked that Soranus seems to have had a wealthy clientele.

1. See announcement, advertising page 10, this issue.

2. A few data will be found in: Hoppe-Seyler: *Zur Kenntnis der Magengärung mit besonderer Berücksichtigung der Magengase*, Deutsch. Arch. f. klin. Med. **50**: 83, 1892. Leo: *Ueber den gasförmigen Mageninhalt bei Kindern im Säuglingsalter*, Ztschr. f. klin. Med. **41**: 108, 1900. Loening: *Das Verhalten der Kohlensäure im Magen*, Ztschr. f. klin. Med. **56**: 26, 1905. Quest: *Untersuchungen über Darmgase bei Säuglingen mit Tympanites*, Jahrb. f. Kinderh. **59**: 293, 1904.

3. Ylppö, A.: *Ueber Magenatmung beim Menschen*, Biochem. Ztschr. **75**: 273 (Jan.) 1917.

1. Foote, J. A.: *An Infant Hygiene Campaign of the Second Century*, Tr. Am. Child Hygiene Soc., 1919, p. 129.

Dust and Health.—Dust from abrasive materials does not render a worker unconscious or cause him visible distress, but it accomplishes its harmful effects without unduly alarming or exciting any one.—P. M. Holmes, *Pub. Health Rep.*

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Personal.—Dr. Milton Jacobs of the staff of the Elgin State Hospital and who has also had charge of the examination of subnormal children of Elgin schools has resigned and will enter general practice in Elgin.—Dr. Arthur F. Stotts, Galesburg, who has been under treatment in a hospital since May 8, has returned home much improved.

Chicago

Surgeons Elect Officers.—At the annual meeting of the Chicago Surgical Society, June 4, Dr. William Fuller was elected president; Dr. Vernon David, vice president; Dr. Frederick G. Dyas, secretary, and Dr. Charles F. Sawyer, treasurer.

Legion Post Dinner.—Chicago Medical Post No. 216, American Legion, announces an informal round-up dinner to be given June 23, at 6:30 p. m., in the gold room of the Congress Hotel, at which Dr. Joseph B. Miller will officiate as toastmaster.

Physicians Ask Health Plan.—The Chicago Community Trust is asked to undertake a city plan of health to include all phases of public health and provision for the care of the sick and physically disabled by resolutions adopted at the meeting of physicians and health workers at the Chicago Club, May 28. Among those who spoke on this occasion were Drs. James B. Herrick, Edwin W. Ryerson, Harry E. Mock, E. O. Jordan, Joseph B. DeLee and John Ritter.

KENTUCKY

Alumni Clinic.—At the week of clinics held in honor of the alumni of the medical department of the University of Louisville, from May 31 to June 5, there were 285 members registered, and 376 attended the banquet the evening prior to the commencement exercises, at which a class of twenty-nine received diplomas. On the first evening, a joint meeting of the Jefferson County Medical Society and the alumni association was held, at which Dr. Frank B. Wynn, Indianapolis, delivered an address on "The Respiratory Sequelae of Influenza, a Clinico-Pathologic Discussion."

MARYLAND

Memorial at Fort McHenry.—Impressive Memorial Day exercises at Fort McHenry were held at the base of the old flag staff in the south fort on May 31. The ceremony closed with the lowering of the colors and the sounding of "taps." In addition to being a tribute to the soldier dead, the "taps" also sounded the passing of U. S. Army General Hospital No. 2, whose official existence ceased on that day. Dr. Thomas R. Payne, Corbett, will be superintendent under the new régime. Major James E. Baylis, M. C., U. S. Army, will continue as commanding officer.

Health Conference.—At the invitation of Dr. John S. Fulton, head of the state department of health, health officers throughout the state met at the Medical and Chirurgical Faculty Building, Baltimore, for a two-day convention, June 7 and 8. Dr. William H. Welch; Dr. Hugh H. Young; Miss Nellie F. Oxley, division director of public health nursing, Potomac division of the Red Cross; Dr. Paul B. Johnson, director of the department of health service, Potomac division of the Red Cross; Dr. William A. Bridges, medical representative, Maryland Tuberculosis Association; Dr. John M. T. Finney; Prof. Edward F. Webb and William J. Holloway, state superintendent of rural schools, were among the speakers.

Personal.—A portrait of Dr. William H. Welch, president of the University Club of Baltimore, was presented to the club at its last monthly meeting.—Dr. John M. T. Finney, Johns Hopkins University, was decorated with the insignia of an officer of the French Legion of Honor on behalf of the French government by the French military attaché in Washington, D. C., June 3. The decoration was given in recognition of Dr. Finney's ministrations to French soldiers in American hospitals overseas during the war.—Surg. Gen.

Hugh S. Cumming, U. S. Public Health Service, was recently in Baltimore, accompanied by Drs. Claude H. Lavinder, William G. Stimpson and Richard H. Creel; and later with the mayor, Drs. John M. T. Finney, C. Hampson Jones, city health officer, and Winford H. Smith, superintendent of the Johns Hopkins Hospital, visited Fort McHenry to make a survey of the hospital facilities. The city authorities want a portion of the equipment at the fort for municipal hospital purposes, temporarily, if it cannot be arranged as a permanent thing, and the survey was made with this in view.

MASSACHUSETTS

Centenary of Medical Missions.—The centenary of the founding of medical missions was celebrated, May 9, at the all-student rally held in the new Old South Church, Boston, when President Ellen W. Pendleton of Wellesly College, Cyril Haas, Frances J. Heath, Cora J. Patton and Mrs. Henry W. Peabody told the story of medical missions from the time, in 1819, when Rev. John Scudder and his wife sailed from America to begin their work in Ceylon.

Personal.—Dr. Benjamin White has been appointed director of the division of biologic laboratories of the Massachusetts State Department of Health, succeeding Dr. Milton J. Rosenau. Dr. White has also been appointed lecturer in immunology in the Massachusetts College of Pharmacy, and assistant in the department of preventive medicine and hygiene at Harvard University Medical School.—Dr. Lawson G. Lowrey, chief medical officer of the Boston Psychopathic Hospital for two years, has been appointed assistant professor in the psychopathic department of the University of Iowa, Iowa City.

MISSOURI

Eye, Ear, Nose and Throat Section Organized.—An eye, ear, nose and throat section of the Buchanan County Medical Society was organized at St. Joseph, March 10. Dr. Pierre I. Leonard was elected chairman, and William L. Kenney, secretary of the section.

Personal.—Dr. and Mrs. Clinton B. Ellis, Kansas City, have sailed for Europe.—Dr. James W. Bruton, Ozark, has been appointed deputy health commissioner for Christian County.—Dr. L. Paul Forgrave, St. Joseph, has been elected a member of the board of health of St. Joseph.

NEW JERSEY

Illegal Practitioners Fined.—A report states that John W. Glover of Bridgeton, who claimed to be a practitioner of the exanthematic method of cure of all chronic diseases, pleaded guilty to the charge of practicing medicine without a license and was fined \$200.—Paul Schmidt of Newark was also found guilty of practicing medicine without a license and paid a fine of \$200.

NEW YORK

Personal.—Dr. Clarence E. Cobb, Alfred, has been appointed superintendent of the Steuben County Tuberculosis Hospital, succeeding Dr. Elliott I. Dorn, Cassadaga.—Dr. Manna Mary Rohn, health officer of the Lake George Health District, is carrying on a complete sanitary survey of the shores of Lake George.

New Publication.—The state department of health began in March the publication of a monthly periodical known as the *Monthly Vital Statistics Review*, which is edited by Dr. Otto I. Eichel, director of the division of vital statistics of the board. The periodical is an attempt at a much more elaborate presentation of current official vital statistics than has heretofore been tried in this country. It presents a comment on the trend of vitality in the state, with tables showing influenza and pneumonia deaths, and death rates; deaths from all causes; general death rates given by months compared with previous years; infant mortality from 1913 to 1920; deaths of infants under 1 year of age; deaths and death rates from pulmonary tuberculosis, 1913-1920, and abstracts from the Weekly Health Index of the United States Bureau of Census.

New York City

Personal.—Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, will represent the United States at the first formal meeting of the medical advisory board of the League of Red Cross Societies at Geneva, July 5.

New Brooklyn Hospital Dedicated.—The Brownsville and East New York Hospital, located at East Ninety-Eighth Street and Rockaway Park, which was erected and equipped

at a cost of about \$325,000, has been dedicated and is ready to receive patients.

Sanitary Code Affecting Drugs Amended.—Subdivision 2 of Section 116 of the Sanitary Code has been amended so that any drug is regarded as adulterated "if its strength or purity falls below, or its strength is in excess of, the professed standard under which it is sold."

Physician Fined.—Dr. Arthur H. Stern, Manhattan, arrested in a raid, July 19, 1919, by revenue agents, charged with violation of the Harrison antidrug act, is said to have pleaded guilty before Judge Angus M. Hand, May 26, and to have been fined \$5,000, and committed to the custody of the United States marshal for one day.

Registration of Patent and Proprietary Medicines.—Owing to enforcement of Section 117 of the Sanitary Code, the Division of Patent and Proprietary Medicines of the Bureau of Food and Drugs of the New York City Department of Health, has recently had a large number of patent and proprietary preparations submitted for registration, and a number of preparations have been withdrawn from sale, as the claims made for them were exaggerated and false and the accompanying statements misleading. During the influenza epidemic, pharmaceutical manufacturers took advantage of the anxious state of the public and advertised various products for the prevention and cure of the disease. These advertisements in the daily papers and elsewhere were ordered discontinued under pain of prosecution by the health department, and the orders have been promptly obeyed.

Bulletin of the New York Association for Medical Education.—This organization, incorporated under the laws of New York State in August, 1919, for the purpose of expanding medical education for students and graduates of medicine has issued its first bulletin, which consists of a report of the subcommittee on ophthalmology and oto-laryngology, of which Dr. James F. McKernon is chairman, and Drs. Arnold Knapp, Cornelius G. Coakley and Frederick Whiting are members. This report formulates the requirements necessary to educate and train physicians who desire to become specialists in the department of ophthalmology, rhinolaryngology and otology. All the details of a standard course in this department and also of graduate courses of instruction are outlined and are now available. Those interested in these courses can obtain further information at the headquarters of the association, 17 West Forty-Third Street, New York.

NORTH CAROLINA

Hospital to Be Built.—The Crowell Urological Clinic, Charlotte, has purchased a lot adjoining the Charlotte Sanatorium on which to build an office and hospital building. The hospital portion of the building will be divided into the urologic and dermatologic departments of the sanatorium.

OHIO

Illegal Practitioner Fined.—A report from Ohio states that on May 21 George Gueth, Sidney, pleaded guilty to practicing medicine without a license and was fined \$25 and costs.

Health Commissioners Elect Officers.—At the meeting of health commissioners of the state held in Columbus, May 12 to 14, the following officers were elected to serve on the commission to enforce milk and dairy regulations for all cities and counties throughout the state: president, Dr. William T. Peters, Cincinnati; vice presidents, Drs. John A. Kappelman, Canton, Oral J. Tatje, Portsmouth, and Harley J. Powell, Bowling Green, and secretary-treasurer, Dr. Rush R. Richison, Springfield.

PENNSYLVANIA

Philadelphia

Personal.—Dr. William W. Keen has been elected an honorary fellow of the Royal Society of Medicine, London, and of the American Surgical Association.—Dr. Edward T. Reichert, professor of physiology in the Medical School of the University of Pennsylvania, has retired from active service.—Dr. and Mrs. James A. Irwin sailed for France, June 12.

University Graduate School Budget.—Trustees of the University of Pennsylvania have decided to take steps, further to equip and advance the work of the university graduate school of medicine. At the last meeting of the board of trustees, a budget of \$158,097.37 was approved to meet such

expenses as are not provided in the regular income of the graduate school of medicine.

Phipps Institute to Continue.—Dr. Charles J. Hatfield, executive director of the Henry Phipp Institute, announced on May 29 that the result of the recent drive for funds made by that institution is such as to assure the continuation of the institution until July 1, 1921. This is made possible by the liberality of the family of Henry Phipps who have made available the interest on the \$500,000 recently promised by them for the endowment fund. The sum of money contributed in Philadelphia is approximately \$45,000 to date.

Jefferson Alumni Banquet.—The annual banquet of the alumni association of Jefferson Medical College was held in the ballroom of the Bellevue-Stratford Hotel, June 4, with 300 present. Dr. S. Solis Cohen, president of the association, presided, and addresses were made by the following men: Dr. Albert E. Austin of Connecticut; Drs. F. X. Dercum, Franklin Spencer Edmonds, William Potter, president of the board of trustees; J. K. Weaver of Norristown of the class of 1867, the oldest graduate present, and Dr. Hobart A. Hare.

Symposium on Hygiene and Physical Training Teaching.—At the stated meeting of the College of Physicians of Philadelphia a symposium was held on the teaching of personal hygiene and physical training in our public schools, colleges and universities. Dr. Edward Martin, commissioner of health of Pennsylvania, Harrisburg, opened the symposium on the teaching of personal hygiene in the public schools of Pennsylvania, and Dr. R. Tait McKenzie, professor of physical education in the University of Pennsylvania, spoke on "The Importance of Teaching Personal Hygiene and Physical Education in our Colleges and Universities."

SOUTH CAROLINA

New State Officers.—At the annual meeting of the South Carolina Medical Association, held in Greenville, the following officers were elected: president, Dr. Washington P. Timmerman, Batesburg; vice presidents, Drs. Miles J. Walker, York, William A. Boyd, Columbia, and William W. Fennell, Rock Hill, and secretary, Dr. Edgar A. Hines, Seneca (reelected).

Personal.—Dr. George T. Swandale has resigned as a member of the Greenville Board of Health and has been succeeded by Dr. Charles W. Gentry.—Dr. Jean B. Laborde, Columbia, has been elected city physician, succeeding Dr. Clarence E. Smith, elected city health officer of Greenville.—Dr. T. W. Smith has been elected a member of the board of health of Newberry, succeeding Dr. James K. Gilder, deceased.

Tuberculosis Association Meeting.—At the annual meeting of the South Carolina Tuberculosis Association, in Columbia, April 30, under the presidency of Dr. Reed Smith, Columbia, the following officers were elected: president, J. Nelson Frierson, Columbia; vice presidents, Drs. Richard M. Pollitzer, Charleston, and Ernest Cooper, Columbia; secretary, Dr. Reed Smith, Columbia, and treasurer, A. S. Manning, Columbia (reelected).

New Medical Board.—The governor has reappointed the following as the state board of medical examiners under the new act passed in the last session of the general assembly: first district, Dr. Joseph T. Taylor, Adams Run; second district, Dr. Josiah S. Matthews, Denmark; third district, Dr. Frank M. Lander, Williamston; fourth district, Dr. Baxter M. Haynes, Spartanburg; fifth district, Dr. Joseph R. Miller, Rock Hill; sixth district, Dr. George B. Edwards, Darlington; seventh district, Dr. Julius H. Taylor, Columbia, and state at large, Dr. A. Earle Boozer, Columbia.

SOUTH DAKOTA

Guilty of Manslaughter.—The jury considering the case of manslaughter against Dr. Oscar H. Clark, Newell, charged with the death of Alice Leuth, following an illegal operation, is said to have returned a verdict of guilty, May 17.

Clinic Building Ready.—The new Sioux Falls Medical and Surgical Clinic building, Eleventh and Minnesota Avenue, is expected to be ready for occupancy this month. The building has been constructed at a cost of about \$100,000, is two stories in height and will be occupied by eight physicians of Sioux Falls.

State Society Meeting.—The South Dakota State Medical Association held its thirty-ninth annual session in Sioux Falls, May 18 to 20, under the presidency of Dr. Robert D. Alway, Aberdeen, and the following officers were elected:

president, Dr. Harry T. Kenney, Pierre; vice presidents, Drs. George S. Adams, Yankton, and Gilbert G. Cottam, Sioux Falls; secretary-treasurer, Dr. Frederick A. Spafford, Flaudreau (reelected); delegate to the American Medical Association, Dr. Robert D. Alway, Aberdeen, and alternate, Dr. Theodore F. Riggs, Pierre. Aberdeen was selected as the next place of meeting.

TEXAS

Personal.—Dr. Douglas Largen, San Antonio, has been appointed assistant state health officer and has been placed in charge of the division of venereal diseases.—Dr. J. Q. Durham, Memphis, was seized with cerebral hemorrhage while driving his car, April 25, and is still seriously ill.—Dr. H. H. Terry and Julian Murchison have been appointed assistant city health officers of Fort Worth.

New Officers of State Society.—In addition to the officers of the State Medical Association of Texas, published in THE JOURNAL, May 8, page 1335, the following officers were elected: vice president, Dr. Willis J. Pollard, Kaufman; secretary, board of trustees, Dr. W. R. Thompson, Fort Worth (reelected); councilors, second district, Dr. Preston C. Coleman, Colorado (reelected); eighth district, Dr. Oscar S. McMullen, Victoria (reelected); seventh district, Dr. Joe C. Gilbert, Austin; ninth district, Dr. William B. Thorning, Houston, and tenth district, Dr. Murff F. Bledsoe, Port Arthur (reelected); delegates to the American Medical Association, Drs. John M. O'Farrell, Richmond, Edward H. Cary, Dallas, and Holman Taylor, Fort Worth, and alternates, Drs. Murff F. Bledsoe, Port Arthur, and Robert W. Knox, Houston.

WASHINGTON

Presented Forged Credentials.—A report from the state board of medical examiners recently stated that a Dr. Francis J. Koler was licensed on credentials showing that he graduated from the University of Minnesota, June 5, 1915, and that he had been licensed in Minnesota in the same year. These statements were not verified by official data at the headquarters of the American Medical Association and a letter from Dean Lyon of the University of Minnesota Medical School stated positively that no such person had ever graduated from that institution. Statements to this effect were at once forwarded to the Washington board. It is now reported that on May 28, Mr. Koler admitted that his diploma and the reciprocity blanks, together with seals of the university and state of Minnesota, had been forged. He agreed to return the license thus fraudulently obtained. He then left for parts unknown. Other licensing boards will do well to be on the lookout for Mr. Koler.

GENERAL

General Gorgas Honored.—The knight commandership of the Order of St. Michael and St. George was recently conferred on Gen. W. C. Gorgas by King George of England. Dr. Gorgas is en route to make studies of yellow fever on the west coast of Africa.

Limit Liquor Prescription Issue.—In an effort to defeat the indiscriminate sale of liquor on physicians' prescriptions, Commissioner Williams of the Bureau of Internal Revenue, issued a ruling, May 28, limiting the number of prescriptions for physicians to 100 for each three months, excepting with "good cause."

Sanitarians Hold Meeting.—At the annual meeting of the Southern Sanitary Association, held in Charlotte, May 25, Spartanburg, S. C., was selected as the next place of meeting and the following officers were elected: president, Dr. Andrew J. Warren, Charlotte, N. C.; vice presidents, Dr. C. C. Hudson, Richmond, Va., and Mrs. Ruth A. Dodd, Columbia, S. C., and secretary-treasurer, Dr. E. C. Smith, Columbia, S. C.

Virginia and District Meeting.—At the annual meeting of the Medical Society of Northern Virginia and District of Columbia held in Alexandria, Va.; May 19, Dr. George Tully Vaughan, Washington, D. C., was elected president; Dr. Arthur Hooe, vice president; Dr. William H. Davis, Washington, D. C., recording secretary; Dr. Joseph D. Rogers, Washington, D. C., corresponding secretary, and Dr. Robert S. Lamb, Washington, D. C., treasurer.

Grants for Research.—The committee on grants of the American Association for the Advancement of Science has made a grant of \$100 to Prof. Theodore Hough of the University of Virginia, Charlottesville, in support of his studies with Dr. J. A. Wardell on blood changes after severe hemor-

rhages, and of \$150 to Prof. Carl J. Wiggers of Western Reserve University, Cleveland, in support of his investigations of the cardiac function by optical registration.

American Pediatric Society Elects.—The American Pediatric Society, at its thirty-second annual meeting held in Highland Park, Ill., May 31 to June 2, elected the following officers: president, Dr. John Howland, Baltimore; vice president, Dr. Charles A. Fife, Philadelphia; secretary, Dr. Howard Childs Carpenter, Philadelphia; treasurer, Dr. Charles Hunter Dunn, Boston, and recorder and editor, Dr. Oscar M. Schloss, New York City.

Fellowships Offered.—Four fellowships of \$1,200 each have been offered by Julius Rosenwald of Chicago to negro graduates for advanced medical studies. The fellowships thus far announced are Drs. George W. James, Jr., Howard University, 1918; Theodore K. Lawless, Northwestern University Medical School, 1919; W. S. Quinland, Meharry Medical College, 1919, Harvard Medical School, 1919-1920, and Carrie D. Sutton, Howard University, 1920.—A \$1,000 fellowship is offered by the Child Health Organization of America, New York City, for the best plan and outline for interesting children in the establishment of health habits.

Using the Automobile Emblem.—Hon. S. S. Horn, mayor of Easton, Pa., has addressed a letter to the members of the medical profession of that city urging them to mark their cars with the Caduceus so as to permit traffic officers to recognize physicians' cars. The mayor recognizes that many times a physician's car should be granted certain privileges which are not permitted except for fire apparatus and ambulances. Mr. Horn knows that it is impossible for a traffic officer to recognize every physician or know their cars. Consequently, he feels it would be of great advantage to have an emblem which will mark physicians' cars. He suggests the use of the automobile emblem provided by the American Medical Association for marking the cars of all legally qualified practitioners of medicine.



Warning Against Untried Medicaments.—The U. S. Public Health Service has issued a bureau circular regarding the use of arsenic preparations in the treatment of syphilis, in which it invites attention to the extensive exploitation through advertisements in professional journals and elsewhere, of various arsenic preparations which are not related to the arsphenamin group but which are sold with unwarranted claims as to their value in the treatment of syphilis. In the opinion of the bureau, the subcutaneous, intramuscular or intravenous use of arsenic in the treatment of syphilis should be confined to the arsphenamin group, as these agents are now of established value and are produced under the regulations of the Public Health Service. These agents are now manufactured by the following licensed firms: Dermatological Research Laboratories, 1720 Lombard Street, Philadelphia; H. A. Metz Laboratories, 122 Hudson Street, New York City; Diarsenol Company, Inc., Buffalo; Takamine Laboratory, Clifton, N. J., and the Lowy Laboratory, Newark, N. J. Provision is made for the experimental use of any preparation under conditions which will make the results of the experiment available to others than the physician immediately concerned.

Research Council Election.—The National Research Council, a cooperative organization of leading scientific and technical men of the country for the promotion of scientific research and the application and dissemination of scientific knowledge for the benefit of the national welfare, has elected the following officers for the year beginning July 1: chairman, H. A. Bumstead, professor of physics and director of the Sloane physical laboratory, Yale University; vice chairmen, C. D. Walcott, president of the National Academy of Sciences and secretary of the Smithsonian Institution; Gano Dunn, president of the J. G. White Engineering Corporation, New York, and R. A. Millikan, professor of physics, University of Chicago; permanent secretary, Vernon Kellogg, professor of biology, Stanford University, and treasurer, F. L. Ransome, treasurer of the National Academy of Sciences. The council was organized in 1916 under the auspices of the National Academy of Sciences to mobilize the scientific resources of America for work on war problems, and reorganized in 1918 by an executive order of the President on a permanent peace-time basis. Although cooperating with various government scientific bureaus it is not controlled or supported by the government. It has recently received an endowment of \$5,000,000 from the Carnegie Corporation, part of which is to be expended for the erection of a suitable building in Washington, D. C., for the joint use of the coun-

cil and the National Academy of Sciences. Other gifts have been made to it for the carrying out of specific scientific researches under its direction.

Status of Sheppard-Towner Maternity Bill.—A distinct step toward the passage of the Sheppard-Towner Maternity and Infancy Bill has been accomplished by the favorable report on this measure which has just been made to the Senate from the Committee on Public Health and National Quarantine. The bill provides for cooperation on the part of the national government with the several states in the care of maternity and infancy cases and provides for studies, investigations and reports thereon. It sets aside \$480,000 each year, of which \$10,000 is to be paid annually to each state for carrying out the provisions of the act. It creates the Federal Board of Maternal and Infant Hygiene for the purpose of administration of the law. This board shall consist of the Secretary of Labor, the chief of the Children's Bureau, the Surgeon-General of the Public Health Service and the commissioner of education. The bill appropriates the sum of \$2,000,000 for the next fiscal year in carrying on this cooperation work among the states and proposes appropriations for each succeeding year to 1925 in the sum of \$3,600,000. Before any state can secure the benefits of these appropriations, the legislature of such state is required to authorize the creation of a state board of mental and infant hygiene which will cooperate with the federal board. It is also provided that the cooperative work in promoting the care of maternity and infancy shall consist of instruction in the hygiene of maternity and infancy through public health nurses, consultation centers, and other suitable methods, and the provision of medical and nursing care for mothers and infants at home or at a hospital when necessary, especially in remote areas; and this work shall be carried on in such manner as may be mutually agreed on by the federal board and any state receiving the benefits of this act. The report of the committee in support of the bill was made by Senator Francis of Maryland. It says in part:

The testimony brought out that it is safer to be a mother in 14 important foreign countries than here in our own country. In 1918 23,000 mothers died from causes connected with childbirth and nearly a quarter of a million babies died under 1 year of age. Most of these deaths are preventable. It was further brought out that the protection of the child must begin with the protection of the mother. Care during pregnancy and confinement and instruction in the hygiene of maternity, infancy, and childhood must be made available for all mothers through such agencies as prenatal clinics, maternity hospitals, maternity care in the home, children's health centers, and systems of public health nursing adequate to reach every mother and child.

This neglect of maternity and infancy leads not only to thousands of preventable deaths but to lowered vitality and permanent impairment of health and efficiency for thousands of women and infants who survive. The Children's Bureau's studies in rural areas in six different States have revealed:

1. High maternal mortality rates, above the average for the United States as a whole.
2. The fact that 80 per cent. of the mothers had received no advice or trained care during pregnancy.
3. Many mothers had no trained attendants of any kind at confinement.
4. Inaccessibility and often entire lack of hospitals, doctors, and nurses.
5. Practically no organized effort to meet the need for instruction in prenatal and infant hygiene and for trained care during pregnancy and confinement.
6. An almost prohibitive cost for providing adequate care at confinement in scattered and isolated rural districts. The very districts where advice and supervision during pregnancy and better help at confinement are most needed are the ones least able to obtain it without financial aid.

Of more than 22,000 city babies studied by the Children's Bureau and representing every type of home in seven cities more than three-fifths were born into families where the fathers' earnings were below the amount which was at that time the minimum for providing the necessities of existence. Only 1 in 10 was in a family where the father's earnings reached a fair minimum for comfort.

The problem is not local or sectional, but nation-wide, and federal action, therefore, is urgently needed. This bill offers a practicable method of cooperation between the federal government and the states. Such a method is already successfully operating in promoting agricultural work, vocational education, and the building of good roads.

Testimony on file from governors of 33 states and mayors of many large cities indicates that the states are ready and eager to avail themselves of the provisions of this bill.

Medical experts testified that with the most ordinary nursing care even to mothers and the services of a nurse who will supervise and instruct the pregnant woman, the death rate in the first month of life can be reduced one-half or two-thirds. It has frequently been found that among babies of supervised women there is a death rate not exceeding 18 or 19 per cent., as contrasted with 40 per cent. of the babies of the women of the same class who are unsupervised.

Such care bears results immediately and almost with mathematical certainty, and there can be no question whatever that the women in rural communities should no longer bear the onus of having to con-

sider themselves outcasts, as it were, and not be able to avail themselves of the same kind of treatment that is at the service of certain city mothers.

Statistics have shown in New York City that, beginning five years after the commencement of work to reduce infant mortality, the effect was felt and the death rate under 5 years of age has been progressively lowered so that now the reduction in infant mortality is greater and the sickness rate is lower than it has ever been under 1 year of age. In other words, these children are not only saved to be alive at the end of the first year but are protected from physical defects, ill health, underdevelopment, and general physical deterioration in later life.

This bill equalizes the opportunities of mothers everywhere to receive suitable instruction in child hygiene in terms which they can understand, and provides for their care by those who are suitably trained. It also provides for methods of cooperation between various Government departments which have been dealing with certain phases of child welfare.

The representatives of Democratic and Republican women, and the League of Women Voters testified to the need of impressing upon lawmakers and politicians that the government has a responsibility for the care of mothers and babies. The greatest duty of government, the real purpose for which it exists, is to promote the general welfare.

Heretofore Congress has appropriated large sums for hogs and cattle. It is not because men think more of hogs and cattle than they do of babies that they vote \$47,000,000 for them and nothing for the little ones, but because they have been thinking of the father's end of the problem. They have not seen that there was another side to the problem that was just as much the public business, namely, right conditions surrounding mothers and babies at home. Mothers will always think of the baby first. They are made that way; that is why it is a good thing for women to be in politics at this particular stage of the world's history, when conservation of life is so important.

There is no difference of opinion among the women as to the necessity for this measure. Furthermore, they have great confidence in the administrative feature of this bill, which provides that it shall have as its administrative officer the Chief of the Children's Bureau. They feel strongly that this is a woman's question and they heartily approve of the legislation which proposes to give the administrative function of the bill to a woman, who is the Chief of the Children's Bureau and who has already done so much for the children of the Nation.

Other speakers testified that the death rates of babies within the United States vary from those which are exceedingly unfavorable, according to the care available for mother and child. Rural isolation, civic neglect, low income, ignorance, are among the chief accompaniments of high infant mortality in the United States.

Plainly, it is for the public interest that young life and maternal life should be conserved. But in order to give an approximately fair chance for life for every child born, it is impossible to rely solely upon local funds and initiative, otherwise the figures would not show the present extreme variations in localities of varying resources.

This bill recognizes that the family is the social unit, and that upon its physical, mental, and moral adequacy depends national progress. Family well-being involves many services, among them those of teacher, physician, nurse, and social economist.

The ground for this work is already broken in two-thirds of the states at least, the seed is already planted in the hearts of the executives, and only the stimulus of federal action is needed to make the work flourish.

It can not be ignored that the rising thought throughout the world recognizes that all life is precious, that life which is creating life is doubly precious, and that the mothers and infants must be protected.

This committee believes that Congress should take prompt action on this measure. It has been said that the 23,000 mothers who died from causes connected with childbirth in 1918 and the 250,000 infants comprised a total casualty list that is as large as our total casualty list during the war.

Congress should not be passive in the face of this great loss, not only economic but social and moral as well. We believe that the United States should be pulled up from its present ignominious position as a squanderer of mothers and babies.

CANADA

Personal.—Dr. Richard J. Harding, McGill University, has been appointed professor of chemical pathology in the University of Toronto by the board of governors of the university.—Dr. Daniel Murray has been reelected mayor of Campbellton, N. B.—Dr. William G. Anglin, Kingston, has been appointed surgeon to the provincial penitentiary, Portsmouth.

Alumnae Meet.—The annual meeting of the Women Medical Alumnae of Queens Medical College was held in Toronto, and the following officers were elected: honorary president, Dr. Augusta Stowe Bullen; president, Dr. Katherine Woodhouse; vice presidents, Drs. Isabella Smith Wood, Annie Saeveth Higbee, Grand Prairie, Alta., and Dorothea A. Orr, Toronto; secretary, Dr. Edna Robertson, and treasurer, Dr. Edna M. G. Guest, Toronto.

LATIN AMERICA

Children's Outing Station in Argentina.—The Buenos Aires municipal authorities have opened a vacation colony for the sickly children of the city.

Government Sanatoriums in Santo Domingo.—The government of Santo Domingo has begun the necessary steps for the construction of a number of sanatoriums in different parts of the country.

Public Health Appropriation in Paraguay.—The appropriation for public health purposes, granted by the last congress of Paraguay, amounts to 600,000 pesos, including the funds for the new services for the control of leprosy, hookworm, plague, tetanus neonatorum, etc.

Bubonic Plague in Mexico.—It is reported that all traffic by rail or steamship to Vera Cruz, with the exception of that over the railway to Jalapa, has been ordered suspended on account of the presence of bubonic plague in Vera Cruz. Major A. R. Goodman, M. C., U. S. Army, attached to the American embassy at Mexico, announced, June 5, that the situation is not so serious as the reports state and that the Mexican medical authorities are handling the situation efficiently and taking every precaution to prevent the plague from spreading to other parts of the country. According to the latest reports from Vera Cruz the number of cases of bubonic plague so far discovered in that city is twelve, several persons having already died. No new cases have occurred lately. The authorities have accepted the offer of the United States government to send a sanitary detachment to assist in combating the disease. It is reported that the outbreak is now under control.

FOREIGN

Donations from Norway to Vienna Physicians.—Dr. R. Nadwig arrived recently in Vienna conveying six freight cars loaded with edibles of a value estimated at 5,000,000 crowns, for Vienna physicians and their families, donated by the physicians of Norway.

Nurses Get Florence Nightingale Medals.—Fifteen nurses representing fifteen countries have been awarded the Florence Nightingale medal for heroism on the battlefield by the Geneva Red Cross. Among those who received the decoration were six American, eight British and eight French nurses.

Personal.—Prof. Sadao Yoshida of Osaka Medical College, Japan, who has been spending his sabbatical year in research work at the parasitologic laboratory of the University of Illinois, has been awarded the Katsurada prize and medal of honor established by the Japanese government to be given periodically to some distinguished workers on tropical diseases.

Portrait of Sir Clifford Allbutt.—The catalogue of the exhibition of the Royal Academy this year includes a portrait of Sir Clifford Allbutt, painted by Sir William Orpen and presented to Sir Clifford by the medical profession. The picture bears the inscription: "Sir Clifford Allbutt, K.C.B., M.D., F.R.S., regius professor of physics in the University of Cambridge, President of the British Medical Association, presented to him by his Profession in 1920."

Typhus in Poland.—Dr. Rupert Blue, formerly Surgeon-General, U. S. Public Health Service, who is in Europe investigating health conditions, has cabled Washington, D. C., for five additional surgeons to be sent to northern ports to inspect all third class passengers for America in view of the prevalence of typhus fever and cholera in Poland. It is required that all third class passengers be bathed and disinfected and held for twelve days at the port of embarkation.

Belgian Society of Psychiatry.—The Société de médecine mentale de Belgique will hold a jubilee congress in celebration of its fiftieth anniversary in Ghent, September 25-26. Dr. Ley, professor of psychiatry at the University of Brussels, is president of the congress, and Dr. Hovrey, Liernux, Belgium, is secretary. Representative delegates from related societies of the United States will be accorded a warm welcome.

Abolishing Penalties for Abortion.—The small canton of Basel-Stadt, the most northern point in Switzerland, has been debating for some time the question of striking induced abortion from the list of criminal acts. The council finally voted in favor of this against the protests of the medical profession, but was soon obliged to rescind its action, the agitation against the measure compelling the rejection of the bill at a second reading.

Tuberculosis Conference of the Northland.—The Nordiska Föreningen mot tuberkulos is to meet at Stockholm the last week in June. One session is to be devoted to convalescents' colonies and occupation, and treatment of laryngeal tuber-

culosis. Tuberculosis specialists from Denmark, Finland, Iceland, Norway and Sweden are expected. The conference has been called by the Svenska Nationalföreningen mot tuberkulos, whose address is Birger Jarlsgatan 22, Stockholm.

Tenth Scandinavian Congress of Internal Medicine.—The occurrence and treatment of visceral syphilis has been appointed as the main topic for discussion at this gathering of Scandinavian internists at Helsingfors in July, 1921. The address on syphilis of the central nervous system is to be by Dr. Hanssen of Bergen, the discussion to be opened by Professor Hagelstam of Helsingfors. Syphilis of the abdominal and chest organs is to be presented by Professor Jacobaeus of Stockholm, and the discussion to be opened by Professor Tallqvist of Helsingfors.

Rate of Exchange with Germany.—Some of our German exchanges publish week by week the current rate of exchange to be adopted by the physicians at watering places in charging foreigners for their services. The rate given by the *Medizinische Klinik* for May 9, just received, is as follows: "141 marks for Americans; 130 marks for Argentinians; 51 marks for Belgians; 96 marks for Danes or Norwegians; 119 marks for the English; 46 marks for the French; 129 marks for Netherlanders; 32 marks for Finlanders; 34 marks for Italians; 117 marks for patients from Sweden; 134 marks for patients from Switzerland and 126 marks for those from Spain."

Epidemics of Smallpox.—Glasgow has experienced a considerable epidemic of smallpox, and there is a fear that it will spread to other parts of Scotland. The situation was particularly alarming because of the fact that approximately 40 per cent. of the children under 14 years are unvaccinated. Of fifteen unvaccinated children who contracted the disease, five succumbed; and of the first seven deaths reported from the disease, only one was of an unvaccinated person. Two sources of origin have been traced: a ship from India and a ship from Egypt. An epidemic was prevailing in Calcutta early in the year, 396 deaths from smallpox being recorded in the two weeks ending January 31.

Appeal for Lebanon Hospital.—The Lebanon Hospital for Mental Diseases, Asfuriyeh, Syria, through its American committee, has issued an appeal for subscriptions to a fund of \$60,000 for necessary equipment and reconstruction. This hospital, the only asylum for the insane between Constantinople and Cairo, is maintained by voluntary contributions from American, British, Dutch and Swiss benefactors and is administered by an executive committee of members of the staff of the Protestant Syrian College at Beyrout. Accommodations are provided for 150 patients, and admission is granted to any needy mental patient, irrespective of creed, race or nationality. Communications should be addressed to Mr. Robert B. Haines, Jr., secretary, 119 South Fourth Street, Philadelphia.

Tokens of the Gratitude of France.—The *Presse médicale* of May 19 gives a list of persons to whom the French government has recently awarded the Médaille de la Reconnaissance Française. Among them are ten American physicians and surgeons who are cited for having volunteered to care for the sick and wounded and lavished their services with the greatest skill and devotion. The list includes Drs. P. Keating, Wawa, Pa.; C. Mack, Boston; H. Feiss, neurologist; Major E. Johnstone, Honolulu; John Miller; C. Powers, Denver; P. Petree, Germantown, N. C.; Hunter Scarlett, Philadelphia, and T. Beebe, Boston and Miss Ida Shields, Arlington, N. J., whose medical services to the refugees were highly appreciated. The list includes further Dr. Louis MacNulty of Lima, Peru, "who served as assistant and often acting chief of Hospital 38, with zeal and skill."

Deaths in Other Countries

Dr. J. B. Miranda, for thirty-four years professor of pharmacy at the University of Santiago, Chile, author of works on the treatment of cholera, etc.—**Dr. R. Livi**, professor of anthropology at the University of Rome, the chief authority on anthropologic statistics in Italy, and inspector general of the army medical service in the Florence district during the war, aged 64.—**Dr. G. B. Locatelli** of Brescia, Italy, prominent in the fight against pellagra, alcoholism and venereal disease. Not long before his death he had presented the Associazione dei Dermosifilografi Italiani with 20,000 lire to found the Locatelli prize for work in this line.—**Dr. F. Schrakamp**, professor of social hygiene and medical legislation at the Akademie für praktische Medizin at Düsseldorf, aged 60.

Government Services

Work on Medical and Surgical History of the War

The initial steps for the preparation of the medical and surgical history of the World War will at once be taken by Surgeon-General of the Army, M. W. Ireland. As finally passed by Congress, the first appropriation for this work was reduced to \$50,000, but provision is made that the total cost of this history will not exceed \$150,000. As it will require at least two years to complete this work it is the understanding that Congress will provide additional money to carry on this important undertaking from time to time.

Examination for Medical Officers

In accordance with the provision of the recent Act of Congress on reorganization of the Army, including the Medical Department, an examination will be held July 7 for those who served as officers in the Medical Department during the World War. The age limit will be 58 years. All grades are open to appointment of those qualifying physically, morally and professionally after examination. Those who have already applied will be authorized by the War Department to appear before the nearest examining board. Applications from others must be received not later than June 23. Information is available at every military station and recruiting station, or it may be obtained by writing directly to the Surgeon-General's Office.

Hospitals for Public Health Service

The policy of the government for the construction of hospitals and care of former service men is outlined in the bill reported to the House of Representatives by Congressman Langley of Kentucky, chairman of the Committee on Public Buildings and Grounds. The bill provides for the construction of five hospitals, of which three shall be for the treatment of neuropsychiatric patients. One of these hospitals will be located in the central Atlantic Coast states, one in the region of the Great Lakes, and one in the north Pacific coast states. Two shall be for the treatment of tuberculosis patients, one of which shall be located in the Rocky Mountain States and one in southern California. This bill has been prepared by the Committee on Public Buildings and Grounds after consultation with the Surgeon-General of Public Health Service, director of War Risk Insurance and other officials and is expected to meet all hospital requirements of the immediate future in behalf of soldiers of the World War. The bill authorizes the expenditure of \$10,000,000 for the construction of these various hospitals. It permits the remodeling or extension of existing plants and equipment owned by the government.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list L. signifies lieutenant; C., captain; M., major; L. C., lieutenant colonel, and Col., colonel.

ALABAMA	DELAWARE
Doyle—Rhodes, G. A. (C.)	Dover—McKelway, G. I. (M.)
ARKANSAS	FLORIDA
Philadelphia — Townsend, C. K. (L.)	St. Petersburg — Axline, M. H. (M.)
CALIFORNIA	GEORGIA
Angeles—Carling, J. (C.)	Augusta—Butler, J. H. (M.)
Fahy, J. E. (C.)	Lang, N. H. (C.)
Magee, C. L. (M.)	
Turner, K. B. (M.)	ILLINOIS
San Francisco — Degnan, J. P. (L.)	Aledo—Baldwin, A. K. (L.)
Tranter, C. L. (C.)	Chicago—Dale, G. L. (M.)
Rafael—Stone, W. J. (C.)	O'Grady, G. E. (L.)
Wint Grove—Wilson, E. E. (C.)	Jacksonville—Stacy, G. H. (C.)
	Mount Vernon—Suttle, O. A. (M.)
COLORADO	INDIANA
Colorado Springs—Sharp, G. L. (L.)	Columbia City—Pence, B. F. (C.)
CONNECTICUT	Indianapolis — Glendening, J. L. (L.)
Conklin, C. S. (L.)	Jones, C. H. (C.)

IOWA

Council Bluffs—Konigmacher, A. H. (C.)
Sumner—Wuttke, E. E. (L.)

KANSAS

Mayfield—Clark, E. F. (L.)

KENTUCKY

Calhoun—Moore, P. D. (L.)
Hopkinsville — Durham, W. W. (C.)
Louisville—Hill, D. L. (C.)

LOUISIANA

New Orleans—Starns, C. E. (L.)

MARYLAND

Baltimore—Murray, J. G., Jr. (C.)

MASSACHUSETTS

Boston—Parker, C. C. (L.)
Schnack, A. G. C. (L.)
Brockton—Dunham, H. B. (L.)
Framingham — Partington, C. B. (L.)

MICHIGAN

Detroit—Anderson, F. C. (L.)
Grand Rapids—Dingman, H. W. (C.)

MINNESOTA

Albert Lea—McCreight, G. M. (L.)
Minneapolis—Stone, H. W. (L.)

MISSISSIPPI

Natchez—Podesta, A. J. (C.)

MISSOURI

Mineola—Wyatt, D. (C.)
St. Louis—Lee, E. J., Jr. (C.)

NEVADA

Carson City—Cree, W. J. (M.)

NEW HAMPSHIRE

Rumney—Drew, J. A. (M.)

NEW JERSEY

Bridgeton — Charlesworth, I. E. (M.)
Colonial—Tomassene, R. A. (C.)
Jersey City—Frundt, O. C. (C.)
Raritan—Nixon, W. L. (L.)

NEW YORK

Brooklyn — McCullough, W. A. (L.)
Stone, A. (L.)
Elmhurst—Baker, A. T. (M.)
New York—Mayer, J. M. (L.)
Sanford, W. H. (M.)
Sharp, H. (C.)
Vetter, P. J., Jr. (L.)
Syracuse—Brennan, A. W. (C.)

NORTH CAROLINA

Asheville—Costello, M. J. (C.)
Newton—McCorkle, M. L. (L.)

NORTH DAKOTA

Munich—Lindner, E. R. (M.)

OHIO

Cleveland—Steel, J. M. (M.)
Hudson—Herrick, H. J. (C.)
Marble Cliff—Miller, S. H. (L.)
Springfield—Mahoney, T. W. (L.)
Zanesville—Allen, S. L. (L.)

PENNSYLVANIA

Philadelphia—Mayer, J. P. (L.)
Wayne—Truxal, C. W., Jr. (C.)

TENNESSEE

Cordova—Hooper, E. L. (C.)
Knoxville—Allan, H. W. (L.)
Nashville—Brewer, F. B. (C.)

TEXAS

Fort Worth—Pember, C. H. (C.)
Kilgore—Hamilton, E. H. (C.)
San Antonio—Nesbit, W. E. (L.)
Traey—Lyon, W. H. (C.)
Wortham—Seely, M. S. (C.)

VIRGINIA

Ammon—Hamner, J. L. (L.)
Jetersville—Styers, R. J. (C.)
Richmond—Mereer, W. N. (C.)

WASHINGTON

Seattle—Birchfield, G. I. (C.)
Spokane—Ridpath, P. C. (L.)

WEST VIRGINIA

Beverly—Barlow, C. A. (M.)
Carbon—Ashby, J. W. (C.)

Foreign Letters

BUENOS AIRES

(From Our Regular Correspondent)

April 27, 1920.

Food Adulteration

The whole city has been much exercised over the results of an investigation being carried out by the municipal authorities in regard to adulterated or spoiled foodstuffs now being sold in the open market. It was ascertained through factory inspections that a number of biscuit and breadstuff firms and confectioneries were using spoiled eggs in their products. There were seized from storage large quantities of decomposed preserves, cheese, etc., it being found that they were sold after being treated so as to make them tolerable. In other well known factories there were kept spoiled meats and fish, which it was intended to treat in the same way. The popular indignation at these facts reached its height when four persons died as a result of eating some spoiled food, and an attempt was made to break into the house where the food had been prepared. The investigation is being continued.

Murder of a Student in the School of Medicine of La Plata

The signs of academic disintegration, since the students have obtained virtually the right of appointing the governing boards, found serious expression recently at La Plata. For several reasons which have changed every once in a while, the students of the University of La Plata have been on a strike for some time. A large number, however, being in disagreement with this move, requested to be allowed to

take the examinations. On examination day the examining board was assaulted by the strikers, some shots were fired, and a first-year student, David Viera, aged 20, who was taking the examination, was killed. The dean of the school of medicine, Professor Belou, has resigned his position, and it looks as if the school would be closed.

School of Medicine of Rosario

The government has just opened a school of medicine at Rosario, having placed in charge Dr. Agudó Avila. In view of the importance of that city, it seems assured that the school will become very important. It will be located next to the Hospital Centenario, the funds for the building having been provided by public subscription.

Antimalaria Campaign

The summer campaign against malaria carried out by the national department of public health in Catamarca, Tucumán, Salta and Jujuy is coming to an end. During the campaign 192 kg. of quinin has been distributed, 1,500 kg. of oil was employed, and 1,400 mosquito nets were given away to poor people. The result in some places seems to have been good.

Anthrax Cases

There has been a decided increase in the number of cases of anthrax among workmen, which may be considered as industrial accidents. In 1910, fifteen cases were observed, while in 1918, there were 226 and last year, 113 cases and 18 deaths. The department of labor has recommended to the government that measures be taken to protect the workers liable to contract this disease.

LONDON

(From Our Regular Correspondent)

May 15, 1920.

The Electric Sterilization of Milk

The Medical Research Committee has published a report on this subject by Professor Beattie of Liverpool and Mr. Lewis, lecturer on bacteriology of Liverpool. An independent trial of the matter was also made at Birmingham by Professor Leith. The experimenters agree in supporting the value of the proposed electrical method of sterilization. The Birmingham workers found that the electrical method showed a close parallelism to the old method of sterilization by heat, and are inclined to think that the current kills the bacteria by virtue of the heat which it generates. They were led to believe that in the electrical method the current raises the temperature of the milk more quickly; and since it passes through every part of the milk, the heat which it generates reaches every part of the milk at the same moment—an advantage over the simpler thermal method. The sterilizing power of the two methods is similar, though the electrical is quicker in action. Leith summarized his report by saying that "both the thermal and electrical methods have a high practical value and deserve consideration in any endeavor made to improve milk supplies. The thermal is simpler and cheaper, the electrical quicker in action." Leith suggested further that both methods could be made more efficient by grafting on them the practice of pasteurizing by two treatment applications, with rapid cooling of the milk after each, and that even with a single application the milk would store better if rapidly cooled after treatment. In the opinion of the Medical Research Committee, the experiments at Birmingham, though they entirely support the practical results obtained by Beattie and Lewis at Liverpool, were not complete enough on their bacteriologic side to settle finally the question whether the electrical current in this method has a direct bactericidal action or whether it acts purely as a

thermal agent. Sir Oliver Lodge, who superintended the electrical arrangements, was strongly of opinion that its action was purely thermal.

Pellagra in Egypt During the War

The controversy that exists as to the etiology of pellagra renders important the report of a committee appointed to examine the situation created in 1918 by the presence in Egypt of a large number of prisoners of war suffering from pellagra. It was found to be a deficiency disease due to insufficient assimilation of protein, and characterized by erythema and pigmentation of the exposed parts of the body, on the back of the hands first, a fortnight later the nose, later on the feet, these discolored patches being dry and not sweating even under pilocarpin. Profound disturbance of nutrition with early wasting of the muscles of the shoulder girdle, and progressively increasing fall in blood pressure follow. Loss of appetite is a very early symptom, and there is defective secretion of hydrochloric acid in the gastric juice. Herewith there is impairment of digestion, both gastric and pancreatic, malassimilation of protein and fat, and an increased bacterial growth in the intestine, with intermittent diarrhea leading to further loss of food ingested, but incompletely absorbed. Also the enhanced destruction of protein gives very foul-smelling stools and indican appears in the urine in increasing quantities; apathy comes on, perhaps melancholia, and the patient dies. The disease picture suggests suprarenal inadequacy, and, in fact, in the recorded cases the suprarenals averaged 15 gm. lighter in the pellagra cases than in the controls. There is no evidence of specific bacterial or protozoal infection. Death is due to some intercurrent infection—pneumonia, dysentery, tuberculosis or malaria accounted for 91 per cent. of deaths. The disease occurred in Turkish camps, not in the camps of Germans alongside, where there was money to buy extra food. Spot maps showed that there was no infection from place or person.

The important question was how this disease was to be prevented. Eighty-eight per cent. of the cases arose among newly captured Turkish prisoners, who before capture for months had available only two thirds of their normal ration, and had suffered "from long continued undernutrition," as their German general had reported the year before. Further, the protein of their diet came mostly from wheat, barley or maize, very little from meat. Now Hopkins and Willcocks, in 1907, showed that the chief protein of maize cannot keep rats alive, as it does not contain enough tryptophan, an amino-acid of the aromatic series; in 1913, Sandwith suggested that want of tryptophan might help to cause pellagra. The committee had the help of Prof. W. H. Wilson, of the Cairo School of Medicine, who has long been working at the different nutritional values of the proteins, which seem in part to depend on their individual amino-acids. For the making of epinephrin a benzene nucleus is essential. For the production of this the human organism depends on the hydrolysis of special proteins in the food supply, and even then the yield of tryptophan in this process may be broken up by an overwhelming bacterial flora in the duodenum. Every diet scale considers how much protein is necessary for the man of 70 kg., which is agreed to be 40 gm. daily. But that means grams absorbed, and for normal persons must be increased by one tenth; but experiment proved that for Turkish prisoners it required to be increased by one half, so that, even if they had received full rations, the Turks would have been underfed. But, further, they were fed on the wrong proteins. Wilson had calculated the "biologic value of the proteins" (B. V. P.) of various foodstuffs, and had found that, to replace 30 gm. of meat as protein supply in a man's diet, 34 gm. of rice-protein were necessary, 50 of beans, 76 of bread, and 102 of maize. Maize-eating people, therefore,

suffer from pellagra because it has the lowest biologic value of the proteins of all the cereals, and if damaged or decayed it is all the less nutritious and pellagra arises more quickly. Vegetable proteins are not so easily assimilated as those in meat, and, further, the beans for the prisoners were not at first well cooked. These difficulties were all adjusted, but it was found that men might escape pellagra on a particular diet while resting, but succumbed as soon as they worked hard; so the diet for heavy labor, though showing already sufficient calory value and vitamin content, had to be increased; then the pellagra ceased.

A Medical Centenarian

Dr. J. S. S. Logie of Kirkwall has celebrated his one hundredth birthday. He is the doyen of the British medical profession, having taken his degree at Edinburgh in 1842. He is also the oldest elder of the Church of Scotland.

PARIS

(From Our Regular Correspondent)

May 13, 1920

Supplement to the Pharmacopeia

Since the publication of the 1908 edition of the French Pharmacopeia, a number of remedies have come into current use in therapeutics, and it therefore became necessary to inscribe these in the pharmacopeia. Nevertheless, in the supplement which has recently appeared, one searches in vain for mention of colloidal silver, emetin, bismuth carbonate and other substances. The omission is explained by the following fact: The committee of revision, nominated April 10, 1910, was on the point of issuing the supplement in its present form in August, 1914, when the war interrupted the work. Reorganized in November, 1918, the committee desired that no further delay occur in the printing, and it confined its work simply to such corrections as did not entail considerable changes.

The supplement is in two parts: The first (Addenda) contains the new articles to be inserted in the body of the Pharmacopeia; the second (Mutanda) comprises additions, corrections, modifications and deletions applying to a certain number of articles. Among the new substances are noticed veronal, stovain, novocain and antidysenteric and antimentingococcic serums. As for the modifications, these relate mainly to standards of purity required of certain substances. The committee has decided, in effect, that traces of impurities which are nearly inevitable in the industrial preparation of certain products are permissible whenever these do not result in attenuation, however slight, of the therapeutic activity of the drug. It is interesting to note a change in the maximum dose of sulphonal and trional, which has been fixed at 1 gm., instead of 2 gm.

Death of Glénard

Dr. Frantz Glénard, national correspondent of the Académie de Médecine since 1896, died recently at the age of 72. We owe to him much of our knowledge of visceroptosis (often called Glénard's disease) and the introduction and adoption in France of the treatment of typhoid fever by cold baths.

Franco-American Scientific Cooperation

Mention was made in a preceding letter (THE JOURNAL, Jan. 31, 1920, p. 338) of the cooperative spirit manifest in the scientific relations of France and the United States. Along the same line, it is interesting to note the reciprocal advancement of the scientific works and ideas of the two countries. Thus, Dr. J. Darier recently presented before the Académie de Médecine a translation of his *Précis de dermatologie* by Prof. Sigmund Pollitzer, New York, in the face of which the translator pays homage to the French

school of dermatology and in particular to the Hôpital Saint-Louis. On the other hand, Dr. A. C. Guillaume has just published a monograph on the great sympathetic system with special reference to its biologic reactions (*Le sympathique et les systèmes associés*). The author has made extensive use of the facts revealed by the works of British and American investigators (Gaskell, Higier, Head, Sir Edward A. Schafer, Pottenger, Barker and others). I think it should also be remarked that the publication of the *Archives of Neurology and Psychiatry* was announced in the last number of the *Revue neurologique* in flattering terms.

American Gift to Bacteriologic Institute

An American philanthropist, M. Douglas Flattery, has recently donated to the Institut bactériologique de Lyon the sum of 100,000 francs, the interest of which shall serve as an annual grant to a student of the University of Lyons for the pursuit of laboratory studies of infectious diseases.

Foreign Students—For or Against

At the ninth Congrès des étudiants, which recently met at Bordeaux, the following resolution was adopted: That free enrolment be granted to necessitous students by increasing the charges to foreign students. This was undoubtedly fostered by the fear of competition with foreigners who might settle in France after completing their studies. Not the least regrettable feature is the fact that the students should be capable of thinking of such a restrictive measure at the risk of prejudicing French influence abroad. An exactly contrary view seems to be maintained in official circles; in fact, a recent decree sets forth the credits which will be accepted to exempt foreign students from the school requirements. Students who might seek such exemption will simply have to prove that they have an adequate knowledge of the French language.

Printing of Graduation Dissertations

Two deputies, M. de Menthon and M. Ducos, have called the attention of the minister of public instruction to the great expense entailed by the compulsory printing of university dissertations. They inquired whether twelve typewritten copies would not serve the same purpose as the obligatory printing of 110 copies. The minister replied that printing the dissertation should be continued if for no other purpose than to serve as exchange with the principal foreign universities. This exchange should hardly be abolished, as it is one of the best methods of scientific propaganda.

Marriages

ARTHUR JUSTIN G. HENDERSON, Kiester, Minn., to Miss Hazel Olson of Estherville, Iowa, May 18.

JOHN FRANCIS BENNETT, Burlington, Wis., to Miss Florence Elizabeth Mauer of Milwaukee, May 31.

LLOYD JAMES BLAKEMAN, Chicago, to Miss Louise M. Pabst of Blue Island, Ill., recently.

RALPH WENDELL MITCHELL to Mrs. Margaret MacKenzie, both of New York City, June 2.

EUGENE ALEXANDER MOULTON to Miss Margery Lagerquist, both of Chicago, recently.

CLINTON B. ELLIS, Kansas City, Mo., to Miss Lillian St. Clair of Chicago, May 1.

LENA AUGUSTA GERALDSON to Mr. Frederick H. Miller, both of Napa, Calif., May 24.

MORRIS L. WEINSTEIN to Miss Marion H. Liebshutz, both of Chicago, June 1.

IDA RUTH GOROV, Chicago, to William W. Policoff of Philadelphia, May 30.

HARRY LEON STEELE to Miss Mary Stuart Osgood, both of Detroit, June 2.

Deaths

William Pollock Crumbacker, Independence, Iowa; Medical College of Ohio, Cincinnati, 1882; aged 62; a member of the Iowa State Medical Society; superintendent of the Independence State Hospital since 1902; assistant physician of the Athens (Ohio) State Hospital from 1884 to 1889; and superintendent of the institution from 1890 to 1892; superintendent of the West Virginia Hospital for the Insane, Weston, from 1893 to 1897; a member of the American Medico-Psychological Association; and contributor of numerous articles to the literature of hospital management and neuropathology; died, May 14, from pneumonia.

William St. George Elliott, Pasadena, Calif.; University of the City of New York, 1863; aged 81; a graduate in dentistry from the Philadelphia Dental College in 1870; formerly professor of operative dentistry in the National Dental College, London, England; acting assistant surgeon, U. S. Army, and assistant surgeon of Volunteers during the Civil War; dental surgeon to St. Mary's Hospital, New York City; died, May 23.

George Lafayette Loope, Seattle; College of Physicians and Surgeons, Chicago, 1886; aged 73; formerly surgeon to the Gogebic Hospital and to the Wisconsin Central and Northwestern systems at Bessemer, Mich.; a veteran of the Civil War, and during the World War on duty with the U. S. Shipping Board; at one time a member of the Michigan State Board of Health; died, May 11.

Francis Xavier Straessley, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1894; aged 60; also a graduate pharmacist; a member of the Medical Society of the State of Pennsylvania; a member of the common council of Allegheny and later of Pittsburgh, and a member of the staff of St. John's Hospital, Pittsburgh; died in St. Francis Hospital, Pittsburgh, May 24.

Clarence Miles Godding ⚕ Providence, R. I.; Harvard University Medical School, 1883; aged 62; surgeon to the outpatient department of the Rhode Island Hospital; visiting physician and surgeon at the Providence Lying-In Hospital, and attending physician to the Dexter Asylum; died at the home of his daughter in Providence, May 28.

James Buckley Tweedle ⚕ Weatherly, Pa.; College of Physicians and Surgeons in the City of New York, 1865; aged 83; health officer of Carbon County; local surgeon of the Lehigh Valley Railroad; once secretary of Carbon County Medical Society; surgeon of U. S. Volunteers during the Civil War; died at his home, May 21.

Otto Edward Forster, St. Louis; St. Louis Medical College, 1881; aged 61; a member of the Missouri State Medical Association; once president of the St. Louis Board of Health, and police commissioner; a specialist in diseases of the ear, nose and throat; died in Barnes Hospital, St. Louis, May 17, from heart disease.

Edward Cranch ⚕ Erie, Pa.; Georgetown University, Washington, D. C., 1873; New York Homeopathic Medical College, New York City, 1875; aged 68; president of the Erie County Medical Society in 1919; consulting physician to Hamot Hospital, Erie; died, May 20, from aneurism of the aorta.

Ernest Eldred Wells, Stillwater, Minn.; Chicago Medical College, 1898; aged 49; a member of the Minnesota State Medical Association; formerly coroner of Washington County, and for the last year county physician; once an alderman of Stillwater; died, May 17, from pneumonia.

Amos F. Green, West Jefferson, Ohio; Starling Medical College, Columbus, Ohio, 1894; aged 60; a member of the Ohio State Medical Association; formerly mayor of West Jefferson, and coroner of Madison County; died, May 21, from acute nephritis.

Louis Henry Mayer ⚕ Johnstown, Pa.; Jefferson Medical College, 1887; aged 58; a member of the staff of the Conemaugh Valley Memorial Hospital; president of the Cambria County Medical Society in 1896; died, May 22, from heart disease.

George E. Pettey ⚕ Memphis, Tenn.; Memphis (Tenn.) Hospital Medical College, 1888; aged 63; a specialist in internal medicine; while crossing a street in Memphis, May 20, was struck by a street car and died while being taken to the hospital.

William C. Bundy, Modesto, Calif.; College of Physicians and Surgeons, Chicago, 1885; aged 74; for many years a practitioner of Aurelia, Iowa; died at the home of his daughter in Primghar, Iowa, May 12, from cerebral hemorrhage.

William C. Bell, Detroit; Detroit Homeopathic College, 1911; aged 33; a member of the Michigan State Medical Society; assistant surgeon to the police department of Detroit since 1917; died, May 19, from pneumonia.

Hanford Charles Keith, Losantville, Ind.; University of the City of New York, 1882; aged 62; a member of the Council of Physicians and Surgeons of New Brunswick in 1882; died recently from heart disease.

Frank Rufus Searles, New York City; Long Island College Hospital, Brooklyn, 1892; Columbia University College of Physicians and Surgeons, New York City, 1899; aged 72; died, May 5.

George LeRoy Menzie, Oneida, N. Y.; College of Physicians and Surgeons in the City of New York, 1866; aged 77; surgeon of U. S. Volunteers during the Civil War, died, May 12.

John Miller, Netcong, N. J.; University of the City of New York, 1886; aged 57; a member of the Medical Society of New Jersey; died, May 7, from myocarditis.

Edgar Albert Tobey ⚕ Youngstown, Ohio; Western Pennsylvania Medical School, Pittsburgh, 1904; aged 45; died in Los Angeles, March 25, from uremia.

Robert Graves ⚕ Chicago; Northwestern University Medical School, 1893; aged 50; died in Wesley Hospital, Chicago, April 5, from pneumonia.

George Milton Warren, Warren, Ont.; Victoria University, Coburg, Ont., 1870; aged 72; died at the home of his brother in Toronto, April 8.

Lon S. Keith, Benzien, Mont.; Eclectic Medical Institute, Cincinnati, 1887; aged 62; died, April 29, from pneumonia following influenza.

George M. Hoehn, Mount Airy, Cincinnati; Medical College of Ohio, Cincinnati, 1885; aged 67; died, April 21, from arthritis deformans.

Cotesworth Pinckney Smith ⚕ Arkansas City, Ark.; University of Louisville, Ky., 1873; aged 76; died, February 2, from heart disease.

Charles W. Barker, Baltimore; University of Maryland, Baltimore, 1885; died at the home of his daughter in Baltimore, May 9.

Francis Joseph Todd, Oakland, Calif.; University of Michigan, Ann Arbor, 1883; aged 59; died, April 27, from cerebral hemorrhage.

Edward M. Goodwin, Toledo, Ohio; Albany (N. Y.) Medical College, 1863; aged 77; died, March 18, from heart disease.

John B. Wilson, Scott, Ohio; Fort Wayne (Ind.) College of Medicine, 1889; aged 61; died, May 7, from valvular heart disease.

Cary Hamilton Wilkinson, Galveston, Texas; Jefferson Medical College, 1869; aged 75; died, February 3, from uremia.

William M. Kerr, Savannah, Mo.; Miami Medical College, Cincinnati, 1868; aged 80; a veteran of the Civil War; died, May 4.

Archimedes Rose, Vernal, Utah; Jefferson Medical College, 1879; aged 64; died, April 12, from valvular heart disease.

Hampton Pinckney Whatley, Mineral Wells, Texas; Barnes Medical College, St. Louis, 1904; aged 48; died, April 22.

David C. Fouts, Conrad, Mont. (license, Indiana 1900); aged 75; formerly of New Salisbury, Ind.; died, April 12.

Carl Elias Roser, Lansing, Mich.; University of Michigan, Ann Arbor, 1920; died, April 27, from pneumonia.

Henry Taylor Jones, Almyra, Ark.; Long Island College Hospital, Brooklyn, 1878; aged 71; died, May 2.

Harvey Bacharach, San Diego, Calif.; Illinois Medical College, Chicago, 1899; aged 54; died, May 3.

Malcolm G. Violet, Waterford, Wis.; Hahnemann Medical College, Chicago, 1886; died, February 27.

William G. Hepworth, Steveston, B. C.; McGill University, Montreal, 1894; aged 52; died recently.

George H. Scott, Long Beach, Calif.; Jefferson Medical College, 1857; aged 90; died, May 9.

Shelby Lay, Everton, Ark.; University of Arkansas, Little Rock, 1898; aged 68; died, April 23.

⚕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED NOSTRUMS

Sealeaf Emulsion.—A shipment of this preparation, which the label described as "A Chocolate Cod Liver Oil," was made by the Sealeaf Emulsion Co., New York City, in September, 1917, in violation of the federal Food and Drugs Act. The Bureau of Chemistry analyzed the product and reported that it consisted essentially of cod liver oil with malt extract, chocolate, alcohol, aromatics and water. It was falsely and fraudulently represented as a cure for pulmonary diseases, coughs, colds and general debility; as a blood purifier and as a protection against lung trouble, rheumatism, weak kidneys, and all organic diseases; as a cure for asthma, bronchitis, and catarrhal affections and as a preventive and remedy for diabetes, malaria, gastritis, etc. In December, 1918, the company pleaded guilty and was fined \$50.—[Notice of Judgment No. 6851; issued May 4, 1920.]

Green Mountain Herb Tea, Sabine's Indian Vegetable Tea and Sabine's Indian Vegetable Cough Balsam.—Herman C. Lemke and Mary Sabine did business in Milwaukee, Wis., under the trade name A. J. Lemke Medicine Co. In September, 1917, this concern shipped quantities of "Green Mountain Herb Tea," "Sabine's Indian Vegetable Tea" and "Sabine's Indian Vegetable Cough Balsam." The Bureau of Chemistry analyzed these preparations and reported that the "Green Mountain Herb Tea" and the "Indian Vegetable Tea" consisted essentially of senna, fennel, elder flowers, anise, triticum, saffras, American saffron, ginger, licorice root, butter-bark, buckthorn and Epsom salt. The "Indian Vegetable Cough Balsam" was found by the same chemists to consist essentially of alcohol, chloroform, tar, resins, sugar and traces of alkaloids, the whole flavored with aromatics. "Green Mountain Herb Tea" was falsely and fraudulently represented as a cure for indigestion, liver complaint, kidney complaint and diseases to which women and children are subject. It was also alleged to be a blood purifier, to prevent malarial disorders, to make new rich red blood and to strengthen and invigorate. "Indian Vegetable Tea" was falsely and fraudulently represented as a cure for sick nervous headaches and indigestion, all scaly eruptions of the skin, pimples, scrofula, salt rheum, tetter, and different diseases of delicate females and young children, as well as being good for some other things. The "Indian Vegetable Cough Balsam" was falsely and fraudulently rep-

resented as a cure for incipient consumption, whooping cough, all throat and lung complaints, bronchitis, coughs, colds, hoarseness, etc. In February, 1919, Herman C. Lemke pleaded guilty and was fined \$300. A *nolle prosequi* was entered as to Mary Sabine.—[Notice of Judgment No. 6857; issued May 5, 1920.]

Bovinin.—The Bovinine Co., New York City, shipped in July, 1917, to Porto Rico, a quantity of "Bovinin" that was misbranded. The Bureau of Chemistry reported that analyses showed that the product was apparently a meat extract. It was falsely and fraudulently represented as a cure for anemia, nervous prostration, neuralgia, asthma, alcoholism, heart disease, diseases of children, St. Vitus' dance, catarrh of the bladder, menstrual disorders, diabetes, chronic gastritis, consumption and a few other things. It was further declared misbranded because the label did not declare the quantity or proportions of the alcohol it contained. In December, 1918, the Bovinine Co. pleaded guilty and was fined \$50.—[Notice of Judgment No. 6854; issued May 4, 1920.]

Fruit-a-Tives.—In October, 1918, the United States attorney for the District of Massachusetts, acting on a report of the Secretary of Agriculture, filed a libel of information asking for the seizure and condemnation of 84 dozen packages of Fruit-a-tives that had been shipped by Fruitatives Limited, Ogdensburg, N. Y. The Bureau of Chemistry reported that analysis of a sample showed that it contained essentially extracts of aloes, nux vomica (strychnin) and cinchona bark (quinin). The nostrum was declared misbranded because the label and cartons conveyed the impression that the laxative properties of Fruit-a-tives were due to the presence of fruit or fruit extracts when in fact the laxative properties were due to aloes and nux vomica. Furthermore, the preparation was falsely and fraudulently represented as a remedy, treatment or cure for indigestion, kidney irritation, skin diseases, headaches, backaches, sleeplessness, pelvic pains, nervous depression, catarrh, etc. In November, 1919, the claim-

ant, having filed an answer and a sufficient bond for the release of the product, judgment of condemnation and forfeiture was entered and the product was delivered to the claimant.—[Notice of Judgment No. 6884; issued May 4, 1920.]

Anticalculina Ebrey.—This preparation was being sold in July, 1917, in Porto Rico by the Ebrey Chemical Works of Humacao, Porto Rico. The Bureau of Chemistry reported that analysis showed the preparation to consist essentially of alcohol (28.8 per cent. by volume) colchicin, ammonium salts, vegetable extractives and water. The preparation was falsely and fraudulently represented as having the power of dissolving calculi, both renal and biliary, and to be a cure for diseases of the liver, kidneys and bladder, Bright's disease, diabetes, rheumatism, jaundice, dropsy and other conditions. It was further declared misbranded because the

What is the Therapeutic Value of HYPOPHOSPHITES?

A research conducted for the
Council on Pharmacy and Chemistry
SHOWED

There is no reliable evidence that they exert a physiologic effect. It has not been demonstrated that they influence any pathologic process. They are not foods. If they are of any use, that use has not been discovered.

Fellows Syrup of Hypophosphites
is an affront to sound therapy
"Syrupus Roborans"
An unscientific shotgun mixture
"Robinson's Hypophosphites"
is exploited with unwarranted therapeutic claims
"McArthur's Syrup of the Hypophosphites Comp."
is an irrational preparation.

This is a greatly reduced reproduction of one of numerous educational posters shown at the New Orleans meeting in the exhibit of the Council on Pharmacy and Chemistry. The hypophosphites were introduced into medicine in '58 by Churchill, who advanced the theory, long since discarded, that the so-called tuberculous diathesis was due to a phosphorus deficiency. It is now known that little phosphorus, if any, is assimilated from hypophosphites—far less than from phosphorus compounds of ordinary food. Due to the power of advertising, many physicians still prescribe hypophosphite combination, although there is neither scientific basis, nor clinical evidence to warrant such prescribing.

amount of alcohol present was not correctly stated on the label and it was falsely branded as to the country in which it was manufactured, being produced in Porto Rico but labeled as coming from the United States. The Ebrey Chemical Works in March, 1919, entered a plea of *nolo contendere* and was fined \$50 and costs.—[*Notice of Judgment No. 6900; issued May 4, 1920.*]

McDowell Ginseng Bitters.—Douglas E. McDowell, who traded as the McDowell Ginseng Garden, Joplin, Mo., shipped in November, 1917, a quantity of "McDowell Ginseng Bitters." Analysis of a sample by the Bureau of Chemistry showed that the product was a slightly acid solution of plant extract containing small quantities of glycerin and a zinc salt. The preparation was falsely and fraudulently represented as an effective cure for all stomach troubles except cancer; for all intestinal disorders, constipation, cholera infantum, acute dysentery, congestion of the liver, all female disorders and also as a general sexual tonic for men and women. In June, 1919, McDowell pleaded guilty and was fined \$20 and costs.—[*Notice of Judgment No. 6897; issued May 4, 1920.*]

Correspondence

LUNCHEON GLIMPSES OF SIR WILLIAM OSLER DURING THE WORLD WAR

To the Editor:—It was my good fortune to come in rather close contact with Sir William Osler in 1915 during the World War. He was consultant to one of the hospitals in South Devonshire, England, where I was working, and during his visits to this section, which would sometimes last a week, he would have luncheon with us every day after his ward rounds. These luncheons were a delight, as Dr. Osler's conversation was always sparkling and brilliant and full of humor. It became my custom to jot down in my diary much of what he said. In picking it up the other evening I found his remarks highly entertaining, and it occurred to me that perhaps the readers of THE JOURNAL would find them equally so.

Dr. Osler returned after a month's absence. As he made his visit through the hospitals he generated everywhere a spirit of warm friendship. He shook hands with all the physicians and nurses as he came to them, not overlooking the probationers. To those across the ward he waved a friendly greeting. One of the nurses asked him to let her take his photograph, and he grasped the arms of two of the physicians, saying: "Well, but I must have the boys with me." A few moments afterward the nurse, watching her opportunity, snapped him by himself. When he heard the click of the camera he looked up in surprise and exclaimed, smiling: "Oh! you thief."

As he met the secretary of the hospital, a very quiet and demure English woman, he asked her if she were being treated as well as she deserved. She blushed and replied that she thought she was. Whereupon Sir William added: "Well, if you are not, just let me know and I shall see that your treatment reaches that standard."

I showed him eight patients with gunshot wounds of the chest and he examined them carefully and dictated a note on each and then remarked to me: "Turn them over to Dr. Rest and Father Time, and with the assistance of the nurses and the culinary department they will soon come around."

He became very much interested in an aneurysmal varix of the popliteal which gave a pistol shot sound in both femoral arteries. When we went to lunch he soon had himself surrounded by every book in our library which contained any matter on aneurysms.

All of us were waiting in the drawing room for lunch. Dr. Osler was sitting on the corner of a table clicking his heels together with the buoyancy of a schoolboy, when the lunch bell sounded. But no one moved for a moment, and then Dr. Osler quickly remarked to Lady Osler and Mrs. Herbert Hoover: "Why, these boys get up at 6 o'clock (he must have surmised that we got up at 8 o'clock!) and I know they are hungry. Let's go in to lunch."

With us this day was a professor of sociology of a Western university and his wife, who were spending a year abroad studying social conditions. The Carnegie fund for university professors was mentioned. Dr. Osler said: "It is a splendid thing and in many instances a life saver to the professors' wives. They (the wives) have a most trying profession," he added, "looking after us, for the best of us are a poor lot—simply treading on the fame of our predecessors, throwing dust in the students' eyes, but fortunately some of them find us out." One lady replied, "Why, Dr. Osler, I think you deserve all you receive. I have heard of Dr. Osler's book on medicine for so many years that I expected to meet an old man." Dr. Osler laughed and said: "Oh, that was my father. He was a fine old man!"

Dr. Osler then continued: "That reminds me of a time when two other doctors and I were sent on a committee down on the eastern shore of Maryland to investigate a matter. When we reached the small town where we were going, I was introduced to the doctor of the community, a splendid type of the old school, and as he gave my hand a cordial shake, he asked hesitatingly showing surprise that I did not have silver locks: 'Well, are you the Dr. Osler of Baltimore who has written that great book on medicine?' As quick as a flash I replied, 'Oh my, no, that was my father!' 'Well, I thought so,' he added; 'Now, you give the old man my regards and tell him that I certainly like the way he presented the subject of infectious diseases, especially pneumonia and malaria.' 'I shall surely do that,' I said, 'and I know father will be very gratified.' As we remained here several days we thought we would have to tell the old doctor the truth, but we didn't."

"One day on this same trip, we had just finished lunch and were in the office of the hotel, when some one rushed in and asked very excitedly if Dr. Osler were there and if he would come down to the shore, for a lady had fallen off the pier and she might be drowning. I immediately said that I did not know much about resuscitating drowned people, that was out of my line, but that one of the doctors with me was the Hopkins specialist in this branch. This doctor was hurried to the scene and the fat woman who had ventured out too far on the pier and had slipped into the water was soon quite restored. The Baltimore papers gave an account of the incident the next morning, declaring that the woman's life was saved because of the prompt action of this doctor, a specialist in resuscitating drowning people, who happened to be near the scene. The fat woman has never forgotten the doctor's heroic deed and always sends him on her birthday a grateful letter accompanied by a personal photograph. By this time he surely has a sufficiently large collection to start a photographic gallery."

During the meal something was mentioned about the English not eating hot bread, and Dr. Osler replied: "That is the reason most doctors in England are poor. Why, I used to make my living in Baltimore," he continued, "from the people who eat hot bread, just as the doctors in Boston make their living from people who eat pie. One time I had my secretary, a very intelligent woman and a hot-bread eater, of course, compile the histories of the patients who had come to my office for one year, and you would be surprised at the large percentage in whom hot bread was the cause of their trouble."

Then, just to make a deeper impression on his hearers and with a twinkle in his eye, he said, "I believe it came to 68.5 per cent."

The professor of sociology, a very able but decidedly underdeveloped and undernourished man, said he had been to see five specialists on account of stomach trouble. (I afterward learned that all five of the specialists had told him that his trouble was neurasthenia.) When the professor left, Dr. Osler remarked: "That man is a very smart fellow; but it was too bad that he couldn't have chosen his parents, for he has too much brain for his body."

Coming out from lunch we sat around smoking, and some one mentioned what the Rockefeller relief fund for the Belgians had accomplished. Dr. Osler remarked that it was rather peculiar how Mr. Rockefeller first became interested in Johns Hopkins. He said: "At dinner one evening in Baltimore, Mr. Gilman, president of Johns Hopkins, and Mr. Gates, Mr. Rockefeller's right hand man, were sitting side by side, and Mr. Gates remarked that not long ago he picked up, by chance, a book on medicine by a man named Osler, and, looking through it, he became so interested in it that he purchased a copy and enjoyed intensely reading the section on infectious diseases. Not long afterward he told Mr. Rockefeller how engrossed he had become in this book and that he wished to present him with a copy, which he did. Soon afterward, Mr. Rockefeller told Mr. Gates that he was surprised to know that medicine was such a wonderfully progressive science and to learn what good work this man Osler was doing in Baltimore. Mr. Gilman was naturally much interested in Mr. Gates' story, and when he had finished he said: 'Now, Mr. Gates, if you would sit down tomorrow and write Dr. Osler what you have told me, I am sure he would feel very gratified.' Accordingly, in a few days I received a letter from Mr. Gates to the effect of the foregoing. After reading it, I handed it to Mrs. Osler, saying: 'Please put this letter in the safe. There may come a time when it will prove of service.'"

Dr. Osler went on to say: "A few years later when the Baltimore fire occurred and subjected the Hopkins Medical School to such a loss, I asked Mrs. Osler to look up the letter from Rockefeller's man. The letter was readily found and I wrote immediately to Mr. Gates, saying: 'You are doubtless aware of the awful fire which has visited Baltimore and of the loss which Hopkins has sustained. Several years ago you wrote me a very interesting letter, and it just occurred to me that probably you could interest Mr. Rockefeller in considering our unfortunate position at this time.'

"A few days later I received a telegram saying: 'Our Mr. Murphy will be with you tomorrow.' And 'tomorrow' 'our Mr. Murphy' came and spent several days in making an accurate estimate of the Hopkins loss. In the evening we had him at the Maryland Club and showed him that we were pretty good fellows!

"After Mr. Murphy's departure, several weeks expired. They seemed like months. We heard nothing, and our hopes had waned considerably, when I received a letter from John D., Jr., saying: 'My father has carefully considered your losses, which total \$430,000.67, and he wishes to know whether you would prefer to have a check or securities for the amount of \$500,000.' I immediately took my letter of good news around to the treasurer, and Mr. Rockefeller was informed that we would be pleased to receive a check for the \$500,000."

It was misting and cool, one day. Several of us were standing around the fire-place waiting for the lunch bell to sound. Just then Dr. Osler came in, bareheaded and without an overcoat. Lady Osler looked at him and exclaimed

in astonishment: "Why, Sir William, what do you mean by running around here in the rain, bareheaded and without an overcoat?" Sir William, who was just getting over a severe cold, evidently could find no plausible explanation for his carelessness, and replied, with a smile: "Well—ah—well, what's a little rain!" Mrs. Osler smilingly said: "Oh, you are getting quite smart. I think it is time I was taking you back this afternoon to Oxford, although I believe you would really rather stay here." Dr. Osler acquiesced: "After I have been around those antiques at Oxford for a while I don't know what I should do now and then unless I came down here with the boys."

EDGAR L. GILCREEST, M.D., San Francisco.
University of California.

"THE IMMEDIATE STERILIZATION AND CLOSURE OF CHRONIC INFECTED WOUNDS"

To the Editor:—In his article on the use of zinc chlorid in the sterilization of chronic infected wounds (*THE JOURNAL*, May 8, 1920, p. 1301), Dr. Babcock has treated altogether too briefly the danger in the use of this method, and has not sufficiently emphasized the caustic properties of a saturated solution of zinc chlorid on the walls of blood vessels. It is a powerful caustic reagent, capable of deep penetration, producing an eschar; and if brought in contact with a large artery or vein, as the femoral vessels, may cause a sudden profuse secondary hemorrhage which can be controlled only by ligation. This fact was repeatedly noted among the cases of chronic osteomyelitis of the femur in which operation by this method was performed at Fort McPherson, particularly when the solution was injected under pressure with a syringe.

In August, 1919, this method of introducing zinc chlorid throughout the fistulous tract was practically abandoned for this very reason. I believe it is a mistake to recommend the method to one who does not realize the danger, without making due emphasis on what one may expect. As has been borne out by experience, the patient after operation must be kept under most careful observation even as long as ten days, since instances of severe hemorrhage have occurred many days after operation, attributed by the pathologist to an erosion of the wall of a large vessel due to zinc chlorid.

Another point to be borne in mind is the toxicity of zinc chlorid, as a fraction of a drop injected into the ear vein of a rabbit has resulted in instant death to the animal.

It has occurred to me to write this letter because of the fact that shortly after the publication of this article I saw a case of a chronic osteomyelitis of the head and neck of the femur, and the attending surgeon proposed the injection of zinc chlorid into the sinus according to the method described by Dr. Babcock. The sinus was in the femoral region in very close proximity to the femoral vessels just below Poupert's ligament, and the proposed injection of zinc chlorid under pressure into this sinus would be attended with grave danger of a severe hemorrhage.

CLARENCE H. HYMAN, M.D., Cleveland.

"GAS CYSTS OF THE ABDOMEN"

To the Editor:—Apropos of an editorial entitled "Gas Cysts of the Abdomen" (*THE JOURNAL*, May 15, 1920, p. 1404), I reported such a case in *THE JOURNAL*, Dec. 19, 1919, under the title of "Emphysema of the Cecum." This case also was overlooked by Sloan (*Surg., Gynec. & Obst.* 30:389 [April] 1920) who is referred to in your editorial. His case appears to be the fourth reported in the United States. The first was

by Finney (THE JOURNAL, Oct. 17, 1908, p. 1291), said to be the nineteenth in the literature. The second was by Tunure, *Ann. Surg.* 57:811, 1913, the third by myself and the fourth by Sloan, with excellent remarks on pathology by Karsner. The title, "Diffuse Emphysema of the Intestinal Wall," which is used by Nitch and Shattuck (Proc. Royal Soc., Pathological Section, February, 1920); seems best to describe the condition in all its phases.

E. D. TWYMAN, M.D., Kansas City, Mo.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

RECKLINGHAUSEN'S DISEASE WITH SUPRARENAL INSUFFICIENCY

To the Editor:—In THE JOURNAL, May 22, 1920, is an abstract of an article on the treatment of Recklinghausen's disease with suprarenal extract by Chauffard and Brodin. Would it be possible to inform me how this treatment was carried out, whether 1:1,000 epinephrin was used, and if so whether by mouth or intravenously. I have a case diagnosed as neurofibromatosis in my service and would like to try the suprarenal treatment if I knew more about it.

ARTHUR J. ATTRIDGE, M.D., Providence, R. I.

ANSWER.—The only description of the treatment is that "suprarenal opotherapy was given for a few days in the form of suprarenal tablets (*comprimés surrénaux*). The general condition improved, the blood pressure rose from 15 to 17 (Pachon) and kept at this level on suppression of the treatment." The assumption of suprarenal insufficiency was based on the diffuse bronzing (*mélano-dermie*); the symmetrical pigmentary patches; the rather symmetrical arrangement of the forty cutaneous or subcutaneous fibromas; the low blood pressure in the apparently vigorous man of 32, and the presence of a large glandular process in the neck, of four years' standing, apparently a tuberculous adenopathy. Chauffard reported in 1896 a case of pigmentary fibromatosis in which both suprarenals were the seat of malignant disease, and Bourcy has since reported a similar case. Oddo and Jullien noted pigmentation of the mucous membranes in three cases of Recklinghausen's disease, and in three cases on record, as in the case here reported, suprarenal treatment was followed by immediate and notable improvement (Pic and Jullien). The writers conclude with the remark that "the fibromatous process may invade the suprarenals, and thus is explained part at least of the symptomatology of Recklinghausen's disease."

ACETYSALICYLIC ACID AND "ASPIRIN BAYER"

To the Editor:—Is the acid acetylsalicylic, advertised by some manufacturers at cheap prices, identical with aspirin, and can it be relied on as an efficient substitute?

C. E. W.

ANSWER.—The following products have been tested and found satisfactory by the Laboratory of the Council on Pharmacy and Chemistry of the American Medical Association, and the products are described in New and Nonofficial Remedies:

- "Acetylsalicylic Acid, Heyden," Heyden Chemical Works.
- "Acetylsalicylic Acid, M. C. W.," Mallinckrodt Chemical Works.
- "Acetylsalicylic Acid, Merck," Merck & Co.
- "Acetylsalicylic Acid (Aspirin) Monsanto," Monsanto Chemical Works.
- "Acetylsalicylic Acid-P. W. R.," Powers-Weightman-Rosengarten Company.
- "Acetylsalicylic Acid-Squibb," Squibb and Sons.
- "Aspirin-L and F," Lehn and Fink.

An examination made in the laboratory two years ago showed that the market supply of acetylsalicylic acid at that time was of equal quality with the German-made "Aspirin Bayer." The inquirer will be interested to learn that the "Aspirin Bayer" now made in America, and exploited with misleading claims in advertising issued by "The Bayer Company," is actually controlled by the Sterling Products Company, which sells "patent medicines," such as cascavets, danderine, etc.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.
- ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
- CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.
- COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
- CONNECTICUT: Hartford, July 13-14. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.
- CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
- DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
- DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
- FLORIDA: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.
- FLORIDA: Regular Board, Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
- ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
- INDIANA: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, Crawfordsville.
- IOWA: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
- KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.
- MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
- MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.
- MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
- NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.
- NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.
- NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
- NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.
- OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.
- OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
- PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.
- RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
- SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
- SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Waubay.
- TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.
- UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.
- VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.
- VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.
- WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.
- WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.
- WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Utah January and April Examinations

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, Jan. 5-6, 1920. The examination covered 19 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 2 candidates examined, 1 passed and 1 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
John A. Creighton Medical College.....	(1919)		1
FAILED			
St. Louis College of Phys. and Surgeons.....	(1918)		1
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University	(1916)		Illinois
Columbia University	(1918)		New York
Jefferson Medical College.....	(1873)		Colorado

Dr. Harding also reports the written examination held at Salt Lake City, April 5-6, 1920. Two candidates were examined and passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
University of Illinois.....	(1920)		1
Jefferson Medical College.....	(1919)		1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College.....	(1919),	(1920)	Illinois
Kentucky School of Medicine.....	(1906)		Nevada
Tulane University	(1904)		Texas
Columbia University	(1918)		New York
University of Pennsylvania.....	(1912)		Penna.

Connecticut March Examination

Dr. Edwin C. M. Hall, secretary, Connecticut Homeopathic Medical Examining Board, reports the written examination, held at New Haven, March 9, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Two candidates were examined and passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Minnesota Coll. of Homeo. Med.....	(1905)		86
New York Homeo. Med. Coll. and Flower Hospital..	(1919)		92

Maine March Examination

Dr. Frank W. Searle, secretary of the Maine State Board of Registration in Medicine, reports the written examination held at Portland, March 9-10, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the three candidates examined, 2 passed and 1 failed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University	(1918)		83
McGill University	(1918)		85

FAILED			
Montreal School of Medicine and Surgery	(1919)		77

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Woman's Medical College, New York City.....	(1890)		New Hamp.

*Fell below 60 per cent. in anatomy.

Book Notices

SYPHILIS: A TREATISE ON ETIOLOGY, PATHOLOGY, DIAGNOSIS, PROGNOSIS, PROPHYLAXIS AND TREATMENT. By Henry H. Hazen, A.B., M.D., Professor of Dermatology and Syphilology, Medical Department of Georgetown University. Cloth. Price, \$6. Pp. 647, with 160 illustrations. St. Louis: C. V. Mosby Company, 1919.

The need of "a small book covering the whole field of syphilis in an authoritative way" is stated in the preface. The author and his collaborators are to be congratulated on their success in meeting this need. Dr. Reasoner writes on infection and immunity, Dr. H. A. Fowler on the male genito-urinary tract, Dr. John Dunlop on the bones, joints, muscles, tendons and bursae, Dr. John Lind on the central nervous system, with contributions by Dr. John Hough, Dr. Virginus Dabney on the eye, Dr. L. H. Greene on the ear, Dr. Craig on the Wassermann reaction, Dr. Schamberg on the toxicology and therapeutic testing of arsphenamin, and Dr. Walter van Sweringen on roentgenography in the diagnosis of syphilis. The author also acknowledges his indebtedness to Dr. Edward Hiram Reede in the chapter on affections of the endocrine glands. The material is necessarily presented in brief form. No space is wasted, however, and the excellent bibliography supplies those who would study any part of the subject more extensively. Some important subjects have been given scant attention. Secondary papules on the palms and soles, for instance, certainly deserve more than passing notice. Criteria of cure and differentiation between the various spirochetes might well have been accorded more space. The index, too, could well be made more extensive. Differential diagnosis on the whole is well presented, more thoroughly than in many of the standard books. This makes it a valuable work for the general practitioner. Especially worthy of mention is the discussion of prognosis, treated by Dr. Hazen with common sense and moderation, avoiding the extremes of pessimism and of optimism. The discussion by

Craig of the interpretation of the results of the Wassermann reaction is also to be commended as a sensible presentation of facts which, if applied to the work of the laboratory and the estimation of its value by the clinician, would clear up a great deal of the misunderstanding and false interpretation of that important test. The book presents a great mass of invaluable information in a readable form. It is well printed on good paper, and the illustrations are good.

MANUAL OF OBSTETRICS. By Edward P. Davis, A.M., M.D., F.A.C.S., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. Second edition. Cloth. Price, \$3 net. Pp. 478, with 163 illustrations. Philadelphia: W. B. Saunders Company, 1919.

This is a concise manual of modern obstetrics. In it Davis has covered the subject in a thorough and logical manner, and has brought the subject matter of this second edition well up to date. It can be recommended as a handbook for students and as a reference book for nurses who specialize in obstetric nursing. The print is large and easy to read, the illustrations numerous and clear, and the publication carefully done. One of the few mistakes in proof-reading occurs on page 95 under the caption of the physiology of pregnancy, where Davis says: "If the patient is not well nourished during pregnancy the alkalinity of the blood increases." He doubtless means "decreases." In discussing the diagnosis of pregnancy he states that "the eyes must be noted for signs of exophthalmic goiter," thus giving the impression that the latter condition is a usual accompaniment of pregnancy, whereas it is one of the rare complications. Again, under diagnosis of pregnancy by the roentgen ray, he is vague as to just when in pregnancy the roentgen ray will show the fetal skeleton, and he fails to mention its value near term in recognizing multiple pregnancy. Occasionally a statement is found which is more confusing than helpful, such as: "The presence or absence and the degree of leukocytosis should indicate the power of the patient's resistance and the possibility of infection and suppuration." This quotation, taken from the diagnosis of broad ligament pregnancy, does not in any sense contribute to the diagnosis of the condition under discussion. For the most part, Davis' treatment is based on sound principles and good judgment; however, such advice as : (a) the use of from 1 to 1.5 c.c. of pituitary extract in inertia (p. 222); (b) the use of a sharp spoon curet for interruption of pregnancy (treatment of toxemia of pregnancy); (c) the application of forceps to the breech (forceps), and (d) instructing nurses to give intra-cervical douches in postpartum hemorrhage, is risky if not actually dangerous advice. Still one more statement requires revision, which appears in the description of the technic of the Braxton Hicks version: "The operator observes anti-septic precautions, and if he is accustomed to work with rubber gloves he should use them." There is no *if* in the obstetrics of today!

ORTHOPEDIC AND RECONSTRUCTION SURGERY, INDUSTRIAL AND CIVILIAN. By Fred H. Albee, A.B., M.D., F.A.C.S., Professor and Director of Department of Orthopedic Surgery, New York Post-Graduate Medical School. Cloth. Price, \$11 net. Pp. 1138, with 804 illustrations. Philadelphia: W. B. Saunders Company, 1919.

This book is extensive in its scope, including the ordinary field of orthopedic surgery, with military and much of general surgery of the extremities as a text. It lacks balance in that topics are unevenly discussed. Those in which the author is especially interested and previously contributed, as tuberculosis, are generally given in great detail with much argument in favor of his methods, while others, as osteomyelitis, are incomplete. It is essentially a treatise on therapy, and a commendable feature is that operative methods receive much more attention than is given in other books on orthopedic surgery. The accounts of the author's extensive experience, especially in the field of bone transplanation, are of great importance. Aside from bone repair, the pathology is not well given. Too much space is devoted to arguments in favor of the author's methods and in establishing his priority for various operative procedures. A valuable bibliography is attached to each chapter.

Medicolegal

Liability for False Representations as to Disease

(*Manweiler et al. v. Truman (Ind.)*, 125 N. E. R. 412)

The Appellate Court of Indiana, Division No. 2, affirms a judgment for \$100 damages in favor of plaintiff Truman in this action brought to recover for alleged false representations made to her by the defendants with regard to the nature of the disease with which one of them was suffering. The court says that the plaintiff alleged in her complaint that the defendants came to her home and represented to her that defendant Manweiler was sick with lung fever, and that they had no place where he could be taken care of, and requested her to take him into her house and care for him until he was well enough to be moved; that he was so sick that he could not be taken to a hospital; that he was not ill with a contagious disease; that she told them that she could not take him or care for him if he was sick with a contagious disease; that she relied on the defendants' statement that he was not sick with a contagious disease, and took him into her house; that a short time thereafter she learned that he was so ill with diphtheria that he could not be moved; and that in order to save his life she nursed and cared for him. It was also alleged that when the defendants made these representations to the plaintiff they knew of Manweiler's true condition, and by reason of their false statements caused her to take him into her home. The defendants contended that there was no evidence of intent or design on their part to perpetrate a fraud on the plaintiff; that whatever statements were made by them were made in good faith and based on the statement of a reputable physician. But the question as to whether the defendants falsely represented that Manweiler was sick with lung fever when they knew he was suffering with diphtheria, or whether they acted in good faith with the plaintiff was a question of fact for the jury, and the latter found specifically that the defendants, at the time they took Manweiler to the home of the plaintiff, knew he was suffering with a contagious disease, and that they then knowingly perpetrated a fraud on her. This court cannot set its judgment on the weight of the evidence against that of the jury and the trial judge, and say that there was reversible error on the ground that the verdict was not sustained by sufficient evidence.

Insufficient Evidence of Malpractice—Improper Reference to Insurance Company

(*Sherwood v. Babcock (Mich.)*, 175 N. W. R. 470)

The Supreme Court of Michigan reverses a judgment for \$1,000 damages that was rendered against the defendant for alleged malpractice, and orders that in its stead a judgment be entered for the defendant, notwithstanding that the verdict of the jury was against him. The court says that, in April, the defendant was called to the home of the plaintiff to treat a grandchild of the latter named Edwin Sen, who died on May 16. The case was diagnosed by the defendant as one of pneumonia, but meningitis developed, which was the immediate cause of death. Then a child of the plaintiff, named Irene, became ill, and died on May 30, the cause of her death being reported as typhoid fever. Also, two younger children were taken ill, after Irene, and their illness was diagnosed as typhoid fever, for which they were treated, and from which they recovered, although soon after the death of Irene the defendant was discharged, and another physician was called to take charge of them. The defendant consulted with another physician twice, and with two other physicians once, during the attendance on the family. Three claims of negligence were alleged: (1) Failure of the defendant to segregate the other children from Edwin Sen when he was taken ill; (2) failure to report the illness of Edwin Sen to the health board; (3) and not treating the children for cerebrospinal meningitis. When the other physician was called to take charge of the younger children they were convalescing. The defendant complained that, in spite of the fact that there was no medical testimony supporting the allega-

tions in the plaintiff's declaration, and that all the medical testimony was in direct contradiction of those claims, the case was submitted to the jury and the verdict rendered and judgment entered for the plaintiff. The trial judge seemed to have submitted the case to the jury on the theory that it had a right to gather from the symptoms given by the plaintiff and his wife, which they observed during the illness of the children, coupled with the statement of the second physician that he treated the patients as though they were suffering from meningial infection, whether or not Edwin Sen had cerebrospinal meningitis, and whether or not the other children were suffering from the same disease. But, from a careful reading of the record, the supreme court is impressed with the fact that the verdict and judgment entered were contrary to the great weight of the evidence in the case. It is impressed with the contention that a judgment should have been entered in favor of the defendant notwithstanding the verdict of the jury, and that error was committed in overruling a motion therefor. A careful reading of the testimony of the second physician showed that it fell far short of furnishing evidence that any of the children had cerebrospinal meningitis. He used the words "possibility," "suspect" and "perhaps." The testimony was too problematic and speculative to warrant the submission of the question to the jury. It gave the jury an opportunity to speculate, and the evidence failed to make a case of malpractice.

The court is also impressed with the contention that it was prejudicial error for counsel for the plaintiff to say, in his argument of the case to the jury, "It is for you, gentlemen, to say whether Dr. Babcock or the insurance company, whose very able attorney is here today. . . ." This language was not only improper, but was reprehensible, and was used without any provocation, there not being a word of testimony in the case with reference to an insurance company.

Rules Relative to Insanity as a Defense to Crime

(*Thomson v. State (Fla.)*, 83 So. R. 291)

The Supreme Court of Florida, in reversing a conviction of murder on the ground that the evidence raised a reasonable doubt as to the defendant's sanity at the time of the homicide, says that when the defense of insanity is relied on, the rule in force in the state of Florida is that if the evidence introduced tends to rebut the presumption of sanity on the part of the accused, and the jury entertains a reasonable doubt, after due consideration of all the evidence as to his sanity, it is their duty to acquit.

The statutory definition of murder, "the unlawful killing of a human being, when perpetrated from a premeditated design to effect the death of the person killed," includes the element of a rational agency, and it devolves on the state to show this as well as any other element of the crime. The law, however, presumes that all men are sane, and, in the absence of evidence indicating a contrary state of mind, both court and jury are justified in acting on this presumption; and when the evidence establishes the criminal act, and indicates nothing as to the mental capacity of the accused to commit the deed, a conviction is not only authorized, but should be had. If, however, there arises from the evidence coming from any quarter a reasonable doubt as to the sanity of the accused, the presumption of law is overcome, and he is entitled to an acquittal, unless the state meets and overcomes this reasonable doubt arising in his favor.

When insanity of a permanent type, or of a continuing nature, or possessed of the characteristics of an habitual or confirmed disorder of the mind, as distinguished from temporary or spasmodic mania, or disorders of mind produced by the violence of disease, is shown to have existed a short time prior to the commission of an act, it is presumed to continue up to the time of the commission of the act, unless this presumption is overcome by competent testimony.

When insanity of the defendant is a real issue in a criminal prosecution, the court should charge the jury that, if the defendant is acquitted on the ground of insanity, the jury should so state in the verdict in order that appropriate action may be taken by the court under Section 3992 of the General Statutes of 1906.

Society Proceedings

COMING MEETINGS

American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Maine Medical Association, Augusta, June 29-30.
Montana State Medical Association, Helena, July 14-15.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Jersey Medical Society, Spring Lake, June 15-17.
North Dakota State Med. Assn., Minot, June 15-16.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., May 3, 1920

(Continued from page 1600)

Certain Phases of the Histamin Problem

DRS. KARL K. KOESSLER and MILTON T. HANKS, Chicago: Perfectly fresh total glands of steers were used. It was found that there is no histamin present in the hypophysis. A typical peptone shock was obtained by the injection of a histamin free peptone; hence peptone shock and histamin shock are not identical. It was found that Witte's peptone—100 gm.—contains the equivalent of 0.00335 gm. of histamin^{*}dichlorid.

Basal Metabolism from Birth to Puberty

DR. FRITZ B. TALBOT, Boston: The great interest in basal metabolism is evidenced by the increasing number of reports of the basal metabolism of pathologic conditions. In the past there has been no standard for comparison of infants and children other than the scattered observations of Rubner, Du Bois, Murlin, Howland and a few others. The basal metabolism of normal infants and children has been studied by Benedict and myself during a period of eight years, ending in June, 1919. In this series of investigations were included more than a hundred normal male children and seventy normal female children. In many cases the metabolism of the same child was obtained at different ages. Curves of the total metabolism for twenty-four hours as referred to age and weight, to the metabolism per kilogram referred to both age and weight, and to the metabolism per square meter of body surface referred to both age and weight, may be taken as standards to which may be applied observations on pathologic conditions.

Relation of Sputum Bacteria to Asthma

DR. FRANCIS M. RACKEMANN, Boston: Asthma is a syndrome that may be divided according to its cause into two groups, extrinsic and intrinsic. We are here concerned with those cases of intrinsic asthma in which a focus of bacterial infection in the bronchi is assumed to be the cause. The method of study has been to make intradermal tests with pure vaccines made from organisms isolated on blood agar plates from the patient's sputum, and to institute treatment on the basis of these tests. An early positive skin test was found in one-half hour to consist of an urticarial wheal surrounded by erythema, but late positive tests were found in twenty-four hours to resemble an inflammation. One hundred and twenty-nine organisms were isolated from thirty-nine patients. They included nonhemolytic streptococci, 60 per cent.; hemolytic streptococci, 13 per cent, and staphylococci, 8 per cent. The pneumococcus was found only three times. Twenty-five of this group of thirty-nine patients gave a positive test to one or more vaccines. There were twenty positive tests to an autogenous vaccine and fifteen positives to a heterologous vaccine. In addition to his original group, seventeen patients were tested with only heterologous vaccines, and nine reacted positively. Thus, in the whole group of fifty-six patients, thirty-four, or 67 per cent., gave a positive skin test.

Taking the two groups together, 358 individual intradermal injections were made; 19.5 per cent. of these were classed as positives, which figure includes 7.5 per cent. early positive,

7.2 per cent. late positive, and in addition 4.8 per cent. positive both early and late. With reference to the individual organisms, and considering only those tested on at least five patients, a total of 283 tests were made with thirty-two different vaccines. Fourteen of these thirty-two organisms gave no test at all, and of the four that did give more than two positives, one was a hemolytic streptococcus with three positives, and two were *Staphylococcus albus* with four each. One, a gram negative bacillus, was irritating in that ten positives were obtained in eighteen tests. Treatment with small doses of pure vaccines given at seven-day intervals was carried out in twenty-six patients with results that were in very close accord with the presence or absence of a positive skin test. Of the sixteen patients who were treated with the organism to which they gave a positive test, fourteen were treated successfully. In ten instances this treatment was with an autogenous vaccine. However, ten other patients were treated in the face of a negative test, but with no success at all. The organisms used in treatment, whether successful or unsuccessful, included representatives of each variety found, but were mostly nonhemolytic. These results indicate that the treatment of intrinsic asthma with vaccines is specific.

DISCUSSION

DR. KARL K. KOESSLER, Chicago: Several years ago Dr. Moody and I reported on the results of a bacteriologic study of the aerobic and anaerobic micro-organisms isolated from the bronchial expectoration of patients suffering from bronchial asthma. We emphasized that in the treatment of this disorder by means of bacterial autogenous vaccines, it is essential for obtaining the best therapeutic results to incorporate in the vaccine the anaerobic organisms, together with the common aerobic (streptococci, pneumococci, pneumobacilli, *Micrococcus catarrhalis*, staphylococci, etc.), for the anaerobic bacteria and cocci often show a stronger proteolytic power than the aerobic ones, an activity of fundamental bearing in the production of the bacterial type of asthma. The invasion of the bronchial structure by micro-organisms might produce bronchospasm in a variety of ways. Destruction of the protecting layer of the ciliated epithelium, with losses of substance or minute ulcer formation involving the submucosa, exposes the contracting mechanisms to thermal as well as chemical influences (comparable to similar mechanism underlying pylorospasm and angiospasm). Toxic material formed by micro-organisms in the bronchial structure itself can thus be easily absorbed. But also through the blood and lymph way, toxic substances of the type of histamin can be absorbed even from distant foci of infection, associated invariably with protein destruction, substances which produce a marked spastic contraction of the smooth muscle fiber system of the bronchial structure. We thus believe that a large number of cases of bronchial asthma are the result of amin formation and amin absorption, and belong to a group of disorders for which we might use the term "aminosis."

Further Studies on Active Immunization Against Pneumococcus Pneumonia in Monkeys

DR. RUSSELL L. CECIL, New York: Small doses of pneumococcus Type I saline vaccine, administered subcutaneously, do not confer complete immunity against a subsequent pneumococcus Type I pneumonia, although they do modify favorably the course of the disease. Three large subcutaneous injections of vaccine (20, 40 and 60 billion, respectively) given at intervals of one week cause very little reaction in the monkey, and are sufficient to prevent infection altogether. Small doses of pneumococcus vaccine will also produce an adequate immunity, if given intravenously. Small doses of living virulent sensitized pneumococci, when injected subcutaneously, may give rise to a temporary pneumococcus bacteremia, from which the monkey recovers. Monkeys vaccinated with the sensitized culture of pneumococcus failed to develop pneumonia when injected intratracheally with living virulent pneumococci. At necropsy, however, two of the monkeys in this series showed small multiple abscesses in the lungs. These experiments afford a rational basis for prophylactic vaccination against pneumonia in man. It is true

that the dose of vaccine employed in these experiments was larger than that which is usually administered to man; but on the other hand, it must be emphasized that the monkeys received five or six hundred virulent pneumococci directly into the trachea, while in the case of man, pneumonia is probably induced by a much smaller number of micro-organisms.

Effect of Salicylates on Formation of Immune Bodies

DR. HOMER F. SWIFT, New York: The known action of salicylates is as an antipyretic and an analgesic in concentrations that can be safely administered. In strong concentrations it is also antiseptic; but in the concentrations in which it is present in the body, it is considered as having no antiseptic action. Whether it exerts an antibacterial action in the body in therapeutic concentrations is as yet not established. In addition to the above mentioned actions which are exerted in many diseases, in rheumatic fever it has apparently a true antiphlogistic action, as shown by the rapid recession of the various signs of acute inflammation about the affected joints, following its administration in sufficient doses, as well as by the arresting of the spread of the affection to other joints. It is evident, however, that the course of the general infection is not shortened, nor are the cardiac complications prevented by the drug. Consequently, it seemed of interest to determine the exact influence of salicylates on the development of immunity. The averages of several animals showed that the group that received salicylates had a lower antibody formation than the untreated controls. The difference was more marked in those experiments in which the antigen was given in small amounts with a correspondingly low concentration of antibodies in the entire group. The same general result was found with all three types of antibodies studied. An effort was then made to determine the mechanism of this depression in the formation of antibodies. The salicyl-treated animals showed no greater loss in weight or appetite, nor more marked depression in the condition of the salicyl-treated animals than in the controls. When the bacteria were given in the living state, the febrile response was as great in the salicyl-treated animals as in the controls. The effect of exposure of antigen to solutions of sodium salicylate in vitro and subsequent injection of the salicylated bacteria or red blood cells pointed to the depression's being due to a direct action of the salicyl on the antigen. In two series of experiments, untreated controls showed the highest antibody curve; the next highest was shown by the animals that received salicylates by mouth and antigen intravenously, and the lowest by the animals that were immunized with salicylated antigen. Marjorie Cook has lately shown that the formation of antibody is dependent on the rate of absorption of the antigen. Reasoning by analogy of effect, it is suggested that the depression of antibody formation may be due to a decreased rate of absorption of the antigen in salicyl-treated animals. It is also suggested that the antiphlogistic effect may be due to a depression of the irritative properties of the etiologic agent in rheumatic fever.

"Acute Dilatation of the Heart," So-Called, Occurring During or Following Surgical Operations; Its Mechanism and Management

DR. SAMUEL A. LEVINE, Boston: Sudden cardiac upsets were observed in nine surgical patients at the Peter Bent Brigham Hospital. The condition was called acute dilatation of the heart in some cases, and might well have been similarly diagnosed in the others had not the true nature of the disorder been discovered. "Acute dilatation of the heart" has been used as a medical waste-basket; whenever possible (as happened in all of the cases taken up here) a more definite and well understood name should be given to the condition. The upsets all occurred suddenly and unexpectedly; three while the patients were under ether anesthesia (one before the actual operation had started, one during the operation and one just after it had been completed), and the other six during surgical convalescence, from one to nine days after the operation. The attacks varied in severity from being entirely unobserved by the patient to complete collapse, with cessation of breathing, cyanosis and danger of impending death. The duration of the attacks was from several minutes

to several days. How long those attacks that were deliberately arrested by medical procedures would have lasted it is difficult to tell. Electrocardiograms of six of the patients were taken during the upset, and the clinical course of the other three left no doubt as to the diagnosis. Three were found to be due to paroxysmal auricular tachycardia, four to paroxysmal auricular fibrillation, and two to paroxysmal auricular flutter. All but two were transient in nature. The three cases of paroxysmal auricular tachycardia occurred while the patients were under ether anesthesia, and in each instance the attack ended either by direct vagal pressure over the carotid artery or by ocular pressure. One of them went into collapse on the operating table, stopped breathing, the heart rate suddenly jumped to 216, and the life of the patient seemed to be in imminent danger. Left vagal pressure brought the attack suddenly to an end. The proper administration of digitalis controlled the heart's action in the cases of paroxysmal auricular fibrillation and flutter.

In reviewing these nine cases, no constant etiologic factor could be found. It seems impossible to predict what type of surgical patient will have a paroxysmal cardiac upset, and very likely some of these patients would have had similar paroxysms at some future date even if they had not been subjected to operations. Roentgen-ray studies of the size of the heart could not be made during these attacks, but others in the medical wards have had roentgenograms taken during and after similar attacks without showing any appreciable dilatation, except in a very rare instance. It is important to appreciate that "acute dilatation of the heart" is a medical diagnosis which rests on very insecure ground, and that wherever possible, careful observations of the mechanism of the heart beat should be made, in the hope of accurately describing the condition and instituting the proper treatment.

The Enzymes of Pneumococcus

DRS. O. T. AVERY and G. E. CULLEN, New York: In the study of the enzymes of pneumococcus, use has been made of the fact that pneumococci rapidly undergo solution in the presence of bile. By dissolving the organisms in bile and testing the cell-free solution on suitable substrates, enzymes are readily demonstrable. These enzymes possess the power of actively hydrolyzing peptones to simpler peptides and amino acids; of converting carbohydrates into simpler products, and of splitting esters into fatty acids. In demonstrating carbohydrate cleavage, however, bile was found to inhibit completely the hydrolysis of sucrose and starch, so that a different method of preparing the enzyme solution was necessary. For this purpose it was found that the organisms suspended in tenth molar phosphate solution of pH 6.2 undergo disintegration quickly with the release of intracellular substances capable of actively hydrolyzing carbohydrates. By the methods described it is possible to prepare enzyme solutions which are sterile and by bacteriologic technic to maintain sterility throughout the experiment, without the use of antiseptics.

Evidence is presented that these enzymes exist preformed within the bacterial cell and are therefore of the type known as endo-enzymes. The proteolytic enzymes exhibit greatest activity in the further hydrolysis of the intermediate products of protein digestion, such as peptones. From 30 to 40 per cent. of the available peptid-nitrogen in peptone substrates is split to amino nitrogen. This fact, together with the observation that the zone of its optimal activity is pH 7.8, indicates that this enzyme is erepsin-like in character. The curve of its activity rapidly falls with increasing acidity, until at a pH of 4.5 complete inhibition results. The proteolytic enzyme is sensitive to heat; an exposure of ten minutes at 100 C. destroys its activity. Dissolved in ox-bile, the enzyme retains about 40 per cent. of its activity over a period of six weeks.

By similar methods the fact has been established that within the pneumococcus cell there exists a remarkably active lipase; the acid formed by its action on 2 per cent. tributyrin representing a normality of about twentieth normal butyric acid. The maximum activity of the intracellular lipase occurs at a reaction of pH 7.8, and progressively decreases with increasing acidity of the substrate. The optimal reaction corresponds closely with that of the endopeptonase, and

both coincide with the optimum hydrogen ion concentration for growth of pneumococcus. It has been found that loss of virulence is not associated with a corresponding loss of either erepsin or lipase activity.

In germ-free filtrates of broth cultures of pneumococcus, enzymes are found free in solution only when growth has progressed to the phase in which cell disintegration begins and liberation of the intracellular substances into the culture medium occurs. During the early stages of growth of pneumococcus when, under optimal cultural conditions, organisms are multiplying at their maximum rate, and little or no cell death is occurring, enzymes cannot be detected in culture filtrates.

The inhibiting action of bile on the activity of the carbohydrates, splitting enzymes of pneumococcus is overcome by effecting cytolysis of the bacterial cells in phosphate solution at pH 6.2. Alternate freezing and thawing of the bacterial suspension greatly facilitates rupture of the cell membrane and liberation of the intracellular substances. In this manner it has been demonstrated that there exist intracellular enzymes capable of converting sucrose into monosaccharides (invertase), of splitting starch through the dextrin to reducing sugars (amylase), and of hydrolyzing inulin (inulinase). The zone of hydrogen ion concentration in which these enzymes are active bears a striking correlation to the biologic activity of the living cell.

In addition, certain other active intracellular enzymes are present in solutions of pneumococcus bodies. These, in brief, are in the nature of bacteriolytic enzymes capable of causing complete and rapid dissolution of heat-killed bacteria.

Effect of Experimental Lesions of Branches of Bundle of His on Form of the Electrocardiogram

DRS. FRANK N. WILSON and GEORGE R. HERRMANN, St. Louis: In a dog attempt was made to cut the left branch of the bundle of His by thrusting a small tenotomy knife through the wall of the left ventricle and pressing the cutting edge against the septum. The characteristic ventricular complexes of left bundle-branch block appeared at once and were recorded. They persisted only a few minutes, however, giving place to complexes of the normal type. Right bundle-branch block was then produced by thrusting the knife through the wall of the right ventricle and pressing on the septum with the noncutting edge. Characteristic ventricular complexes appeared at once and persisted for about one and one-half hours. At the end of this time, complexes of normal type again returned. The dog was killed, the heart was opened, and drawings were made of the branches of the bundle of His and the lesions produced. From a comparison of the lesions produced with the electrocardiograms recorded, we confirmed the belief that lesions of the two chief branches of the bundle of His are accompanied by characteristic electrocardiograms. Lesions of the subdivisions of these branches did not in our experiments produce more than minor changes in the form of the electrocardiogram.

Virulence of Streptococci and Hemolysin Production.

DRS. WARFIELD T. LONGCOPE, F. A. STEVENS and J. W. S. BRADY, New York: The relation between virulence and hemolysin production has been a subject for much controversy because uniform methods have not been used by different workers. The fact that the concentration of hemolysin varies during the growth of a broth culture of streptococcus has been recognized but not applied to the estimation of the minimum hemolytic unit. To determine the point at which the concentration is greatest, hourly hemolysin tests must be made. All other factors except the invasive power of the organism must be constant. The estimation of virulence cannot be based entirely on clinical evidence because of the variations in individuals and in the conditions under which infection takes place.

Strains of beta type streptococcus, from blood cultures or empyeme exudates, *Streptococcus pyogenes* on sugar fermentation (Holman), were passed through mice until the virulence was increased from twenty to thirty times. Equal numbers of living bacteria, in the virulent and avirulent forms of the same strain, were then seeded in flasks of 20 per cent. horse serum broth. At seeding, all factors in the two flasks

were similar in every respect. Curves of growth and hemolysin were made, and it was found that in tests with a 5 per cent. suspension of mouse cells in physiologic sodium chlorid solution, both the virulent and avirulent strains produced equal, maximum hemolysin concentrations. Under these conditions, virulence does not influence streptolysin concentration.

Methyl Alcohol Poisoning

DRS. WALTER W. PALMER and GEORGE A. HARROP, JR., Baltimore: In a case of acute methyl alcohol poisoning, it was found that the patient was suffering from a severe acidosis, associated with a marked rise in the excretion of organic acids in the urine, two of which, lactic and formic, were recovered in considerable amounts. We have undertaken further study of this condition experimentally, using dogs. The dosage of methyl alcohol by mouth which will terminate fatally in a day or two if untreated can be determined fairly closely, and is about 12 c.c. per kilogram. On the other hand, such acute death has occurred in but one instance (an animal in bad condition, suffering from severe mange), in which the dosage has not exceeded 10 c.c. per kilogram.

An acidosis has been produced by the administration by stomach tube of amounts of methyl alcohol in excess of 6 c.c. per kilogram. The serum bicarbonate content has ranged between 35 and 20 per cent. by volume. Outspoken dyspnea is not regularly produced—in fact, in the fatal cases death appears to be from respiratory paralysis, the respirations gradually lessening in number. In one animal, observed during two hours before death, the visible respirations did not exceed two or three a minute. The acidosis appears in from twelve to thirty-six hours after the injection of the alcohol, and is associated with a marked rise in the urinary ammonia and in the excretion of organic acids, the amount for twenty-four hours rising from the normal of about 20 c.c. of tenth normal acid per kilogram to from 100 to 150 c.c. per kilogram. As is well known from the work of Pohl, there is a great increase in the excretion of formic acid, which begins, however, somewhat after the first rise in the curve of organic acid excretion. The excretion of formic acid has not accounted for more than 60 per cent. of the total increased organic acid excretion, and in two completed experiments it averages from 20 to 50 per cent. of the latter. The increase in acetone bodies is not much more than can be accounted for by starvation.

We have studied the excretion of methyl alcohol into the stomach. It appears after intravenous injections and was recovered immediately after an injection of as small an amount as 2 c.c. per kilogram. When given by mouth, it has been possible even after twenty-four hours to recover by repeated lavage as much as 10 per cent. of the amount administered. There is no doubt that an active secretion of methyl alcohol into the stomach does occur, and that repeated and thorough lavage over a period of several days is urgently indicated. Small amounts have been recovered as late as the seventh day. Besides removing appreciable quantities of the alcohol, there is less tendency in dogs thus treated to have gastric hemorrhage and bloody diarrhea.

The mechanism of methyl alcohol poisoning is quite unknown except for several isolated facts: It is distributed in approximately equal concentration throughout the body; it is catabolized very slowly with the formation and excretion of formic acid, and it is itself excreted by the lungs and in the urine. Methyl alcohol is known to be less acutely toxic than ethyl alcohol. It therefore seems likely that some other intermediary oxidation product may play a rôle. Such a product is formic aldehyd. We have found traces of formic aldehyd in the blood serum, urine, spinal fluid and aqueous humor of dogs poisoned with methyl alcohol. It is present, it is true, in very small quantities, but the effect of its constant formation in the body over a period of days has not been studied. We do not believe the effect of the injection of doses small enough to be tolerated—and they have to be very small—is a phenomenon comparable with this continuous production over a period of days. Investigation of the part played by this substance and quantitative studies of its formation and excretion are contemplated.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

April, 1920, 159, No. 4

- *Carcinoma of Duodenum. J. B. Deaver and I. S. Ravdin, Philadelphia.—p. 469.
- Nutrition and Public Health with Special Reference to Vitamins. J. F. McClendon, Minneapolis.—p. 477.
- *Cure of Hookworm Infection. J. L. Kantor, New York.—p. 497.
- *Treatment of Catarrhal Jaundice by a Rational Direct and Effective Method. B. B. V. Lyon, Philadelphia.—p. 503.
- Occurrence of Hypochlorhydria in Gallbladder Disease. R. C. Fravel, Richmond, Va.—p. 512.
- *Treatment of Hypertension. E. Moschcowitz, New York.—p. 517.
- *Medical Treatment of Aortic (Thoracic) Aneurysm. W. W. G. MacLachlan, Pittsburgh.—p. 525.
- *Significance of Yellow Spinal Fluid. C. H. Nammaek, New York.—p. 540.
- *Occurrence of Glycosuria in Mushroom Poisoning; Report of Cases. M. E. Alexander, Waterbury, Conn.—p. 543.
- *Pulmonary Complications of Paratyphoid Fever; Report of Four Cases. T. Klein and R. G. Torrey, Philadelphia.—p. 548.
- *Case of Purpura During Serum Disease. H. E. Meleney, New York.—p. 555.
- Prognostic Factors in Pneumonia During Influenza Epidemic. J. H. Smith, Richmond, Va.—p. 561.
- *Treatment of Acute Gonorrhea in Females. F. B. Block, Philadelphia.—p. 572.
- Sugar Mobilization Based on 228 Human Cases. G. L. Rohdenburg, A. Bernhard, and O. Krehbiel, New York.—p. 577.
- *Germicidal Value of Potassium Mercuric Iodid. D. Macfarlan.—p. 586.

Primary Carcinoma of Duodenum.—In the case cited by Deaver and Ravdin the tumor was situated at the terminal end of the second portion of the duodenum. There was no obstruction of the common bile duct, nor evidence of obstruction of the pancreatic ducts, nor other evidence of metastasis. It is believed that this was a case of primary duodenal carcinoma, although the history was very similar to that of ulcer. The rapid loss of weight and the rather short duration of the disease (seven months) on the other hand, would point to primary carcinoma. Carcinoma of the duodenum is found in 0.033 per cent. of hospital necropsies.

Cure of Hookworm Infection.—This paper is based on 231 cases, all of which were observed twenty-nine days or over (up to 228 days in one instance), and no case is reported as a cure that did not show an average of from ten to fifteen consecutive negative stools during a period of four weeks after treatment. The five-stool method of examination was resorted to in each instance. The usual mouth treatment was not very encouraging in its results. Much more efficient results can be obtained by the method of intra-intestinal tube treatment, owing to the fact that the full, concentrated dose of vermifuge is delivered precisely at the point of infection. Instead of 34 per cent. of cures, as in the case of a first mouth treatment, fully 80 per cent. are cured by a first tube treatment. Only one repetition is necessary for the relief of the great majority of infections.

Direct Treatment of Catarrhal Jaundice.—The treatment used by Lyon was as follows: All patients, whether with bronchial conditions or otherwise, were cautioned repeatedly against the swallowing of saliva; noses were sprayed with Dobell's solution; throats gargled with strong potassium permanganate solution, 1 grain to the ounce. A sterile duodenal tube was passed to the stomach in the fasting morning state, the residuum withdrawn for analysis and microscopy, with a sterile individual syringe for each patient. The stomach was washed with water, followed by liquor antisepticus alkalinus (in the hyperacid cases) or hydrochloric acid solutions (in the subacid cases), then water again until the washings were clear. Then 250 c.c. of solution, one day, of potassium permanganate (starting with 1 to 15,000 and increasing to 1 to 8,000 and the next day a solution of silver nitrate (1 to 20,000 to 1 to 10,000) was introduced into the stomach, allowed to remain there three to five minutes, and as much as possible syringed out. The patient was then given a glass of water to drink, turned on the right side and by slow swallowing the tube was allowed to enter the duodenum. When this was reached (in from

fifteen to forty-five minutes) the duodenal contents were aspirated for study. In all these cases the duodenum was at first found to be bile-free. After the duodenal contents had been aspirated for study Lyon introduces through the tube 50 to 100 c.c. of 25 per cent. saturated solution of magnesium sulphate and bathes or douches the duodenal mucosa. This is again followed by aspiration.

Treatment of Hypertension.—The diet which Moschcowitz orders for these patients is, in many respects, similar to that of a case of diabetes of fair tolerance. The diet consists principally of fruit, coffee or tea (without sugar), meat, green vegetables, salad, cheese and a limited quantity of bread. In other respects the quantity is not limited. Moschcowitz believes in gradual exercise. The ideal form of exercise for patients with hypertension is golf. If a sport cannot be undertaken, walking provides an excellent means of exercise. If for one reason or another even walking is not possible, systematic brisk massage will serve up to a certain point as a tolerable substitute for exercise. The patient's improvement may be decided, not by a decrease in systolic pressure but by a decrease in diastolic pressure and consequent rise in pulse pressure. Attempts to reduce the blood pressure by direct methods are futile. Drugs reduce blood pressure, but their effect is evanescent and no permanent gain is ever derived. The use of digitalis, nitrites, iodids, caffeine and chloral hydrate in selected cases is discussed.

Antisymphilitic Treatment of Aortic Aneurysm.—Three cases of aneurysm of the thoracic aorta of syphilitic origin are reported by MacLachlan. Two were of massive size. Special emphasis is placed on the value of medicinal treatment of these cases. Iodids, mercury and arsphenamin in addition to the usual hygienic measures yielded excellent results in these cases.

Significance of Xanthochromia.—In acute or subacute conditions, Nammaek says, the presence of yellow spinal fluid strongly suggests the probable diagnosis of tuberculous meningitis or poliomyelitis.

Mushroom Poisoning.—The five cases reported by Alexander occurred in one family. A mild nephritis and a renal glycosuria were the persistent and predominating features.

Pulmonary Form of Paratyphoid Fever.—Four of six cases of paratyphoid fever studied by Klein and Torrey have been associated with severe pulmonary disturbances. There seems to be a definite pulmonary form of paratyphoid fever which may be easily mistaken for any of the acute respiratory infections. The pulmonary symptoms and findings often precede any intestinal manifestations. Of the pulmonary complications, bronchopneumonia is the most alarming. The bacilli are found in the sputum. The bacilli have also been isolated from the purulent discharges of a chronic purulent otitis media, caused by other infections previous to the paratyphoid disease and from the secretions of pyorrhea alveolaris.

Purpura from Serum Disease.—The case of purpura reported by Meleney occurred during the course of serum disease following the use of antipneumococcus I horse serum in pneumonia. The elements of blood coagulation were normal, and it is therefore probable that the purpura was due to the presence of a toxin associated with the attempt of the body to eliminate the foreign protein. The evidence points to the capillary walls as the site of the lesion.

Treatment of Gonorrhea in Women.—Santal oil, in 10 minim doses, three times daily, and a urinary sedative containing 5 minims of tincture of hyoscyamus and 10 grains of sodium bromid to 1 dram of the liquor of potassium citrate, every three hours, are used by Block in the treatment of the acute urethritis of gonorrhea. A 15 per cent. solution of silver nucleinate or a 5 per cent. solution of silver nitrate, is applied to the entire length of the urethra. In the presence of a gonorrheal discharge from the cervix, hot douches of 1:8,000 potassium permanganate solution are taken four or five times daily. As soon as the discharge is well under control, which ordinarily occurs in about two weeks, local treatments to the cervical canal are given. In applying any medicated solution to the cervical canal one of the most

important points that must be observed is that the canal should be cleansed thoroughly and dried in order that the medicament may come into actual contact with the infecting organisms which lie in the cervical glands. Block wipes away the major portion of the discharge and then thoroughly prays the cervix with an alkaline solution, in order to dissolve the mucus. The cervix is again dried and then an applicator soaked in an alkaline solution (liquor antisepticus alkalinus) is passed into the canal as far as the internal os and moved to and fro, after which a dry cotton swab is passed into the canal and thin discharge removed. This process is repeated several times until all of the mucus is removed and the canal is left clean and dry. A 10 or 12.5 per cent. solution of silver nitrate is vigorously applied to the canal as far as the internal os, and immediately afterward tincture of iodine is similarly applied. Following this application the cervix and culdesac are thoroughly dried and the speculum withdrawn. Only in very exceptional cases is a tampon inserted.

Bactericidal Value of Potassium Mercuric Iodid.—The experiments reported on by Macfarlan show that potassium mercuric iodid is a powerful germicide exhibiting marked bactericidal efficiency in high dilutions. Organic matter diminishes its potency to a relatively slight degree. These facts, taken in consideration with its great solubility, its freedom from irritant action and its comparatively low toxicity in the solutions efficacious for germicidal purposes, would seem to recommend this double salt of the iodids of potassium and mercury as the most desirable of the inorganic germicides.

American Journal of Physiology, Baltimore

April 1, 1920, 51, No. 3

- Effect of Subcutaneous Injection of Chlorid on Heat Production, Blood Pressure and Pulse Rate in Man. I. Sandiford, Rochester, Minn.—p. 407.
- Apparent Influence of Diet of Carbohydrates on Pancreas Remnant of Partially Pancreatectomized Dogs. V. W. Jensen and A. J. Carlson, Chicago.—p. 423.
- Comparative Performance of Muscles Subjected to Rhythmic and Arrhythmic Stimulation. H. A. Bulger and P. G. Stilés, Boston.—p. 430.
- Renal Activity and Acid-Base Equilibrium. T. Nagayama, San Francisco.—p. 434.
- Urea Excreting Activity of Kidney and Phosphate Excretion. T. Nagayama, San Francisco.—p. 449.
- Gastrin Studies: Response of Stomach Mucosa of Various Animals to Gastrin Bodies. R. W. Keeton, F. C. Koch and A. B. Luckhardt, Chicago.—p. 454.
- Gastrin Studies: Response of Stomach Mucosa to Food and Gastrin Bodies as Influenced by Atropin. R. W. Keeton, A. B. Luckhardt and F. C. Koch, Chicago.—p. 469.
- Relation of Spinal Cord to Spontaneous Liberation of Epinephrin from Adrenals, and Action of Strychnin After Cervical Cord Section. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 484.
- Relation of Catalase to Heart Activity. R. J. Seymour, Columbus, Ohio.—p. 525.
- Effect of Vitamin Deficiency on Various Species of Animals. Production of Xerophthalmia in Rabbit. V. E. Nelson and A. R. Lamb, Ames, Iowa.—p. 530.
- Flashing Interval of Fireflies—Its Temperature Coefficient—An Explanation of Synchronous Flashing. C. D. and A. H. Snyder, Baltimore.—p. 538.
- Effect of Diminished Oxygen Rate of Nerve Conduction in Cassippea. A. G. Mayor, Washington, D. C.—p. 543.
- Alkali Reserve of Blood Plasma, Spinal Fluid and Lymph. J. B. Collip and P. L. Backus, Edmonton, Canada.—p. 551.
- Effect of Prolonged Hyperpnea on Carbon Dioxid Combining Power of Plasma, Carbon Dioxid Tension of Alveolar Air and Excretion of Acid and Basic Phosphate and Ammonia by Kidney. J. B. Collip and P. L. Backus, Edmonton, Canada.—p. 568.
- The Luminescence of Cypridina an Oxidation. E. Newton Harvey, Princeton, N. J.—p. 520.
- Physiologic Response to Pituitary Administration. F. S. Hammett, C. A. Patten and N. Suitsu, Philadelphia.—p. 588.

Effect of Subcutaneous Injection of Epinephrin.—Forty-six experiments are reported by Sandiford on the effect of the subcutaneous injection of epinephrin chlorid on the metabolic rate, pulse rate, and blood pressure of patients suffering from various disorders of the ductless glands. A supplementary series of twenty-seven experiments is added in which a study was made of the effect of the epinephrin injection on the pulse rate, and blood pressure (the basal metabolic rate being known). Epinephrin chlorid (0.5 c.c. of 1:1,000) injected subcutaneously invariably causes an increase in the metabolic rate. This increase is usually

accompanied by an increase in the ventilation rate, respiration rate, number of heart beats each minute, volume of each beat, greater utilization of the blood carrying power and peripheral dilatation with an increased systolic and decreased diastolic blood pressure. No relationship was found between the intensity of the epinephrin reaction and the degree of hyperthyroidism and hypothyroidism. Attention is directed to the similarity of the metabolic rate curve following the injection of adrenalin to that found by Lusk from a carbohydrate plethora and to the possibility that the increased heat production is due to an excess of carbohydrate metabolites. It is suggested that in addition there may be a direct stimulation of cellular combustion.

Effect of Feeding Carbohydrates on Pancreas.—In general, Jensen and Carlson's results support the view that a liberal carbohydrate diet tends to change diabetes levis into diabetes gravis, after partial pancreatectomy in dogs. But their experiments do not constitute a clear demonstration of this thesis, in fact they are not much more conclusive than the experiments reported earlier by Thierloix, and by Allen.

Renal Activity and Acid Base Equilibrium.—The urea excreting activity of the kidney under strain was measured by Nagayama after the administration of a mixture of acid and alkaline phosphate of neutral reaction, and also after the administration of an amount of acid phosphate containing the same amount of phosphorus. A distinct decrease in function was observed after acid phosphate. Since the only essential difference in the conditions of these experiments lay in the fact that after the neutral phosphate mixture the acid base equilibrium remained unchanged, whereas after acid phosphate there was a shift toward the acid side, it is concluded that the decrease in the alkalinity of the plasma induced by an increase in the amount of acid phosphate within the body, decreases the urea excreting activity of the kidney. The administration of an amount of alkaline phosphate containing an amount of phosphorus equivalent to that given in the experiments with neutral and acid phosphates, only slightly increased the alkalinity of the plasma and had no appreciable effect on renal function. The administration of amounts of sodium bicarbonate which markedly increased in alkalinity of the plasma was accompanied by a slight decrease in the urea excreting activity of the kidney. Nagayama claims that the urea excreting activity of the kidney measured during the strain is put on the excretory capacity by the simultaneous administration of a neutral mixture of acid and alkaline phosphate.

Physiologic Response to Pituitary Ingestion.—In four out of six individuals, studied by the authors, the ingestion of the pituitary substance caused an increase in the uric acid concentration of the blood. This is interpreted as being probably due to a decreased kidney permeability brought about by the administration of the drug.

Archives of Dermatology and Syphilology, Chicago

May, 1920, 38, No. 5

- *Pathology of Congenital Syphilis. J. F. Fraser, New York.—p. 491.
- Case of Myiasis Dermatosi. W. H. Mook, St. Louis.—p. 515.
- *Purpura Annularis Telangiectodes (Majocchi's Disease). L. Weiss, New York.—p. 520.
- Visceral Syphilis; Syphilis of Stomach. U. J. Wile, Ann Arbor, Mich.—p. 543.
- Practical Method of Roentgen-Ray Dosage without Aid of Radiometer. W. D. Witherbee and J. Remer, New York.—p. 558.
- Acrodermatitis Chronica Atrophicans; Report of Case. M. Scholtz, Los Angeles.—p. 565.

Congenital Syphilis.—The case reported by Fraser is one more to be added to those of apparently nonsyphilitic and immune mothers bearing children that have been proved syphilitic. From a review of antenatal pathology and embryology and the morphologic evidence in this case it would appear that infection takes place only after the fetal organs have been formed—a fact which excludes the theory of germinal transmission unless a practically unsupported theory of "larval inactivity" of the infecting organism is assumed. From the facts reviewed the most plausible explanation of the 5 per cent. residue of nonsyphilitic and immune mothers of syphilitic children is that these mothers have a mild, low grade form of syphilis.

Purpura Annularis Telangiectodes.—The cases reported by Weiss present the following deviations from the cases reported by other observers: There is very intensive, dark brown pigmentation over the middle of the legs, with whitish achromia in the center. There are almost numberless discrete lesions, with the yellowish discoloration in the area of the fading spots, which discoloration is not due to pigment deposit, but to a degeneration of the connective and elastic tissues. The evolution and the involution of the lesions and all their stages are observable simultaneously (coexistence of lesions). A slight raising above the level of the skin is present, independently of the keratotic follicles. The coil glands show evidence of a cloudy swelling and some degeneration, while the follicles are not involved. Lesions appear at the site of a biopsy, which lesions in every respect are similar to the original ones. This fact shows almost to a certainty a vasomotor trophic influence on the peripheral vessels.

Archives of Internal Medicine, Chicago

May 15, 1920, 25, No. 5

- *Experimental Pellagra in White Male Convicts. J. Goldberger and G. A. Wheeler, Washington, D. C.—p. 451.
- Experimental Pulmonary Edema; Summary of the Literature. B. H. Schlomovitz, Madison.—p. 472.
- Investigation of Size of Heart in Soldiers by Teleroentgen Method. A. E. Cohn, New York.—p. 499.
- Teleroentgen Measurements of Hearts of Normal Soldiers. B. Smith, Los Angeles.—p. 522.
- Teleroentgen Estimations of Heart Size in Cases of Effort Syndrome. B. Smith, Los Angeles.—p. 532.
- Purulent Typhoid Meningitis: Report of Case. E. A. Baumgartner and H. H. Olson, Halstead, Kan.—p. 537.
- *Changes in Form of Initial Ventricular Complex in Isolated Derivations of Human Electrocardiogram. F. A. Willius, Rochester, Minn.—p. 550.
- *Influence of Roentgen Ray on Progress of Tuberculosis. J. A. Weinberg, Omaha.—p. 565.

Experimental Pellagra.—Goldberger and Wheeler report briefly the results of an experiment carried out at the Rankin Farm of the Mississippi Penitentiary to test the possibility of producing pellagra in previously healthy men by feeding a monotonous, principally cereal, diet. They believe that the conclusion seems warranted that pellagra developed as the result of the diet.

Electrocardiogram Studies.—The study made by Willius comprises 747 cases and covers a period of five and one-half years. The cases were divided into two major groups, cases (550) with Q R S complexes definitely notched, and cases (197) with slurring or localized thickening of the ascending or descending limb, or both. Both groups were subdivided according to derivation occurrence.

Influence of Roentgen Ray on Tuberculosis.—Weinberg attempted to hasten the progress of infection in guinea-pigs following tuberculous inoculation by exposing the animals to massive doses of the roentgen ray. In the first and second series of guinea-pigs there was no apparent difference in time of appearance of the tuberculous lesions in the roentgenized animals and the controls. In the third series, there was a difference of a few days in the time of death, the average time of death occurring two days earlier in the roentgenized animals than in the controls. This series received two roentgen-ray exposures. The fourth series showed the same difference in time of death between the roentgenized and the control animals, as was observed in the third series. The leukocytes of the blood stream are markedly reduced in number by exposure to the roentgen ray. The reduction is proportionate to the length of exposure with a given current and voltage. The lymphocytes are most markedly affected.

Arkansas Medical Society Journal, Little Rock

April, 1920, 16, No. 11

- Some Factors in Malaria Control. H. Thibault, Scott.—p. 210.
- Treatment of Syphilis. S. P. Bond, Little Rock.—p. 213.
- *Voluntary Acceleration of Pulse Rate. Report of Case. C. H. Cargile, Bentonville.—p. 214.

Voluntary Acceleration of Pulse Rate.—Cargile cites the case of a woman, aged 42, who possessed the rare power of voluntarily accelerating her pulse rate to an unusual degree. She does not know how she does it, except by intense desire and mental concentration. The acceleration begins very

promptly and sometimes cannot be maintained long, because it is very fatiguing. In thirty seconds the rate is increased over forty-five beats, and two minutes after the command it is about 168 beats per minute, instead of eighty-two.

California State Journal of Medicine, San Francisco

May, 1920, 18, No. 5

- Surgical Pathology of Seminal Vesicles. J. R. Dillon and F. E. Blaisdell, San Francisco.—p. 149.
- Treatment of One Hundred and Thirty-Four Cases of Chronic Prostatitis. L. P. Player and C. P. Mathe, San Francisco.—p. 152.
- Contracture of Bladder Neck and Other Obstructions Thereat, Exclusive of Prostatic Hypertrophy and Cancer, and Their Treatment. R. V. Day, Los Angeles.—p. 158.
- The Lay Anesthetist. W. R. Crane, Los Angeles.—p. 160.
- Eye Lesions Due to Focal Infections. L. W. Mansur, Los Angeles.—p. 165.
- *Multiple Primary Tumors. J. C. Blair, San Jose.—p. 167.
- Borderline Types of Seborrhoeic Dermatitis and Psoriasis. M. Schaller, Los Angeles.—p. 170.
- Septic Lepto-meningitis of Otitic Origin. Report of Case with Recovery. E. C. Sewall, J. A. Bacher and H. G. Mehrtens, San Francisco.—p. 172.
- *Vaccine Treatment of Typhoid. E. V. Adelung, Oakland.—p. 175.
- Comparison of End Results in Intermediate and Secondary Perineorrhaphies. O. McNeile, Los Angeles.—p. 178.
- *Two Cases of Ethmoidal Malignancy. P. A. Jordan, San Jose.—p. 181.
- *Achyilia Gastrica Treatment. E. J. Best, San Francisco.—p. 182.
- Some Comparisons Between War Neuroses and Those of Civil Life. T. G. Inman, San Francisco.—p. 184.

Multiple Primary Tumors.—One of Blair's patients had a melanosarcoma of the mediastinum, with a primary carcinoma of the esophagus. In the apices of both lungs were found extensive adhesions and evidences of old consolidations. The liver was enlarged but no nodulations or tumor formations were present. There were chains of enlarged glands in both supraclavicular triangles, more marked on the right side. These glands varied in size up to 1 cm. in length and were mostly of a deep black color. Both axillae contained numerous chains of glands accompanying the vessels, those of the left axilla being much larger. On the left side of the trachea, about the level of the arch and slightly compressing it, was a large tumor mass, 3 cm. in length, and 2 cm. in diameter. This mass was without pigmentation. Esophagus: atypical squamous celled carcinoma, occupied the middle of the lower thirds of the esophagus about 10 cm. in length, extending through all the coats of the esophagus and almost obliterating the lumen, with metastases in the paravertebral glands. The remaining parts of the body were remarkably free from the metastases, a few melanosarcomas being found in the left kidney and suprarenal. The nevus was examined but did not show any carcinomatous proliferation. A second patient had a carcinoma of the ileum and an adenocarcinoma of the appendix. The third patient had a carcinoma of the stomach and gastric lymph nodes with metastases to the vertebrae and a mixed tumor of the ovary.

Intravenous Serum Therapy of Typhoid.—Adelung reports on twenty cases of typhoid treated by intravenous injections of polyvalent sensitized typhoid vaccine as prepared by F. P. Gay. The same vaccine was also used subcutaneously for the purpose of immunizing against relapse, but is not included in this report. The vaccine was given intravenously in doses varying from 75 million suspended organisms (0.25 c.c. in volume) to 525 million suspended bacilli (1.75 c.c. in volume), most commonly at two or three day intervals, though many of the intervals were much longer. The impression was gained that the vaccine is most effective when given at the shorter intervals—two or three days. But it is apparent that the proper guide is the course of the fever curve, and not any fixed rule. In this series of twenty cases, nine-one intravenous injections were given, always with Gay's vaccine. Condensed chemical reports are given.

Ethmoid Malignancy.—One of Jordan's patients had a carcinoma; the other had a sarcoma of the ethmoid.

Achyilia Gastrica.—Best gives his patients 10 per cent. hydrochloric acid with instructions to take from 20 to 30 drops in a glass of water during each meal. An alkaline mouth wash is used immediately after eating. But maintains that it is physiologically correct to take the acid in this way—in sips or swallows—rather than at one time, as is usually done.

Indiana State Medical Association Journal, Fort Wayne

April 15, 1920, 13, No. 4

Hour-Glass Bladder. Report of Case. H. K. Bonn, Indianapolis.—p. 107.

Résumé of Past Two Years' Prostatic Work. W. N. Wishard and H. G. Hamer, Indianapolis.—p. 111.

Renal Tuberculosis. P. E. McCown, Indianapolis.—p. 114.

Testing Kidney Function. A. C. Yoder, Goshen.—p. 120.

Case of Epidemic Encephalitis. C. E. Gilliland, Terre Haute.—p. 132.

Case of Primary Pneumococcus Peritonitis. T. B. Noble and S. R. Edwards, Indianapolis.—p. 134.

Hour-Glass Bladder.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1391.

Prostate Work.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1391.

Renal Tuberculosis.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1391.

Journal of Laboratory and Clinical Medicine, St. Louis

April, 1920, 5, No. 7

Respiratory Studies on Late Stages of Gas Poisoning. R. G. Pearce, Akron, O.—p. 411.

Chemical Changes in Blood in Disease, I. Nonprotein and Urea Nitrogen. C. Myers, New York.—p. 418.

Histogenesis of Carcinoma in Islets of Pancreas. E. J. Horgan, Rochester, Minn.—p. 429.

Effects of Heavy Metal Salts on a Protein and Reversal of Such Effects. R. A. Kehoe, Cincinnati.—p. 443.

Tuberculosis Complement Fixation Test. B. Stivelman, Bedford Hills, N. Y.—p. 453.

Traumatic Hemolysis and Syringe Method of Blood Collection. C. E. Roderick, Battle Creek, Mich.—p. 457.

Histogenesis of Carcinoma in Pancreas.—In the microscopic examination of sections of the pancreas from the 262 cases that were selected by Horgan for this study, hypertrophy of the islets in connection with a chronic pancreatitis was found in forty-eight cases. None of the patients showed glycosuria in any of the urinalyses of twenty-four hour specimens made while under observation and examination; 3 per cent. were found to be cases in which a gastric or duodenal ulcer was found at operation or at necropsy. In the series of 262 cases gastric ulcer was found in seventy-one; in seventeen the islets showed hypertrophy. Duodenal ulcer was found in sixty-one cases; in nineteen the islets showed hypertrophy. Gastric and duodenal ulcer were found associated in eleven cases; in two the islets showed hypertrophy. Hypertrophy of the islets was also observed in six cases of gastric carcinoma, two cases of carcinoma of the rectum, one case of carcinoma of the sigmoid, and one case of cyst of the pancreas. Hypertrophy of the islets was observed grossly and in section from all portions of the pancreas.

Effects of Heavy Metals on Proteins.—From his observations, Kehoe concludes that if the toxicity of the heavy metal salts is due to the coagulation of the proteins of the body, and if such coagulated proteins may be restored to their former state by the introduction into the body of proper salts and alkalies, the primary toxic effects of the heavy metal salts may be combatted intelligently.

Tuberculosis Complement Fixation Tests.—Positive fixations were obtained by Stivelman in 24 per cent. of 108 non-tuberculous individuals. Of 592 serums from definitely tuberculous individuals, 310, or 52.4 per cent., gave a positive reaction, and 282, or 47.6 per cent., gave a negative reaction. Of these 282 patients, 176 had a positive sputum. Of the 4 cases, a positive reaction was obtained in 178, or 60.5 per cent., while of the 298 inactive cases, 132, or 44.3 per cent., reacted positively. Of 108 patients who had pulmonary hemorrhages subsequent to admission, forty-three had a negative fixation and sixty-five a positive fixation. Among the 700 serums tested, eleven reacted strongly positive to the Wassermann test, or an incidence of syphilis of 1.6 per cent. Four of these patients had a positive sputum and a negative tuberculosis fixation test and clinical evidence pointed to the existence of both diseases. Four were nontuberculous and gave a negative tuberculosis fixation. One was nontuberculous but reacted positively to the tuberculosis deviation test.

Journal of Mental and Nervous Diseases, Lancaster, Pa.

April, 1920, 51, No. 4

*Deep Localization in the Cerebral Cortex. E. G. Van't Hof, Amsterdam.—p. 313.

*Multiple Brain Abscesses Secondary to Bronchiectasis and Kyphoscoliosis. C. C. Saelhof, Chicago.—p. 330.

Deep Localization in Cerebral Cortex.—The results of Hoog's investigations show that the supragranular cortex layers are receptory associative, in accordance with Ariens Kapper's functional deviation, and that the functional nature of the granules is also receptive and associative in the post-central region. The granular cells should, moreover, be conceived of as matrix cells not only in the fascia dentata but also in the neocortex.

Multiple Brain Abscesses Secondary to Bronchiectasis.—Saelhof reports a case of multiple bilateral brain abscesses secondary to bronchiectasis caused by the wedging of the lower lobe of the right lung into a pocket formed by a hyphoscoliosis. The causative agents isolated and cultivated from both the abscesses and the suppurating lung were *B. fusiformis* and anaerobic streptococci. The infection evidently traveled through the blood stream.

Journal of Orthopedic Surgery, Lincoln, Neb.

April, 1920, 18, No. 4

*Operative Treatment of Irreducible Paralytic Dislocation of Hip Joint. E. Jones, Los Angeles.—p. 183.

Points to Be Observed in First Ten Days of Treatment of Compound Fractures. H. Winnett, Lincoln, Neb.—p. 196.

Orthopedic Laboratory as a Solution of Brace Problem. J. E. M. Thomson, Lincoln, Neb.—p. 205.

Instrument for Tendon Fixation. G. E. Bennett, Baltimore.—p. 204.

Post-War Orthopedic Problems. E. M. Little, London.—p. 210.

Discussion of Cineplastic Amputations British Orthopaedic Association. E. Muirhead Little.—p. 212.

Operation for Irreducible Paralytic Dislocation of Hip Joint.—Jones has enlarged the acetabulum, according to Albee's method. In these cases before operation the luxation could be reduced and created at will. The operation included reefing the capsule, and was followed by plaster fixation for from three to five months. Sufficient muscle activity was present to give a good functional hip joint without ankylosis and with excellent stability.

Journal of Parasitology, Urbana, Ill.

March, 1920, 6, No. 3

Leucochloridium Problematicum. T. B. Magath, Rochester, Minn.—p. 105.

Biologic Relationships of Ascarids. B. Schwartz, Washington, D. C.—p. 115.

Flagellate Character and Reclassification of Parasite Producing "Black-head" in Turkeys—Histomonas (Gen. Nov.) meleagridis (Smith). E. E. Tyzzer, Boston.—p. 124.

Resistance of Ascaris Eggs. S. Yoshida, Osaka, Japan.—p. 132.

*New Bi-Flagellated Protozoon of Man. T. Wight and B. Lucke, Camp Zachary Taylor, Ky.—p. 140.

Pediculides. N. Leon, Jassy, Roumania.—p. 145.

New Species of Rhabditoid Worms Found in Human Intestines. H. Kobayashi, Seoul, Korea.—p. 148.

Spirochaeta Recurrentis: A Filter Passer. J. L. Todd, Montreal.—p. 152.

Variation of Ovum (Sarcoptes Scabiei) Under Coverglass Pressure. F. D. Weidman, Philadelphia.—p. 155.

New Protozoon of Man.—A small biflagellated protozoon was found by Wight and Lucke in the direct smears and in cultures from three postmortems of patients dead from acute influenza. They occurred, respectively, in the heart's blood, sphenoidal sinus and the lung, and apparently produced no tissue changes. The organisms were round or pear shaped, possessed two free flagella and a kinetonucleus. They were easily cultivated on rabbit's blood glycerin agar. The authors regard these organisms as accidental invaders, possibly belonging to the genus Prowazekia.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

April, 1920, 15, No. 2

*Apparatus for Exposure of Skin or Mucous Membrane to Vapor of Toxic Substances; Observations on Dichlorethylsulphide. J. A. E. Fyster and M. E. Maver, Madison, Wis.—p. 95.

Optical Isomers. V. Tropcines. A. R. Cushny, Edinburgh.—p. 105.

- *Local Anesthetic Properties of Phenyl Methyl Carbinol. A. M. Hjort and Charles E. Kaufmann, New Haven, Conn.—p. 129.
- *Effect of Atropin on Chloroform Hyperglycemia. E. L. Ross, Chicago.—p. 135.
- *Effect of Some Antipyretics on Acuity of Hearing. D. I. Macht, J. Greenberg and S. Isaacs, Baltimore.—p. 149.
- Clotting Efficiency of Thromboplastic Agents. F. Fenger, Chicago.—p. 167.
- *Iodin Absorption from Human Skin. N. C. Wetzel and T. Sollmann, Cleveland.—p. 169.
- Drug Perfusion of Medulla of Turtle. 11. Aconitin, Morphin, Cocain, Quinin. A. D. Bush, University, N. D.—p. 173.

Study of Irritating Skin Vapors.—An apparatus is described by Eyster and Maver by means of which the skin or mucous membranes may be exposed to accurately controlled concentrations of toxic vapors under conditions simulating the presence of such vapors free in the atmosphere. Data are included on the skin toxicity of dichlorethylsulphid on rabbits and on man and on the toxicity of the vapors of the rabbit's eye, in order to illustrate the method of use and applicability of the apparatus. The data suggests the necessity of determinations on man when human toxicity determination is desired in the study of other irritant vapors.

Anesthetic Properties of Phenylmethyl Carbinol.—According to Hjort and Kaufmann *dl* phenylmethyl carbinol is a more potent local anesthetic on the rabbit's cornea and in the human skin than either its isomer rose oil or their homologue benzyl alcohol, but not in proportion to its greater toxic action. The relative instability of the α -phenethylol offers further objection to its practical application. It is suggested that the increased physiologic action may be due to the presence of the asymmetric carbon atom.

Effect of Atropin on Hyperglycemia.—The conclusions reached by Ross are based on the following observations: Atropin administered before chloroform anesthesia did not reduce the hyperglycemia. Atropin administered before ether or chloroform anesthesia did not alter the changes in either heart rate or respiration. Chloroform reduced heart rate while ether increased it, a fact which has been observed by others. Chloroform caused more than twice as much respiratory inhibition compared to that of ether. A two days' fast decreased chloroform hyperglycemia and did not affect ether hyperglycemia. Chloroform asphyxiates markedly more through respiratory inhibition and reduced heart rate than ether. This asphyxiation is the probable cause of a large part of chloroform hyperglycemia and the cause for its not being altered by atropin.

Effect of Antipyretics on Hearing.—The effect of a large number of antipyretic and analgesic drugs and of their combinations was studied by Macht and his associates in the relation to the acuity of sound perception. It was found that acetanilid, sodium salicylate, acetylsalicylic acid, phenyl salicylate, and some other drugs decrease the threshold of hearing. Acetphenetidin, antipyrin, pyramidon and some other drugs increase the threshold of hearing. The effects of various combinations were found to produce results which in the case of some, were additive, while, in case of other combinations, were of a synergistic character; and the significance of these phenomena is discussed in the text.

Iodin Absorption from Skin.—The observations made by Wetzel and Sollmann indicate that the normal human skin is a very poor channel for the absorption of iodine even in the free state.

Minnesota Medicine, St. Paul

May 4, 1920, 3, No. 5

- *Surgery of Kidney. E. S. Judd, Rochester.—p. 221.
- Hypertension and Its Clinical Aspects. F. J. Hirschboeck, Duluth.—p. 227.
- Handling and Treatment of Dermatologic and Syphilitic Cases in Dispensary. S. E. Sweitzer, J. Butler and H. G. Irvine, Minneapolis.—p. 236.
- Applications of Principles of Focal Infection With Method for Removal of Extensive Disease of Alveolar Processes. A. D. Dunn, Omaha.—p. 241.
- *Treatment of Tuberculosis of Spine. H. W. Meyerding, Rochester.—p. 245.
- Vaginal Drainage. F. J. Plondke, St. Paul.—p. 251.

Surgery of Kidney.—Of the 239 patients on whom nephrectomy was done in the Mayo Clinic, seven (2.9 per cent.) died. Three had tuberculosis of the kidney; one died of tuber-

culosis bronchopneumonia, one of miliary tuberculosis of the lungs and tuberculous peritonitis, and one of chronic nephritis and bilateral pleuritis. Two of the patients had pyonephrosis; one died of hemorrhage (forceps on pedicle) and one of thrombophlebitis of the inferior vena cava, the common, internal and external iliac veins. One patient with hypernephroma died of an infection. This patient was operated on by the transperitoneal route. One patient with carcinoma of the kidney died of acute nephritis and metastatic carcinoma in the lungs.

Tuberculosis of Spine.—Of 405 patients with Pott's disease observed in the Mayo Clinic, 100 were operated on by a modified Albee bone grafting method. Meyerding states that it has been their experience that the most favorable results are obtained by a proper selection of patients to be operated on and the continuance of the conservative treatment after operation until in the judgment of the surgeon, the disease process has been arrested. The bone graft used was curved to fit the deformity. Eighty-six per cent. of the patients in the series have been relieved of clinical symptoms; three patients are unimproved; three have not been heard from; eight have died since operation.

Ohio State Medical Journal, Columbus

April 1, 1920, 16, No. 4

- Points in Abdominal Technic. J. F. Baldwin, Columbus.—p. 232.
- Cases of Dislocation of Crystalline Lens. C. F. Clark, Columbus.—p. 238.
- Abdominal Hysterotomy. J. D. Smith, Akron.—p. 244.
- Advantages of More General Use of Local Anesthesia in Surgical Work. H. T. Sutton, Zanesville.—p. 247.
- Differential Diagnosis of Tuberculosis and Syphilis. T. Zbinden, Toledo.—p. 251.
- Psychiatric and Neurologic Symptoms Associated with Renal Signs. L. Miller, Toledo.—p. 255.
- Comparative Anatomy of Eye. T. M. Stewart, Cincinnati.—p. 258.
- Trachoma, Its Diagnosis and Treatment. R. Lockhart, Columbus.—p. 262.
- Early and Late Vomiting of Pregnancy; Its Treatment. C. E. Turner, Columbus.—p. 266.

Southern Medical Journal, Birmingham, Ala.

April, 1920, 13, No. 4

- *Is Sprue Endemic in South? M. F. Boyd, Galveston.—p. 229.
- Indicanuria (Toxic States), Report of Cases. W. A. Dearman, Long Beach, Miss.—p. 232.
- Cardiospasm: Report of One Hundred Cases. J. R. Verbrycke, Jr., Washington, D. C.—p. 236.
- *Coccidioidal Granuloma, Including First Reported Case East of Mississippi. K. M. Lynch, Charleston, S. C.—p. 246.
- *Control of Malaria by Quinin Sterilization of Human Host. C. C. Bass, New Orleans.—p. 250.
- Results of Recent Efforts to Control Malaria. J. A. Ferrell, New York.—p. 256.
- Malaria Control in Rural Communities by Antimosquito Measures. H. H. Howard, New York.—p. 260.
- Surgical Researches during World War.—G. W. Crile, Cleveland.—p. 267.
- Right Sided Abdominal Pain in Female. J. N. Baker, Montgomery, Ala.—p. 271.
- *Inguinal Hernia of Uterus. H. A. Royster, Raleigh, N. C.—p. 275.
- Management of Tumors of Urinary Bladder. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 279.
- Orbito-Palatal Route of Transilluminating Maxillary Sinus. H. H. Briggs, Asheville, N. C.—p. 284.
- Maxillary Sinus in Role of a Reservoir for Overlying Sinus Disease. H. Dupuy, New Orleans.—p. 287.
- Roentgen Ray Aid in Diagnosis of Nasal Accessory Sinus Disease. J. W. Jervey, Greenville, S. C.—p. 291.

Is Sprue Endemic in South?—Evidence is given by Boyd to substantiate the view that this infection is endemic within the Southern United States among individuals who have never been outside of the country.

Coccidioidal Granuloma.—Forty-four cases of this disease have been reported and Lynch adds one more. Forty-one patients were residents or former residents of California. One case originated in Colorado, one in Missouri; the first in the Argentine, and the forty-fifth in South Carolina. The San Joaquin Valley of California has been the source of the majority of reported cases. The author's patient was a colored woman, aged 45 years. She was born and had lived on one of the sea islands near Charleston, had come to work in Charleston as a household servant and had never been out of this region. The case was a typical one in every respect.

Control of Malaria by Quinin Sterilization.—This paper is a brief historical review of the developments and progress of

malaria control work in Bolivar and Sunflower counties, Mississippi, with which Bass has been associated.

Inguinal Hernia of Uterus.—Royster's patient was a colored woman, 45 years of age. She had been married twice but had never been pregnant. Her menses, occurring first in her fifteenth year, had always been vicarious, the flow proceeding from her nose regularly every twenty-eight days. Each month, following the discharge from her nose, she suffered from headache and pain in the epigastrium or in the thighs. About the age of 14 a lump was first noticed in her left groin, but it gave her no trouble and very little attention was paid to it until two months before admission, when she began to experience pain and discomfort. According to her impression the mass had enlarged rapidly for the previous twelve months. An incision over the mass along the groin revealed a hernial sac containing a uterus somewhat larger than normal which harbored a fibroid of the size of a billiard ball. The pedicle was composed of the well developed left tube and ovary with the broad ligament. The specimen showed complete absence of the right tube, ovary and broad ligament.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

Jan.-March, 1920, 17, Nos. 193-195

Medical Treatment of Infantile Paralysis. C. Mackay.—p. 1.
Case of Leukemia with Scalp Nodules. T. H. Gunewardene.—p. 9.
Pre-Leukemia in Infancy. G. Ward.—p. 18.
Cardiac Angina in a Child of Six Years. W. J. Rutherford.—p. 22.
Clinical Features of Typhus Fever in Children. A. Stroe.—p. 24.
Case of Tuberculosis Verrucosa Cutis of Foot. T. McCrirk.—p. 26.
Isolated Disease of Tarsal Scaphoid; Kohler's Disease. P. M. Heath.—p. 28.
Congenital Redundant External Meatus; Repeated Abscess Formation; Excision. D. McKenzie.—p. 30.

Treatment of Infantile Paralysis.—The outstanding lines of treatment on which Mackay lays emphasis are complete anatomical rest and muscle reeducation. The treatment for paralyzed muscles is immediate and anatomical rest. It must be immediate; it admits of no delay because the disease once destroys muscle adjustments, and so fine are these that immediately the nerve cell governing the action of a motor, for example, is affected, its extensor opponent begins to overact, and this must be prevented. No definite time can be stated as to when muscle reeducation should be begun, but the guides will be pyrexia, pain and tenderness; until the cessation of these the limbs are best kept at rest. The underlying principle is to pick up a minimum function and use it as the commencement. There is a zero position of muscle function for every muscle or muscle group; reeducation must be commenced in this position, and carried on patiently and skilfully during the next two years at least.

Leukemia with Scalp Nodules.—A boy, aged 3 years and 6 months, with an apparently idiopathic severe anemia of 10 per cent. hemoglobin and 760,000 red cells, responded, as indicated by his general condition and blood picture, to treatment in five weeks. Then he contracted measles, and about three months later he developed nodules, mainly in the scalp, exhibiting at the same time a different blood picture, hemoglobin percentage of 72, red cells, $5\frac{1}{2}$ million, together with myeloblasts. Without treatment some of the nodules appeared and others became smaller, but with a reduction of the red cells and the hemoglobin content. With the commencement of treatment, post hoc or propter hoc, the temperature shot up and a soft tender tumor developed. The treatment was discontinued for a fortnight, and recommenced owing to the steadily increasing anemia, but with no evidence of any improvement; eventually, with all the accompaniments of severe anemia, death took place. Of unusual occurrences were tender hyperemic swellings in connection with the lower ends of the bones (tibiae and right femur) which subsided in a few days; the gradual enlargement of the nodules with the decline of the patient's condition, and the appearance of some of these twenty-four hours before death.

Cardiac Angina in Child.—A boy, 6 years old, with a negative history, was found suffering from a dry pericarditis and anginoid attacks of considerable intensity. Under treatment these attacks ceased.

British Medical Journal, London

May 8, 1920, 1, No. 3097

***Treatment of Eclampsia by Transfusion of Blood.** W. B. Bell.—p. 625.
Partial Pyloric Obstruction. A. E. Maylard.—p. 626.
Heart Affections in Relation to Labor Market. R. O. Moon.—p. 628.
Civil Lessons of War for Treatment of Fractures of Skull. C. M. Kennedy.—p. 630.
***Etiology of Diverticulitis.** C. H. Willey.—p. 631.
***Etiologic Factors in Abortion.** D. Dougal and J. W. Bride.—p. 632.

Transfusion of Blood in Eclampsia.—Bell reports a case in which 500 c.c. of blood were transfused into an eclamptic. The husband was the donor. The blood was withdrawn into citrate solution from his median basilic vein. Approximately the whole of this was transfused into the median cephalic vein of the patient. The patient made a good recovery.

Temperament and Diverticulitis.—The three patients seen by Willey were suffering from looseness of the bowels. One of these was found to be suffering from an acute kink resulting from adhesions of the sigmoid to the parietal peritoneum, and the other from a fistulous communication between the sigmoid and bladder. Willey thinks it would be illuminating to note in all cases the particular type and build and temperament of the patients, as well as any temporary condition of mental worry or powerful emotional disturbance. He has no doubt of the very close connection between depressing emotion and pathologic conditions of the large intestine, and suggests that this is the first stage in the creation of diverticulitis, a sensitive and impassioned temperament being the most powerful predisposing factor. In men of this build the effect of acute emotional worry tells at once in some way on the large intestine. The colitis of worry evidently results from diminished trophic innervation and tissue resistance, while at the same time the natural digestive ferments are faulty in quantity and quality. Food and the mucous lining become morbidly septic. The *B. colic* becomes more and more virulently active. Probably many follicles are infected, which may account for diverticuli being multiple.

Etiology of Abortion.—One hundred cases were analyzed by Dougal and Bride as to causation. Accidental or reflex causes were present in 18 per cent. General disease of the mother, disease or displacement of her genital organs, and gross abnormalities of the fetus or placenta (other than those due to hemorrhage or infarction) were found in 25 per cent. Syphilis, as represented by a positive Wassermann reaction, accounted for 12 per cent. but its influence as the actual cause of the abortion was probably much less, and nearer 8 per cent. From the remaining 52 per cent. has to be deducted the figure for the self-induced group, which is probably not less than 20 per cent. In the present series, 8 per cent of the women admitted taking lead pills, and a number of these showed clinical evidence of lead poisoning. This leaves over 30 per cent. of cases with no cause assigned. Pathologic investigation throws little additional light on the subject, as most of the morbid changes found do not produce the abortion, but occur during the operation of some other cause. It would appear, however, that the mother is primarily at fault as the result of some diseased condition, whether it be of an organic nature or an increased irritability of the centers presiding over the expulsive action of the uterus.

Dublin Journal of Medical Science

April, 1920, 4, No. 2

***Compression Neuritis Due to Normal First Dorsal Rib.** W. I. de C. Wheeler.—p. 65.
Case of Diabetes Mellitus with Local Infection and Acidosis Treated by Allen Method. H. F. Moore.—p. 72.
***Functions of Suprarenal Glands in White Rats.** H. V. Exner.—p. 79.
***Approach to Median Nerve in Forearm.** A. A. McConnell.—p. 90.

Compression Neuritis.—Wheeler reports one case of this type in which he removed the first rib. An incision was made above the clavicle, as if for ligature of the subclavian artery. A second limb was added, running parallel to the fibers of the trapezius muscle. The segment of rib removed extended from the posterior edge of the insertion of the scalenus medius to the scalene tubercle, so as to include

the groove for the subclavian artery, and the trunk formed by the eighth cervical and first dorsal nerves.

Function of Suprarenals.—The results of his extensive experimental work have convinced Exner that the glycogenic function of the suprarenals is dependent on, or works in conjunction with, some nervous control; this nervous control, when adequately stimulated, still being able to produce glycosuria independently, and in the absence of all suprarenal tissue. Whether the converse is true is a matter for speculation, but whatever the glycogenic function of the suprarenal glands may be, it seems to be subordinate to and dependent on the central nervous system.

Exposure of Median Nerve in Forearm.—The simplest method of reaching the plane between the superficial and deep muscular groups, where this nerve lies, according to McConnell, is to make an incision along the free border of the flexor carpi ulnaris muscle. On retracting this muscle, the interval between the flexor sublimis and flexor profundus muscles is immediately exposed. The ulnar artery and nerve are seen lying on the flexor profundus. A retractor is then inserted deep to the flexor sublimis, and the muscle is drawn anteriorly and laterally, thus exposing the median nerve in the greater part of its course in the forearm. With full flexion of the wrist the nerve lies easily accessible down to the transverse carpal ligament.

Indian Journal of Medical Research, Calcutta

October, 1919, 7, No. 2

- Pathogenesis of Deficiency Disease. V. Histopathology. R. McCarrison.—p. 269.
- Id. VI. Influence of Scorbatic Diet on Bladder. R. McCarrison.—p. 279.
- Id. VII. Effects of Autoclaved Rice Diets on Gastro-Intestinal Tract of Monkeys. R. McCarrison.—p. 283.
- *Id. VIII. General Effects of Deficiency Diets on Monkeys. R. McCarrison.—p. 308.
- *Id. IX. Occurrence of Recently Developed Cancer of Stomach in Monkey Fed on Food Deficient in Vitamins. R. McCarrison.—p. 342.
- Tinturometer Instrument for Measuring Tint and Turbidity. W. F. Harvey.—p. 346.
- Measurement of Bacterial Content in Fluid Suspension. W. F. Harvey.—p. 353.
- Determination of Incubation Periods from Maritime Statistics, with Particular Reference to Incubation Period of Influenza. A. G. McKendrick.—p. 364.
- Evidence Regarding Immunity Conferred by Attack of Influenza; Study of Three Local Epidemics. R. H. Malone.—p. 372.
- Pasteurellosis in Rabbits, Following Intravenous Injection of Influenza Bacilli. R. H. Malone.—p. 379.
- Report of Epizootic Disease Among Calves at Amara Dairy Farm. T. H. Gloster and G. Shanks.—p. 382.
- *Value of Wassermann Test. Frequency of a Positive Wassermann Reaction in an Unselected Adult Male Indian Population. K. R. K. Iyengar.—p. 398.
- *Value of Wassermann Test. II. Significance and Value of Positive Wassermann Reaction in Leprosy. K. R. K. Iyengar.—p. 407.
- Prevalence of Ankylostomiasis in Madras Presidency. K. S. Mhaskar.—p. 412.
- Correlation Between Chemical Composition of Anthelmintics and Their Therapeutic Values in Connection with Hookworm Inquiry in Madras Presidency. Thymol. J. F. Caius and K. S. Mhaskar.—p. 429.
- Identification of Three Strains of Trypanosomes from Cases of Sleeping Sickness Contracted in Portuguese East Africa with Trypanosoma Rhodesiense. T. A. Hughes.—p. 464.
- Studies in Ankylostomiasis. IV. G. T. Wrench.—p. 475.

Pathogenesis of Deficiency Disease.—Diets which are deficient in vitamins and in protein, and at the same time excessively rich in starch or in fat or in both, McCarrison found to be potent sources of disease and especially of gastro-intestinal disease. An excess of fat, in association with deficiency of B vitamin and protein and superabundance of starch, is peculiarly harmful to the organism. Certain dietetic deficiencies greatly favor the invasion of the blood and tissues by bacteria, especially is this the case when deficiency of vitamins and protein is associated with an excessive intake of starch. Complete absence of this vitamin from the food of the human beings is of less practical importance, from the point of view of disease production, than is its subminimal supply. Complete deprivation of B vitamin, especially in the presence of imperfect balance in other essential requisites of the food, will lead to rapid dissolution and death; subminimal supply of this vitamin will lead, in like circumstances, to slow dissolution and disease.

Cancer of Stomach and Vitamin Deficiency.—McCarrison is inclined to attribute the malignant growth in a monkey to the deficiency of certain food factors. The monkey was fed on food which contained an adequate supply of A and C vitamins but was deficient in B vitamin. The animal survived this dietetic regimen for fifty-one days. At the necropsy an obvious carcinoma of the stomach was found. The discovery of this area of carcinoma was largely a matter of chance since there was no macroscopic evidence of its presence. That the carcinoma was of recent origin seems probable since the area of pyloric mucosa involved by it was of very small size.

Value of Wassermann Test.—Twenty-two per cent. of an apparently healthy Indian male adult population tested by Iyengar, without selection, showed latent or clinically inactive syphilis as demonstrated by the Wassermann test.

Value of Wassermann Test in Leprosy.—Iyengar examined the blood serum in 100 cases of undoubted leprosy, all patients being males. Thirty-four cases were nodular, fifty-two of anesthetic, and fourteen of the mixed form of leprosy, respectively. The number of positive Wassermann reactions were for these several types 17, 16 and 8, respectively, which is 41 per cent. The author is convinced that this reaction is characteristic of leprosy in these cases and that it is not syphilitic.

Japan Medical World, Tokyo

April 3, 1920, 10, No. 14

- Maintenance of Function of Transfused Erythrocytes and Production of Antigen. K. Kobe and Y. Komiya.—p. 289.
- *A New Vaccine. J. Hishikari.—p. 289.
- Biological Study of Vibrios; Toxin Against Blood Corpuscles. T. Yoyoshima.—p. 289.

New Vaccine: Bacterial Solution.—Hishikari has prepared a vaccine which is not a bacterial suspension, but a solution, in which antigen may remain unaffected by the dissolution of bacteria. Ten platinum loopfuls of a twenty-four hour old culture are mixed with 10 c.c. of a 2 per cent. dried sodium carbonate solution and the mixture is allowed to stand for twenty-four hours in the incubator at 37 C. The bacteria will then dissolve in the mixture. The mixture is neutralized by adding 1 c.c. of an 8.4 or 8.7 per cent. acetic acid solution. To this neutralized solution is added urea to 0.52 per cent. In the preparation of the vaccine of putrefactive cocci and the streptococcus of elephantiasis, the cocci must be killed by keeping the suspension in the water bath at 50 C. for two hours before it is neutralized, for these will not be killed even when they are kept for twenty-four hours at 37 C.

April 10, 1920, 10, No. 15

- Influence of Anesthetics against Phagocytosis. T. Aoyama.—p. 313.
- *New Immunization Phenomenon; Volumination. R. Torikata.—p. 313.
- *Schlatter-Osgood Disease. T. Shibuya.—p. 313.
- Toxic Action of Immunized Serum. S. Yamada.—p. 313.
- Study of B. Pertussis.—p. Takagi.—p. 314.
- Frambesia in Formosa. O. Oho.—p. 314.
- Excretion of Urea and Chlorate Salts from Kidney. G. Enami.—p. 314.
- Treatment of Gonorrhea. S. Hidaka.—p. 314.

Volumination: New Immunization Phenomenon.—By mixing bacteria with the normal serum, the bacterial bodies will be seen to swell. By employing immune serum, instead of the normal serum the swelling will appear more remarkable. This volumination, as it is named, occurs even in the presence of so small quantity of salts as would never cause agglutination. From these facts, the swelling of the bacterial bodies may be considered to be the results of the direct combination of the antigens and antibodies.

Schlatter-Osgood Disease.—The author is inclined to attribute the cause of the disease to the incomplete ossification of the independent bone nuclei. The immediate cause of avulsion may, therefore, be disposition and stress.

Lancet, London

May 8, 1920, 1, No. 19

- Surgical Treatment of Prolapse of Uterus and Vagina. W. B. Bell.—p. 993.
- *Pellagra Outbreak in Egypt. II. Pellagra Among German Prisoners of War: Food Factor in Disease. J. I. Enright.—p. 998.
- Syphilis in Diseases of Heart and Circulation. C. W. Chapman.—p. 1004.

Causation of Red Degeneration. R. H. Paramore.—p. 1005.
Orbital Hemorrhage with Proptosis in Experimental Scurvy. S. S. Zilva and G. F. Still.—p. 1008.
Very Early Case of Ileal Intussusception Following Severe Trauma in a Boy Aged Six Years. C. M. Kennedy.—p. 1008.
Case of Syphilitic Nephritis. H. B. Day.—p. 1009.
Pericardial Effusion Following Injection of Antidiphtheritic Serum. C. W. Cunningham.—p. 1009.

Pellagra: Rôle of Parotid.—In view of his findings Enright believes that the "food deficiency theory," which has been considered on apparently adequate grounds to be the cause of pellagra, is seriously threatened; that a food deficiency can be quite excluded, but it can hardly be considered as of paramount importance. Obviously something more than a dietetic factor is involved. A critical analysis of the diets which German pellagrins ate before capture and during their period of captivity prior to the onset of the eruption is sufficient to explode the food-deficiency theory as a predisposing factor. That the pellagrins suffered from defective digestive assimilation is undoubted. The incidence of malaria and dysentery was very high, and was responsible for intestinal derangement, which was a marked feature of the majority of the cases. Judging from the indicanuria commonly present and the copious foul smelling evacuations which frequently contained undigested food material, it is evident that there was abnormal protein decomposition, and that the ultimate food effects of the diet were largely vitiated or entirely lost in this manner. Enright wonders whether the parotid possesses any rôle in protein metabolism. He suggests that this gland may possess an internal secretion, the function of which is concerned in the economy of protein, just in the same manner as the pancreatic secretion is essential for normal carbohydrate metabolism.

Traumatic Intussusception.—In Kennedy's case a very early intussusception was discovered four and a half hours after street accident. Kennedy accepts this as being direct evidence that injury may cause intussusception.

South African Medical Record, Cape Town

March 13, 1920, 18, No. 5

Use of Eversion of Lachrymal Punctum. R. C. J. Meyer.—p. 83.
Best Wounds at the General Hospital in France. W. Thomas.—p. 84.
Case of Carcinoma of Lungs. H. A. Loeser.—p. 89.
Removal of Leg after Operation Cured by Hypnotism. H. Goodman.—p. 82.
Baggy Pericarditis and Congenital Disease of Kidney. C. T. Moller.—p. 90.
Notes from Country Practice. John A. Graham.—p. 90.
Case of Abdominal Extraperitoneal Abscess with Unusual Features. E. R. Grey.—p. 92.

March 27, 1920, 18, No. 6

Medical Observation in South Africa. T. J. Mackie.—p. 103.
Roman's Responsibility to the Health of the Nation. G. P. Mathew.—p. 109.
Unculated Fibroid Obstructing Labor. W. A. Rail.—p. 111.
Enuresis Nocturna Cured by Hypnotism. H. Goodman.—p. 111.

April 10, 1920, 18, No. 7

Some Applications of War Surgery to Civil Practice. L. Gordon.—p. 123.
Tuberculin Treatment of Tuberculosis. D. M. Macrae.—p. 217.

Tuberculin Treatment of Tuberculosis.—Several hundred tuberculosis patients have been treated by Macrae with B. E. of Wright and according to Wright's technic. The patient was usually put to bed in the open air until the toxæmia—when present—had subsided. Tuberculin was then given as indicated, the dose being carefully graduated each week, having regard to the nature of the case. The injection was given subcutaneously, and absolute rest for twenty-four hours after was strictly enjoined in each case. Each week the dose was increased by $\frac{1}{10,000}$ mg. or more, according to the patient's progress, until $\frac{1}{2,500}$ mg. was reached. No ill effects were observed from the treatment of serious cases with tuberculin. In fact, Macrae found that in very early cases of pulmonary tuberculosis patients seemed to be benefited by injections of tuberculin. On the other hand, however, other patients did equally well without it; and if it be true that 95 per cent. of the human race have, at some time or other, been tuberculous, it must be equally true that most of them have recovered without any kind of treatment. In

surgical tuberculosis the case was different. In all glandular affections it was found that incision, followed by tuberculin treatment, was of value.

Archives des Maladies du Cœur, etc., Paris

January, 1920, 13, No. 1

***The Heart in Diphtheria.** Aviragnet and Lutembacher.—p. 1.
Use of Condenser in Electrocardiography. D. Routier.—p. 17.
Changes in Aorta and Semilunar Valves as Factors in Diastolic Pulse. Canciulescu.—p. 24.
French Works During the War on Disordered Action of the Heart. P. Merklen.—p. 27.

The Heart in Diphtheria.—Aviragnet and Lutembacher call attention to the great affinity of diphtheria toxin for the heart, about the same as for nerve tissue. The intensity of diphtheric paralysis parallels the cardiac manifestations, as they are both the expression of the common intoxication. The toxin attacks the heart muscle proper as well as the more highly differentiated parts of the heart. The arrhythmia depends on the degree of the toxic impregnation, and disappears with it, but often tachycardia persists for weeks and even months.

February, 1920, 13, No. 2

***Aneurysm of the Left Ventricle.** R. Lutembacher.—p. 49.
***Sinus Arrhythmia from Asphyxia.** L. Gallavardin.—p. 59.
***Sino-Auricular Block.** L. Gallavardin and A. Dumas.—p. 63.
The So-Called Azurophil Granulations. L.M. Bétancès.—p. 66.

Aneurysm of the Left Ventricle.—Lutembacher states that constant pain at the apex of the heart is the only sign of value that he has been able to discover for the existence of an aneurysm of the left ventricle. It is sometimes violent but more commonly it is a dull ache or merely an uncomfortable sensation in the chest, accentuated by pressure. He gives illustrations of his three cases.

Sinus Arrhythmia from Asphyxia.—Gallavardin reports two cases from which he assumes the possibility of sinus arrhythmia with large waves for which the asphyxia is responsible, by its stimulating effect on the nuclei of the vagus. Apneic and postapneic retardation is the most characteristic form.

Sino-Auricular Block.—Gallavardin and Dumas report a case from which they conclude that abnormally low bradycardia (between 32 and 36 pulse beats) is due to sino-auricular block. Violent exertion would restore in their patient normal rhythm for the time being. As this normal episodic rhythm gave way again to the primary bradycardia, all gradations of arrhythmia characteristic of partial block could be noted. Swallowing movements restored normal rhythm to a certain extent. They could not decide in their case whether the bradycardia from sino-auricular block was the effect of a congenital predisposition or of a lesion in the sino-auricular system.

Bulletin de l'Académie de Médecine, Paris

March 9, 1920, 83, No. 10

Sulphates of Rare Metallic Elements in Treatment of Chronic Tuberculous Processes. H. Grenet and H. Drouin.—p. 226.
Ambidexterity. Le Dentu.—p. 229.
Arsenic and Colloidal Silver in Influenza. Capitan.—p. 234.
Functional Insufficiency of the Pulmonary Orifice with Mitral Stenosis. H. Vaquez and Magniel.—p. 236.
History of Psychopathology. Cabanès.—p. 241.

April 6, 1920, 83, No. 14

Dual Personality. Doléris.—p. 323.
Lethargic Encephalitis. E. Jeanselme.—p. 325; C. Achard.—p. 326; A. Netter.—p. 329.
***Acidosis in Course of Acute Abdominal Disease.** M. Labbé.—p. 335.
Salts of Certain Rare Metals in Therapeutics. A. Frouin.—p. 337.
Rôle of the International Hygiene Commission During the Macedonian Campaign. P. Armand-Delille and others.—p. 339.

Acidosis in Acute Abdominal Disease.—Labbé insists that tests for acidosis should be applied to all patients as a routine measure, as much as for albuminuria and glycosuria. He uses the Gerhardt, Legal or Lieben tests for diaceturia and acetonuria, and has found the results important for both diagnosis and prognosis. He ascribes the acidosis to disturbance in liver functioning secondary to the infection. It has the same import as insufficiency of the liver from other cause, but he warns that the liver may be gravely affected without acidosis developing.

April 13, 1920, **83**, No. 15

- *Substitute for Bismuth. G. Hayem.—p. 344.
Lethargic Encephalitis at Lille. Combemale and Duhot.—p. 348.
Plastic Surgery of the Ear. J. Bourguet.—p. 350.
*Intermittent Parotitis. Jarret.—p. 352.
Biologic Classification of Living Beings. P. Bouquet.—p. 353.

Bismuth and Kaolin in Treatment of the Stomach.—Hayem remarks that nowadays he never meets any one that takes sodium bicarbonate systematically to relieve pain in the stomach except persons from other countries who are unacquainted with the French method of giving a single dose of 20 gm. of bismuth subnitrate in the morning, fasting. He introduced this treatment in 1906, and time has confirmed its efficacy. He has never witnessed any instance of toxic action from this large dose, but he has found kaolin very nearly as effectual as bismuth, as was described in the Paris Letter, May 29, p. 1531.

Hydroparotitis from Artificial Teeth.—Jarret calls attention to a recurring swelling and pain in the parotid gland which is liable to develop when artificial teeth are worn. If the patient has happened to take out the plate when being examined, the physician may be misled.

Bulletin Médical, Paris

April 10, 1920, **34**, No. 20

- Profuse Hemorrhage from Small Blood Vessels. C. Achard.—p. 341.
Frequency of Simple Chaneres and Importance of Early Bacteriologic Diagnosis. Payenneville.—p. 345.
Case of Pseudo-Hermaphroditism. H. Costantini.—p. 346.

April 17, 1920, **34**, No. 21

- Use of the Pneumograph to Overcome Faulty Respiration. R. d'Heucqueville.—p. 359.
*Functional Hyperthermia in Children. H. Jumon.—p. 362.

Functional Hyperthermia in Children.—Jumon states that during childhood many so-called obscure febrile and subfebrile conditions for which a pathologic cause is sought in vain are in reality purely physiologic hyperthermia and not fever. The adult is a stabilized individual; the child, on the other hand, is an organism seeking to acquire a definite equilibrium. There are many physiologic causes that may produce a variation of temperature in children; of these causes exercise is perhaps the most important. The child is more active than the adult, and activity causes a rise of temperature. A walk of 3 miles at an ordinary gait will raise the temperature of a child, sometimes as high as 100.2 F. Hyperthermia may be of alimentary origin. A nursing, during the menses of its nurse will often have a temperature of 100.4. In early childhood the temperature falls a quarter of an hour after eating, then rises about a degree. The temperature is also influenced by the character of the food. Nervous children are naturally more subject to fluctuations of temperature than others. However, the physician should not make a diagnosis of functional hyperthermia until he has made a careful examination of the child and excluded pathologic hyperthermia of obscure origin, of which latent tuberculosis is one main cause.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 5, 1920, **44**, No. 9

- Epidemic Encephalitis. Sicard, Vincent and others.—p. 294, 296, 306, 310, 316, 317, 337 and 341.
Meningeal Hemorrhage of Unknown Cause Simulating Lethargic Encephalitis: Recovery. Rathery and Bonnard.—p. 300.
Induced Pneumothorax in Tuberculosis. Bernard and Baron.—p. 308.
Influence of Sex on Gravity of Influenza. Apert and Flipo.—p. 321.
Influence of Sex in Whooping Cough. E. Apert and Cambessédès.—p. 324.
Consideration of Sex in Pediatrics. E. Apert.—p. 326.
*Hemiplegia of Pleural Origin. De Jong and Jacquelin.—p. 331.
*Roentgen Raying of Spleen in Malaria. V. Cordier.—p. 346.

Pleuritic Hemiplegia.—The young man with acute left pleurisy and large effusion developed the twelfth day, four days after a simple exploratory puncture, persisting organic hemiplegia. Two similar cases are on record. Puncture earlier might have warded off the embolism presumably responsible for the hemiplegia. The effusion had collected very rapidly and this should have warned to puncture early.

Roentgen Raying of the Spleen in Malaria.—Cordier's two years of experience have confirmed the advantages sometimes to be derived in rebellious malaria from roentgen exposures of the spleen.

Lyon Chirurgical

November-December, 1919, **16**, No. 6

- *Sacrolumbar Pain and Lumbar Vertebra. G. Nové-Josserand.—p. 573.
Outcome of Gunshot Wounds of the Chest. M. Barhélemy.—p. 584.
Reconstruction of Crucial Ligament of the Knee. G. Cotte.—p. 586.
Experimental Study of Chronic Gastric Ulcer. P. Santy.—p. 597.
*Decalcification of Bones. R. Tillier and P. Witas.—p. 606.
Stenosis of Duodenojejunal Flexure with Gastric Ulcer. Guérin.—p. 627.
Cubitus Valgus with Median and Ulnar Paralysis. P. Bonnet.—p. 631.
Access to Arteries in Calf. P. Bonnet.—p. 638.
*Nerves of Arterial Sheath in Causation of Eczema. R. Leriche.—p. 651.

Neuralgia from Malformation of the Fifth Lumbar Vertebra.—Nové-Josserand reports five cases in which patients complaining of pain in the sacrolumbar region were found on roentgen examination to present malformation of the fifth lumbar vertebra, an abnormal development of the transverse processes which were too long, and often too wide, crowding the fifth lumbar nerve. The fact that when the malformation is unilateral the pain radiates from the same side would seem to furnish strong proof that the malformation is the direct cause of the pain. Resection of the transverse processes does not seem irrational in treatment of this sacralization of the vertebra, causing lumbar neuralgia.

Pathogenesis of Decalcification of the Bones.—According to Tillier and Witas, decalcification of the bones is of various origin. It may be postinfectious and represent the defense reaction of the bone marrow which hypertrophies at the expense of the mineral elements of the bones. Or it may be due to faulty nutrition related in turn to some lesion of the central nervous system. It may be associated with vasoconstriction, dependent on conditions in the sympathetic nervous system. Or it may be traced to a direct local irritation of the sympathetic nerve fibers, which causes a circumscribed decalcification of the bone adjacent to the lesion, usually traumatic. The manifestations may be of a reflex character, associated with phenomena affecting primarily the muscles and of the same origin. Close relation between the decalcification and the pain may be evident. In this case the irritation of the sympathetic system has entailed neuritis.

Cure of Eczema Associated with Varicose Veins.—Leriche gives an account of a case of moist eczema of the leg associated with varicose veins which had resisted all forms of treatment for a period of five years, but which receded completely in a few days following denudation of a stretch of the femoral artery—what he calls perifemoral sympathectomy.

Nourrisson, Paris

March, 1920, **8**, No. 2

- *Artificial Feeding of Infants in Institutions. A. Mola.—p. 65.
*Common Diarrhea in Infants on Cow's Milk. Marfan.—p. 81.
The Milk Supply in Paris and Suburbs. H. Martel.—p. 107.

Artificial Feeding of Infants in Institutions.—Mola reviews the work of the infant ward at Montevideo, showing that it compares favorably with similar institutions elsewhere. But even at the best, over 38 per cent. of the infants artificially fed died before reaching the sixth month; from 6 to 12 months old the mortality was 15 per cent., and from 1 to 2 years was 3.9 per cent. Institutional care of infants is pernicious at the best from the lack of psychic stimuli and the danger of secondary infection. The mortality of 19 per cent. for infants in the institution for three weeks rose to 50 per cent. with an eight months' stay. During the last six years a total of 1,026 infants have passed through the service; the total mortality has averaged 17 per cent. The rooms are spacious and there is a large court for sunning the babies; and one nurse to each four. He remarks in conclusion that there is nothing more individual than the need for food, health and normal growth can be obtained with very different rations according to the subject. Sometimes the infant will begin to thrive for the first time when the amount of food is reduced to much below the normal standard. Over 64 per cent. died of the artificially fed infants weighing less than 3,000 gm., while the mortality was only 17.1 and 2.8 per cent. among those weighing 5,000 and 6,000 gm.

Diarrhea in Infants Fed on Cow's Milk.—Marfan explains that common diarrhea in infants getting cow's milk is due to exaggeration of peristalsis and hypersecretion in the bowel, a reaction to irritating substances which may be o

various origins. The intestinal flora may not have been altered before the diarrhea, but once it is installed, the flora changes and in a way that may maintain or aggravate the irritation from the products of the proteolytic, saccharolytic or lipolytic bacteria. Although these modifications of the flora are the consequences and not the cause of the diarrhea, yet it is important to keep them under control, as nutritional disturbance sets in early from the secondary defective digestion and assimilation.

Paris Médical

March 27, 1920, 10, No. 13

*Thrombophlebitis of the Upper Extremities. F.-M. Cadenat.—p. 253.
Syndrome of the Posterior Inferior Cerebellar Artery. Duhot.—p. 259.

Thrombophlebitis of the Upper Extremities.—Cadenat states that this rare condition manifests itself by a syndrome similar to phlegmasia dolens of the lower extremities. It develops in from two to four weeks. As a rule, it terminates by a complete return to normal function, without the occurrence of embolism. Treatment is simple. First immobilization with suspension; then massage and mobilization, beginning with the third week. Phlebitis may result from a local infection of the arm, or it may be due to overstrain or to traumas of the chest that show no infection clinically. He summarizes fourteen cases, including two from his own service.

April 3, 1920, 10, No. 14

Recent Progress in Digestive Pathology. P. Harvier.—p. 269.
Indications with Cancer of the Colon. P. Mathieu.—p. 275.
Repeated Hematemesis in Chronic Pylephlebitis. P. Carnot and J. de Léobardy.—p. 277.
Total Colectomy for Chronic Intestinal Stasis. V. Pauchet.—p. 280.
*The Sham Meal Test. Dupuy.—p. 286.
Rectitis with Secondary Syphilis. Carnot and Friedel.—p. 291.
Appearance and Reaction of the Feces. R. Goiffon.—p. 294.

The Sham Meal Test.—Dupuy discusses the sham meal test recommended by Carnot in 1904 for determination of the quality and quantity of gastric secretion. It is a clinical application of Pawlow's experimental psychical secretion. At the Beaujon hospital the appetizing sham meal usually consists of broiled steak, and bread and butter. The fasting subject is instructed to cut his food fine and to chew slowly each mouthful, but to refrain from swallowing any of the food or saliva. Each mouthful, after thorough mastication is expelled in a basin, the subject rinsing his mouth with water from time to time. The quantity of food set before the patient should require ten minutes for its mastication, as this is the minimal duration of the sham meal, since the psychic secretion reaches its height in about ten minutes. After the meal has been disposed of as described, he keeps quiet for ten minutes longer, during which period he continues to deposit in the basin all the saliva that is secreted. At the end of this time the contents of the stomach are again evacuated with the stomach tube, as was done before the sham meal. From 30 to 90 c.c. of clear gastric juice are thus secured, which contains no food particles if no saliva nor food has been allowed to reach the stomach. The gastric juice thus secured turns diamidoazobenzene red, which is evidence of the high percentage of free hydrochloric acid. Owing to its purity, its analysis is particularly easy. Dupuy has found the method of great value in the differential diagnosis of cancer, ulcer, types of dyspepsia, etc.

Presse Médicale, Paris

April 17, 1920, 28, No. 23

Early Diagnosis of Hard Chancre. R. Sabouraud.—p. 221.
Autoplastic Surgical Treatment of Baldness. R. Passot.—p. 222.
Reparative Surgery of the Hand. C. Lenormant.—p. 223.

Urgency of Early Diagnosis of Hard Chancre.—Sabouraud insists on the extreme importance of ultramicroscopic examination with every dubious ulceration on the genital organs, and reiterates that syphilis should be managed like rabies.

Operative Treatment of Baldness.—Passot utilizes strips from that part of the scalp which is not affected with calities, twisting the flaps around to cover the bald region, as he shows in two illustrations. The growth of the hair will soon hide the edges of the long narrow pedunculated flaps,

cut to cover about a third of the bald area. The result was a complete and permanent success in his six cases thus treated. By the end of a month the hair had grown enough to conceal all trace of the incisions. By the second or third month the hair had grown long enough to cover the denuded areas entirely. He remarks that this method of *chirurgie esthétique pure* ranks with the operative correction of wrinkles, surgical tattooing of scars, and reconstruction of ugly noses, French surgeons now taking much interest in correction of disfigurements.

Reparative Surgery of the Hand.—Lenormant reviews the extensive literature of the last few years on reconstruction of fingers and of the hand in general. Substitution of the thumb with a toe is giving better results, but the joints can seldom be used actively. When done on a child, the toe does not grow to keep pace with the rest of the hand. The discomfort from the position required to bring the pedunculated toe flap and the hand together also restricts the use of this method. The outcome is more promising when a finger from the other hand is used for the new thumb. Joyce reported in 1918 a successful case, the ring finger of the left hand forming the new right thumb. The hands were fastened together for two months. The man can cut with scissors and otherwise use his right hand normally. Of the nine cases of grafting a finger or toe in place of the thumb, the graft lived in all but two, and the results were excellent.

April 21, 1920, 28, No. 24

Intranasal Treatment of Ethmoidal Suppuration. G. Portmann.—p. 233.
*The Abdominocardiac Reflex. Prével.—p. 235.

The Abdominocardiac Reflex.—Prével refers to the acceleration of the heart beat on changing from the reclining to the erect position. He has investigated this in several hundred persons, having a table for the purpose which swings the body without personal effort from the horizontal to the vertical position. There is no acceleration in the perfectly healthy, and he has traced it to the traction from sagging organs, especially the stomach, mechanically irritating the solar plexus. There is no acceleration if the stomach is supported with a band or with the hands. Tachycardia after exertion is probably due in part to the same cause, and both require treatment to restore conditions to normal, more careful mastication and refraining from drinking too much fluids with meals, while the flabby abdominal walls should be given physiologic training, and be supported with a band. By this means a damaged heart will be spared extra work and the sound heart of the athlete spared unnecessary strain.

April 24, 1920, 28, No. 25

Transverse Fracture of the Patella. E. Juvara.—p. 241.
*Glycemia and Acetonuria. H. Chabanier.—p. 242.
The New Laws of Inherited Syphilis. Carle.—p. 244.
Immune Bodies in Treatment of Tuberculosis. C. Spengler.—p. 244.
Trachoma. L. Cheinisse.—p. 246.

Critical Glycemia in Diabetes.—Chabanier expatiates on the light thrown on diabetes by the glycemia figure of the plasma when abrupt and intense acetonuria has been induced by sudden reduction of the carbohydrates in the diet. This will induce acetonuria even in the healthy, but the glycemia does not vary much. In the diabetic it becomes much reduced, and this reduction phase is what he calls the critical glycemia. When there is already acetonuria in the diabetic, carbohydrates should be allowed until the acetone figure is normal; then the glycemia is again the critical figure. He says that this critical glycemia is the most reliable index at our disposal of what is going on in the diabetic's organs. The normal standard is 1 per thousand and any figure above this indicates the abnormal utilization of carbohydrates which is the essence of diabetes. The size of the figure is an index of the severity of the disease and hence of the prognosis. Hyperglycemia in diabetics seems to be a kind of compensating process, like the high uremia with nephritis. The sugar content of the urine is merely a gross sign of diabetes, he affirms; it is not to be compared with the insight afforded by the critical glycemia. The test diet he has found most convenient for the purpose is the clot from 3 liters of milk, all the whey removed, but water allowed freely with it.

Progrès Médical, ParisApril 10, 1920, **35**, No. 15

*Nitrogen Equilibrium of Blood of Cancer Patients. Loeper and others.—p. 159.

The Nitrogen Balance in the Blood of Cancer Patients.—Loeper, Thinj and Tonnet report the results of their investigations on the blood of fifteen cancer patients. They found that cancer, no matter what the localization may be, affects profoundly the nitrogen equilibrium of the organism and more especially that of the blood. This fact is shown by the increase of the residual nitrogen and by the decrease of the relative amount of urea nitrogen. This result is probably due to the secretion by the tumor of proteolytic ferments resembling erepsin, and in some cases possibly by the action of the tumor on the functioning of the liver itself. They regard as especially significant the frequent increase in the amount of urea in the blood in the absence of any renal lesion diagnosticable clinically, a finding in sharp contrast with the hypo-azoturia common in cancer patients. In the fifteen cases the ratio between the urea nitrogen and the total nitrogen of the blood was always below normal; in ten cases even lower than 40 per cent., and in four cases below 20 per cent. The residual nitrogen varied around 0.60 gm., although in one case (cancer of the pylorus) the unusually high figure of 1.82 gm. was noted.

Revue de Chirurgie, ParisJuly-August, 1919, **38**, No. 7-8

*Exclusion of Subarachnoid Space. F. Lemaître.—p. 497.

Principles for Making Artificial Legs. J. Amar.—p. 539.

Surgery in Malaria. H. Alamartine and H. Vandenbosche.—p. 567.

Verticotraverse Fracture of Condyle of Femur. Bergeret.—p. 592.

*Infectious Spondylitis and Perispondylitis. Lance and Jaubert.—p. 607.

To Wall Off the Subarachnoid Space in Operating on the Brain.—Lemaître refers particularly to operations for abscesses in the brain or cerebellum, but the simple method he has applied successfully in sixteen cases can be used for any operations on the brain. The aim is to evacuate the pus and induce adhesions along the tract of the drain to form a fibrous wall, and thus shut off all communication with the meninges. The meninges are not incised, a Pravaz needle being used to puncture down to the focus. When pus appears, the needle is replaced by a catheter. Usually pus will rise in the catheter, and the abscess will thus be partially drained. Then the catheter is removed and a drain of very small caliber is inserted in its place and worked into the puncture hole with care not to tear the edges. The drain is left in place for from twenty-four to forty-eight hours, during which time it does not act so much as a drain as it does as a foreign body designed, through a process of irritation, to develop meningeal adhesions. Then the tract leading to the collection is further enlarged by the insertion of a larger drain. By thus gradually increasing the size of the drains from day to day the meningeal orifice is widened, the area of thickening produced by the adhesions is increased, and the exclusion of the subarachnoid space is complete. Lemaître thinks that this walling off of the subarachnoid space around marks a distinct advance in the evolution of brain surgery.

Spondylitis and Perispondylitis.—Among 150 patients whose condition had been diagnosed as Pott's disease, Lance and Jaubert found a considerable number with infectious spondylitis, so-called rheumatismal perispondylitis or tuberculous rheumatism of the Poncet type—a total of fourteen such cases from among the military hospital patients and four more from civil practice. At the height of the process the symptoms could not be controlled by any medication and the pain did not cease by mere rest in bed alone, but when the patient was provided with a plaster body cast the pain yielded rapidly. While strict immobilization is indispensable during the pain crises, it seems that later it is better for patients to be mobilized. At the beginning of the exercises the movements were stiff, but after a few seconds patients regain their suppleness. Mobilization must be carried out very gently and very prudently, as any overfatigue may bring on a new attack of pain. Eleven of the patients were treated with heliotherapy for variable periods and all were

more or less benefited. The writers do not pretend that moderate mobilization together with heliotherapy can render supple spines that are already ankylosed, but state that there is no doubt that heliotherapy attenuates and arrests the pathologic process and aids in the resorption of the exudates. Otherwise the cases seemed to be passing on inevitably to ankylosis of the spine.

Schweizer Archiv f. Neurol. und Psychiatrie, ZurichApril, 1920, **6**, No. 1

*Nature of Aphasia. F. Lotmar.—p. 3. Conc'n.

*Organic Variability and Correlations. H. Bersot.—p. 37. Conc'n.

*The Problem of Instinct. R. Brun.—p. 80.

Myokymia and Muscle Changes in Scleroderma. S. Neumark.—p. 125.
Heterotopia of the Choroid Plexus. S. Kitabayashi.—p. 154.

Aphasia.—In concluding this long study of difficulty experienced in finding the proper word, Lotmar emphasizes that the difficulty is much greater for names of unseen objects than for the visible, and that this must be borne in mind, in addition to other points he describes, in training during convalescence from total aphasia.

The Plantar Reflex.—Bersot reviews the literature extensively and explains that reflex action in pathologic conditions is like that of the extremes of life, in infants and the aged. It is the relative frequency and variations that imprint the characteristic stamp, considered in connection with other reflexes.

Instinct in the Light of Modern Biology.—Brun defines the modern biologic conception of instinct and describes its physiology, psychology, and pathology, or "hormopathies." The latter, he says, may be primary morphogenic or metabolic endogenous hormopathies or secondary metabolic or dynamic exogenous hormopathies—all outside of the consciousness and all originating in the instincts for food and for defense.

Schweizerische medizinische Wochenschrift, BaselMarch 18, 1920, **50**, No. 12

Lethargic Encephalitis at Zurich. H. W. Maier.—p. 221. Cont'n.

*Vital Shape of the Erythrocytes. O. Wyss.—p. 226.

Prophylactic Raying after Operations for Cancer: Reply. M. Steiger.—p. 227.

Epidemic of Cholera in Corfu, 1916. A. E. Tsakalotos.—p. 230.

Are the Erythrocytes Biconcave?—Wyss presents evidence that the erythrocytes in the blood are round or egg shaped, the plasma exerting a counter pressure to the oxygen inside the corpuscles, which maintains them in this shape. The moment the blood issues from the vessel, this counter pressure is lost; the oxygen escapes from the erythrocytes instantaneously, and they collapse into the biconcave shape. The round or egg shape offers much less chance for friction in the circulating blood than if they were biconcave. He suggests that study of the interval before the corpuscles thus shrink to the biconcave form might have diagnostic value in some conditions.

April 8, 1920, **50**, No. 15

Character of Present Epidemic Influenza. H. Eichhorst.—p. 281.

*Incapacity from Injury of the Eyes. Sidler-Huguenin.—p. 283.

Experimental Research on Action of Drugs on the Intestines by Oral and by Parenteral Administration. F. Uhlmann and K. Zwick.—p. 287. Conc'n in No. 17.

Incapacity from Injury of the Eyes.—Sidler-Huguenin remarks that in estimating the degree of incapacity after injury of the eyes the mistake is generally made of regarding it as greater than it later proves to be. In reviewing the ultimate outcome in 300 cases in which compensation was granted he was impressed with the way in which the subject adapts himself to his impaired vision and seems to regain his old skill to a remarkable degree, as for example, a certain farmer who had lost one eye and can distinguish only fingers at 2 meters is able to manage his farm as before without any apparent detriment. When men gave up their place in the workshop on account of the injury to their eyes, it often happened that they took another similar place elsewhere, or else they founded a similar business of their own with the indemnity they had received. In none of the 300 cases has the other eye been injured later when the men continued at the same occupation. Of the total 300, fully 85 or 90 per cent. resumed their former trade or other work, testifying

that the injury to the eyes does not require a change of occupation unless it is very grave. He was allowed to examine the pay-rolls, and he found that the wages paid (1916) were the same in 81.6 per cent., and only in 8.3 per cent. were they lower. Of those who had resumed work with reduced wages, over half had regained their former wage in a year or two. Fully 90 per cent. of all by the end of two years were getting no less wages than before their accident.

Investigation of the way in which the compensation money had been spent, showed that it had laid the foundation for a competency in a number of cases, fully 80 per cent. of the injured having invested the money wisely, so that their accident had really been fortunate for them, financially. His investigations showed further that the disfigurement from the accident did not interfere with the men's getting work, and the family and friends seemed soon to get accustomed to it. Another important factor in the ultimate outcome is that a single eye gets trained in time to what amounts to stereoscopic vision as it is assisted by the sense of touch. Women become more expert in this way than men, as a rule. The experience with these 300 cases testifies abundantly that after the loss of one organ its mate learns in time to assume the functions of both. He warns that the view that every impairment of vision entitles to compensation as a matter of course is erroneous. Physicians should impress this on the injured, demonstrating to them how certain persons with defective vision even from childhood are yet able to do fine work. Otherwise the physician is liable to lay the foundation for a traumatic neurosis. He should inform the injured that any defect less than 0.75 for fine work and 0.5 for ordinary work does not entitle to indemnity. With graver injury than this, the decision must be left to specialists, but it is well to bear in mind that of the 300 cases on which this communication is based, only 10 per cent. have had their earning capacity reduced by their accident. Instead of speaking of "impairment of earning capacity" it might be better to say that the "integrity of the body is no longer quite intact." This would avoid the suggestion of damage when really such does not exist. It is probable that the experiences with accidents in other fields will yield the same ultimate results as with injury of the eyes.

Pediatrics, Naples

April, 1920, 28, No. 8

- Lethargic Encephalitis in Children. P. M. Romano.—p. 353.
Meningococcus Carriers in Regiment. B. Romano.—p. 362.
Sudden Death in Pertussis. I. Nasso.—p. 365.
The Pulse-Viscosity Index in Children. A. Nizzoli.—p. 368. Cont'n.

Riforma Medica, Naples

March 6, 1920, 36, No. 10

- Lethargic Encephalitis and Influenzal Poli-encephalitis. G. Zagari.—p. 245.
Histology of Mucosa with Exstrophy of Bladder. Formiggini.—p. 252.
The Law and Medical Secrecy. M. Carrara.—p. 255.

March 13, 1920, 36, No. 11

- Lethargic Encephalitis. G. Zagari.—p. 269; S. Dalmazzoni.—p. 276.
Ictero-hemorrhagic Spirochetosis with Necropsy. Santi Racchiusa.—p. 273.
Echinococcus Cyst in Abdominal Wall. P. de Tommasi.—p. 278.
Compensation for Injury from Violence While at Work. G. Marchese de Luna.—p. 281.

March 20, 1920, 36, No. 12

- Lethargic Encephalitis. G. Zagari.—p. 293; R. Falcone.—p. 302.
Parenteral Injection of Milk, etc. S. Corinaldesi.—p. 296.
Maximal Fermentation of Glucose by Colon Bacillus. M. Mazzei.—p. 300.
Physiologic Acetonuria. E. Pittarelli.—p. 303.

Protein Therapy.—Corinaldesi gave intravenous injections of 1 c.c. of a 2 or 4 per cent. solution of deuto-albumose in a case of typhoid and one of paratyphoid, according to Lüdke's technic. No benefit was apparent. Then he tried intramuscular injections of 5 or 10 c.c. of sterilized milk in five patients with lobar or bronchopneumonia or typhoid and was astonished at the prompt and permanent improvement that followed one, two or three injections, without disturbances or much local reaction. There was only rarely a slight chill and it was mild. His findings thus confirm the way in which parenteral introduction of some protein substance is able to stimulate the defensive forces and aid in the throwing off of the disease, irrespective of the nature of

the protein inoculated. He remarks that the facts observed have opened new fields of research even if none of the theories advanced to date explain them satisfactorily.

Physiologic Acetonuria.—Pittarelli's research seems to disprove the assumption that every urine contains some acetone. He has further demonstrated that there must be some substance in the urine which combines with the acetone and prevents its responding to the most sensitive tests until the urine has been distilled. Then the acetone is found prominent in the distillate. The nature of this substance that masks the acetone is still a mystery.

Rivista Critica di Clinica Medica, Florence

Oct. 4, 1919, 20, No. 40

*Return of Exophthalmic Goiter after Operation. C. Capezzuoli.—p. 469.

Recurrence of Exophthalmic Goiter After Thyroidectomy.—Only a small segment of the three lobes was left at the operation in 1915 and a complete cure followed. A year later the thyroid began to enlarge again and soon reached its former size, with other symptoms of exophthalmic goiter and also tetany. Then the young woman married and all the symptoms subsided; even the thyroid shrank to its post-operative size. She seems clinically cured, not even the shock of the death of her husband just before her child was born having brought back the symptoms.

Nov. 29, 1919, 20, No. 48

*Pneumothoracotomy in Pleurisy. E. Riccioli.—p. 565. Cont'n.

Injection of Air in Pleurisy.—Riccioli reports six cases of pleurisy with effusion in which he allowed air to gradually take the place of the effusion as it was aspirated. This averted sudden changes in pressure while clearing out the effusion completely and holding the sheets of the pleura apart so that adhesions are less likely to develop; it also checks reproduction of the effusion, and favors the circulation in the chest.

Revista Española de Medicina y Cirugía, Barcelona

December, 1919, 2, No. 18

- Treatment for Extensive Adnexitis. J. Soler y Julia.—p. 657.
*Gangrene Following Injection of Sugar Solution with Epinephrin. Baudilio Guilera.—p. 664.
Digestive Disturbances in the Tuberculous. F. Gallart y Monés.—p. 667. To be cont'd.
Ferran's Vaccine Against Tuberculosis. J. Codina Castellvi.—p. 673.
Tuberculous Vagotonic Syndromes. R. Pla y Armengol.—p. 677.
The Unstable Temperature in Tuberculosis. Dargallo.—p. 679.

Gangrene After Injection of Sugar Solution.—The primipara of 23 with puerperal fever showed slight and sluggish response to injection of turpentine to induce a fixation abscess. The seventh day she was given an injection of 350 gm. of sugar solution containing 20 drops of epinephrin solution. The injection was made 12 cm. from the point where the turpentine had been injected five days before. This was repeated on the other thigh. Within twenty-four hours a patch of gangrene developed at the site of the injections of the sugar solution, and the processes rapidly spread and burrowed deep. When the gangrenous tissue had been cut away, the aponeurosis was left exposed but under hot applications several times a day the defect gradually healed over. Injection of sodium chlorid solution without the epinephrin was borne without by-effects, so that Baudilio inclines to ascribe the gangrene to the local vasoconstricting action of the epinephrin in the much debilitated and infected patient.

Revista Española de Obstet. y Ginecología, Madrid

September, 1919, 4, No. 45

- *Radium Treatment of Cancer of Uterine Cervix. S. Recasens.—p. 385.
*Radium Treatment of Uterine Cancer. Vital Aza.—p. 395.
Traumatism from Coitus. V. Conill.—p. 403.

Radium Treatment of Cancer of Uterine Cervix.—Summarized April 10, 1920, p. 1054, when it appeared elsewhere.

Radium Treatment of Uterine Cancer.—Vital Aza describes the modifications in rabbit ovaries under exposure to radium and roentgen rays, and discusses the mechanism of the cure of human uterine cancer. He thinks that the proliferation of connective tissue under the influence of the raying is the result, not the cause, of the destruction of the cancer cells.

The radium and roentgen rays do not have any specific action; they merely exaggerate and hasten the degenerative processes going on, while checking mitosis.

Siglo Médico, Madrid

Feb. 7, 1920, **67**, No. 3452

- Influenza. B. Hernández Briz.—p. 85.
 *Differentiation of Meningitis by the Eye Findings. V. Ribon (Bogotá).—p. 86.
 *History of Medicine. Albiñana.—p. 88. Cont'n.
 *Acromegaly and Diabetes Insipidus. G. Pittaluga.—p. 90.

Differential Diagnosis of Meningitis by the Eye Findings.—Ribon recalls that malaria frequently induces subjective and objective changes in the eyes, some visible with the naked eye and others requiring the ophthalmoscope for their detection. Malaria may induce symptoms closely resembling those of meningitis but the meninges are sound. Hemorrhages in the retina are explained by accumulation of the hematozoa in the finer vessels. The ophthalmoscope may reveal likewise malarial neuroretinitis. The discovery of the hematozoa in the blood will permit effectual treatment of the supposed meningitis.

History of Medicine.—This instalment of Albiñana's rambling notes of his trip to France to compile data for a history of medicine is accompanied by illustrations of objects of historical interest from the Bordeaux museum. One skull shows a large trephining opening similar to those found in prehistoric skulls. But this skull is a modern one; the trephining opening was made with the prehistoric flint instruments excavated recently. It took nearly two hours to make the opening with these crude tools.

Acromegaly and Diabetes Insipidus.—Pittaluga remarks that acromegaly is probably accompanied by polyuria more often than is generally recognized, as the polyuria may be transient. The condition may right itself later as compression of part of the pituitary subsides or the parts adapt themselves functionally or anatomically to the compression.

Feb. 14, 1920, **67**, No. 3453

- General Syphilis and Syphilitic Psychoses. G. R. Lafora.—p. 101. Cont'n.
 Types of Infants' Stools. J. E. López-Silvero (Havana).—p. 105.
 Home Treatment of Morphin Addiction. C. Juarros.—p. 107.

Feb. 21, 1920, **67**, No. 3454

- *Cholecystitis and Abscess in Liver without Jaundice. E. Slocker.—p. 121.
 Myiasis of the Skin. E. Hervada.—p. 124.
 The Significance of Urethral Filaments. Sicilia.—p. 126.

Gallstones and Abscess in Liver Without Jaundice.—Slocker describes a case in which the symptoms from cholelithiasis were long mistaken for stomach disturbances from hyperchlorhydria. There was no jaundice, but the liver was enlarged and painful, the pain spreading to both shoulders, and the gallbladder region was tender. Over thirty gallstones were removed from the gallbladder, and recovery was soon complete after the partial cholecystectomy and incision of the liver which released fetid pus. He emphasizes the necessity for examination of the liver for a suppurating process in cases of gallbladder disease, and warns that the cystic duct may be compressed by glands in the gastro-hepatic omentum; swelling of the duct from the compression may obstruct the lumen and thus entail the clinical picture of gallstone obstruction in the absence of gallstones.

Gann, Tokyo

November, 1919, **13**, No. 3

- *Fowl Sarcoma. IV. T. Ogata, S. Kawakita and T. Mita.—p. 7.
 *Necropsy Findings in Brain Cancer Case. M. Nagayo.—p. 9.

Fowl Sarcoma.—This report is the continuation of research on this subject since 1917. The filtered extract of the fowl sarcoma was found more virulent when prepared with distilled water than with saline, and even when sodium chlorid was added later up to a strength of 0.8 per cent. The tumor-inducing substance does not diffuse through animal membranes. These and its other properties indicate that it is a colloidal chemical substance, soluble in distilled water, and that the possibility of a filtrable virus cannot be definitely excluded.

Necropsy Findings in Cancer Case.—Illustrations are given with detailed description (in Japanese) of the necropsy findings in the cerebellum, etc., in the case of the late professor of internal medicine at the University of Tokyo, Baron Aoyama.

Deutsches Archiv für klinische Medizin, Leipzig

April 29, 1919, **129**, No. 1-2

- *Ratio of Residual to Total Nitrogen. E. Becher.—p. 1.
 *Retention of Indican in the Tissues. E. Becher.—p. 8.
 *Bilirubin in the Blood. J. Bauer and E. Spiegel.—p. 17.
 *Clinical Electrocardiography. F. Klewitz.—p. 41.
 *Analysis of the Blood Gases VI. H. Straub and K. Meier.—p. 54.
 *Arteriosclerosis and the Blood Pressure. K. Harpuder.—p. 74.
 *Nonpuerperal Osteomalacia. H. Curschmann.—p. 93.
 *Wandering Heart. Rumpf.—p. 118.

Relation Between Residual and Total Nitrogen.—Becher found the proportions between the residual nitrogen and the total nitrogen about the same in all the tissues, except that it was a trifle lower in the blood serum and in the lungs. After nephrectomy, and in persons who had succumbed to renal insufficiency, the residual nitrogen formed a larger proportion of the total nitrogen than in normal conditions.

Retention of Indican in the Tissues.—In contrast to nitrogen, Becher found no indican in the tissues when the kidneys were functioning well. But with incapacity of the kidneys, retention of indican was evident; the larger proportion was found in the blood, only very small amounts in the tissues.

Bilirubin in the Blood.—Bauer and Spiegel regard familial cholemia as a chemical sign that the liver is constitutionally below par. The bilirubin content of the blood seems to keep at a constant figure in different persons in normal conditions but, they say, it can be reduced by drugs that act on the sympathetic system, and increased by drugs that affect the vagus. Exceptionally high bilirubin content of the blood was found with obstruction of the bile passages, weakness of the myocardium, congested liver, and traumatic hemothorax. On the other hand, the bilirubin content of the blood was abnormally low with diffuse kidney disease, tuberculosis, inanition, and cachexia from cancer.

Electrocardiography in the Clinic.—Klewitz analyzes several hundred electrocardiographic curves from eighty-eight persons, including twelve with sound hearts. He found a negative T peak only in cases of organic heart disease, especially disease of the myocardium. The same can be said when the T peak is lacking, but the prognosis is not so grave as with the negative T peak. A positive T peak does not absolutely exclude organic heart disease, but the prognosis is more favorable when the electrocardiogram shows a positive or even weakly positive T peak. He found further that pressure on the vagus affected the rate of cardiac contraction both in the healthy and in those with heart disease; but a dromotropic effect was evident only with organically diseased hearts. He gives the necropsy findings in some cases in which during life the T peak had been lacking, or had been present at first and had disappeared as the condition grew worse.

Blood Gases.—Straub and Meier describe how the reaction of the blood can be determined by the curve of the binding of carbon dioxide with a known carbon dioxide pressure. They give the normal standard as deduced from fifty-six curves from forty-six persons with 320 separate determinations of the carbon dioxide capacity. The findings in one case of polycythemia suggest a buffer action by the erythrocytes.

Arteriosclerosis, Contracted Kidney and Blood Pressure.—Harpuder paid special attention to the condition of the kidneys and the blood pressure in 1,165 cases of arteriosclerosis, mostly men. The arteriosclerosis alone does not entail high blood pressure, not even when it involves the small arteries of the heart and brain, but the blood pressure runs up as the kidneys develop sclerosis of their smaller vessels. The high blood pressure seems to develop independently of the severity of any disturbance in kidney functioning or the extent of the anatomic lesion. We are justified

in assuming damaged kidneys whenever the blood pressure is over 160 mm. mercury.

Nonpuerperal Osteomalacia.—Curschmann asserts that osteomalacia may occur not only from excessive functioning of the ovaries during the puerperium, but also from excessive functioning of the thyroid gland at other periods of life. This assumption was confirmed by the success of treatment with phosphorus and cod liver oil in a number of cases described. Other cases showed that still others of the ductless glands might be involved, and that the derangement might occur with either deficient or excessive functioning of one or more. Excessive irritability of the vagus or sympathetic system may further complicate the clinical picture, as he shows by some concrete examples. In one, after a phase of hyperthyroidism, there was hypofunctioning of the thyroid, ovaries and parathyroids, manifested in the nullipara of 27 as abortive exophthalmic goiter, then myxedema, and after a few years osteomalacia and tetany. He cites in conclusion a case of neurofibromatosis which seems to be traceable likewise to weakness of the ductless glands, as there is associated nonpuerperal osteomalacia. The woman improved under phosphorus.

Movable Heart.—Rumpf describes the roentgen findings with an abnormally movable heart, and emphasizes the importance of breathing exercises to restore tone to the diaphragm, the wearing of a supporting band, and restriction of the evening meal to fluid or soft food, without meat, and with little bread, to ward off distention of the stomach.

Monatsschrift für Kinderheilkunde, Leipzig

April, 1920, 18, No. 1

- *Protein Therapy for Children. A. Czerny and H. Eliasberg.—p. 1.
- *Hyperthermia with Sclerosis of Basal Ganglions. H. Mammele.—p. 5.
- Capillaries of the Skin in Infants. A. Mertz.—p. 13.
- *Cerebral Rachitis. P. Karger.—p. 21.

Protein Therapy Applied to Cachectic Tuberculous Children.—Czerny and Eliasberg expatiate on the transformation in the condition of certain children with advanced tuberculosis under protein therapy. They used horse serum, and obtained the best results with daily subcutaneous injection of from 0.5 to 2 c.c. Two of the twenty-six cases are reported in detail. A girl of 10, with cyanotic hands and feet, swollen legs, evidently in the demineralization stage with cachexia, almost imperceptible response to the skin tuberculin test, a large tuberculous gland in the neck and a tuberculous focus in the jaw, in three weeks began to improve under two injections weekly of 10 c.c. each of horse serum, to a total of forty-seven injections. By the end of ten months no one would have recognized the plump, rosy child. Nine of the twenty-six children died, but these were apparently doomed when the treatment was begun. The ages ranged from 3 months to 10 years. Of the nine that died all but four were under 2½ years old.

Habitual Hyperthermia with Sclerosis of the Basal Ganglions.—No cause for the constantly high temperature in the 17 months' infant could be discovered until necropsy revealed sclerotic processes in the basal ganglions. Drug tests of the sympathetic nervous system had shown that the temperature anomaly must be of central origin.

Cerebral Rachitis.—Karger states that children with rachitis are mentally backward, they sweat readily from nervous influences and show other anomalies, and the brain is usually abnormally large, although no histologic or chemical changes in it have been detected to date. If a wooden block is laid on the head of a normal infant propped up in bed, it will throw off the foreign weight with its hands or by moving its head, but the rachitic child will let it lie and at most will scream. The softness of the bones does not hinder the child from removing the block; it merely does not think of using its arms for the purpose. It does not begin to walk because it has no spontaneous interest in changing its position. Rachitic children seem to have little sense of taste; they will take cod liver oil or quinin without resistance. Laryngospasm and convulsions, he says, are the only cerebral symptoms of rachitis that have been accorded attention so far. The bending of the legs is not due exclusively to weight

bearing, he explains. Even without weight bearing, the legs are drawn up in the Turkish fashion, and the strain from the muscles in time curves the soft bones. There is every reason to get rachitic children on their feet as early as possible on account of the effect on the general health and especially on the intelligence; and on their interest in their environment and to ward off hypostatic pneumonia. He noted extraordinary improvement in one case in which a rachitic child, isolated on account of an acute infection, was placed with another child isolated for the same purpose. Guarding its toys from encroachment, etc., roused dormant energies. In short, he concludes, the cerebral elements are of more moment for the development of the rachitic child than the somatic. Rachitis is not a disease of the skeleton but is a general disease. Not the rachitic bones, but the cerebrally abnormal rachitic child is what we have to treat.

Münchener medizinische Wochenschrift, Munich

Dec. 26, 1919, 66, No. 52

- Composite Picture of Young Soldier. Geigel.—p. 1491.
- *Etiology of Mongolian Idiocy. W. Stoeltzner.—p. 1493.
- *Luminal Poisoning with Therapeutic Doses. W. Haug.—p. 1494.
- Special Bicycles for the Amputated. L. Zimmermann.—p. 1494.
- Tuberculin Inunctions plus Phototherapy. Hufnagel.—p. 1495.
- Composition of the Blood in Arid Climates. J. Grober.—p. 1495.
- The Military Hospitals of the Foe. E. Michels.—p. 1495.

The Etiology of Mongolian Idiocy.—Stoeltzner found that in three of ten cases of mongolism the mothers during pregnancy had presented constipation, little appetite for food, striking tendency to take on fat in spite of moderate quantity of food eaten, falling out of hair, hypohidrosis, chilliness, great languor, increased need of rest and sleep, apathy and decrease of mental activity—a clear picture of hypothyroidism. Whether there is a causal connection between this syndrome and mongolism Stoeltzner is not prepared to state, but the definite proof of such a causal relation would open the way for active prophylaxis. His findings sustain Lanz' conclusions from his experimental research on the offspring of thyroidectomized animals (1905).

Eruption and Diarrhea During Luminal Treatment.—Haug prescribed in two severe cases of epilepsy 0.1 gm. of luminal three times a day, as recommended by J. Müller. Four weeks in one case, and eleven days in the other after this treatment had been begun, the patients developed high fever, diarrhea with mucous stools, bloody in the first case, and in both an eruption resembling that of scarlet fever, covering the whole body except the face and hands. The total amount taken had been 8.4 and 3.3 gm., and the first patient seemed to be severely ill, with slight stupor. The other presented albuminuria. After suspension of the drug the symptoms subsided in a few days.

Jan. 9, 1920, 67, No. 2

- Infant Feeding with Spontaneously Soured Milk. Rietschel.—p. 35.
- Subcutaneous Injections. A. Falck.—p. 36.
- *Pathologic Movements of Diaphragm in Paraneuritis and Tuberculous Peritonitis. A. Foerster.—p. 38.
- Findings with Improved Illumination for the Eye. L. Koeppe.—p. 39.
- *Bone Fractures and Plaster Splints. M. von Brunn.—p. 42.
- *Secretions of Prostate and Seminal Vesicles. W. Böttcher.—p. 45.
- Prognostic Value and Treatment of Important Cardiac Arrhythmias. K. Grassmann.—p. 46. Conc'n.

Pathologic Excursions of the Diaphragm with Paraneuritis and Tuberculous Peritonitis.—Foerster has found pathologic movements of the diaphragm, as revealed by roentgenologic examination, of value in the differential diagnosis of paraneuritis and tuberculous peritonitis, especially in children. Bilaterally with the latter, and unilaterally with paraneuritis, he has observed an upward displacement of the diaphragm with a flattening of the cupolas, obliteration of the phrenicocostal sinuses and marked interference with the respiratory movements. He has never noted this condition with appendicitis, cholecystitis or pyelitis.

Fractures and Plaster Splints.—Von Brunn states that while serving as expert he was astonished to note the large number of bone fractures that heal in an unsatisfactory manner. Either the setting of the fracture had been done improperly or the neighboring joints had been allowed to become stiff. In many cases it was evident that the fracture

had not even been diagnosed as such, which in this era of roentgen rays he finds inexcusable. One common source of error was that fractures of the radius were wrongly diagnosed as sprains. Even when the fracture had been correctly diagnosed, the surgeon had not persisted long enough but had stopped short of normal apposition. When the reduction of the fracture may have been satisfactory, frequently sufficient care had not been taken to make the result permanent, and the bone fragments had not healed in the position assumed when the fracture was reduced. He emphasizes that the common commercial ready-made splints do not usually fit the fracture as they should, and that the surgeon would do well to make his own. He describes in detail his method of preparing plaster splints and points out the advantages of the method.

Significance of the Secretions of the Prostate and the Seminal Vesicles.—Böttcher states that in addition to the three commonly recognized functions of the secretions of the prostate and the seminal vesicles they furnish a protective colloid that counteracts the acidity of the vaginal secretion until the spermatozoa have had time to reach the interior of the uterus.

Wiener klinische Wochenschrift, Vienna

Jan. 8, 1920, 33, No. 2

Heliotherapy in Pulmonary Tuberculosis, and Its Relation to Immunization. H. Hayek.—p. 33.

Pulmonary Tuberculosis During the War: Statistics. A. Engel.—p. 40.
Reaction of the Tuberculous to Tonsillitis and Revaccination. O. Országh.—p. 42.

*Zinc Precipitation Treatment of Sputum. A. von Fejér and W. von Schulz.—p. 43.

Fatal Case of Dental Periostitis. O. Scheuer.—p. 44.

Leukocyte Count After Drying of Specimen. A. Reichart.—p. 45.

Examination of Tuberculous Sputums by the Zinc Precipitation Method.—Von Fejér and von Schulz had found the Ditthorn and Schultz enrichment process for tuberculous sputum superior to the Uhlenhuth process, especially when examining a large number of specimens, because of the time consumed in centrifuging with the Uhlenhuth method. But they discovered that in the Ditthorn and Schultz method the specimens, when not properly fixed by heat or if left too long in the carbofuchsin solution, take on a dark color which makes the search for tubercle bacilli impossible. They describe a modification which avoids this, and in 1,129 specimens of sputum 16.9 per cent. were positive by their modified method and only 13.8 per cent. by the Ditthorn-Schultz method. The specimen of sputum is rendered homogeneous and fluid by the usual means, and then equal quantities are poured in two sedimenting tubes. To one tube 0.5 cm. of a 20 per cent. solution of ferrous chlorid is added; to the other, 0.5 cm. of a 20 per cent. solution of either zinc acetate or zinc chlorid (the two salts are equally good). With this quantity of the reagent the resulting precipitate can be easily examined on a single slide. The tubes are allowed to stand for several hours, and when the sediment has been precipitated most of the supernatant fluid is poured off. The sediment suspended in a small quantity of the fluid is transferred to a square of filter paper several layers thick. In a few minutes, when the superfluous fluid has been absorbed, the sediment, still damp, is spread on the slide in a moderately thick layer. When it is dry, fixation over a flame follows and staining completes the process.

Hospitaltidende, Copenhagen

March 10, 1920, 63, No. 10

Isolated Incarceration of the Appendix in Femoral and Inguinal Hernias. O. Vedel Brandt.—p. 145.

March 18, 1920, 63, No. 11

*Clinical Training in the University. T. Rovsing.—p. 161.

*Gas Phlegmons After Injection of Stimulants. O. Thomsen.—p. 172.

Clinical Training of Medical Students at Copenhagen.—Rovsing describes the system of what he calls "volunteer service" by the medical students in the hospitals, saying that it is peculiar to the University of Copenhagen and has been in vogue there for centuries. The students now have asked to have the period for this service reduced from twelve to six months, and he argues against this, saying that the

university may well be proud of this feature. He had special occasion to note its workings during the World War as the newly fledged Danish physicians serving in the various hospitals of the belligerents compared most favorably with the average from other nations.

Gas Phlegmons After Injection of Stimulants.—Thomsen relates that he knows of ten cases in which a gas phlegmon developed at the site of injection of a stimulant during the recent epidemic. In testing means for sterilizing, he found that solutions of morphin, cocain and certain other drugs passed through the Berkefeld filter without loss. After evaporating the filtrate the residue weighed the same.

Norsk Magazin for Lægevidenskaben, Christiania

May, 1920, 81, No. 5

*Physical Standards for Young Children. C. Schiøtz.—p. 425.

*After-Treatment of Luxation of Hip Joint. V. Bülow-Hansen.—p. 460.

*Influence of Physical Exertion on the Heart. L. Dedichen.—p. 465.

*The Fat in Diabetes. H. C. Geelmuyden.—p. 479.

Standard Weight and Height Between Two and Six.—Schiøtz tabulates the findings in 513 children of this age in Norway, and compares them with similar statistics up to the age of 17, pointing out certain laws and seasons which seem to control the physical development.

After-Reduction of Congenital Dislocation of the Hip Joint.—Among the points emphasized by Bülow-Hansen in the after-care is that adduction should never be done until after pronation of about 90 degrees. Also that even when the roentgen rays show the head concentric in the acetabulum, if there is any contracture of the adductor muscles, he stretches the adductors under general anesthesia and applies a cast anew for two or three weeks, resuming then massage and exercise. In one girl of 6 the bilateral luxation was ideally corrected on one side but on the other the neck of the femur fractured and the leg was 6 cm. shorter than its mate. He advised against further intervention until the child had grown up. At 18, slanting osteotomy on the leg of normal length shortened it for nearly 6 cm. so the legs are now even.

Influence of Physical Exertion on the Heart.—Dedichen's study of 226 ski runners before and after a 50 km. race over a difficult course, and of 361 athletes traced over six years, demonstrates that neither at the time nor later was there any injurious influence on the heart when the ski athletes were at least 20 years old, healthy and in good training. The control over adequate training is possibly not quite severe enough. Hypertrophy of the heart was found later in 13.8 per cent. but nearly all the ski athletes were laborers, doing heavy work. The hospital records of 459 laborers doing heavy work showed hypertrophy of the heart in 8 per cent. and necropsy records showed up to 33 per cent. In one of the ski athletes the heart was hypertrophied, 15.1 cm. in diameter, but he refrained from the sport and from heavy work for a year, and by that time the diameter was only 13.5 cm. for weight of 68 kg., height 170 cm., and in every respect the health has kept perfect to date.

Fat Metabolism in Diabetes.—Geelmuyden's comparative study of the acute diabetes in pancreatectomized dogs and human diabetes has, he thinks, thrown light on the processes in the intermediate metabolism and their genetic connection, especially in regard to the production of sugar from fat. In research of this kind, he emphasizes, all the changes in the metabolism must be taken into account, not only the glycogen and blood sugar, the glycosuria and the ketonuria but the migration of fat, the transformation of albumin, the total metabolism and the transformation of energy. Such studies hitherto have been restricted to only some of these elements and their interrelations have been overlooked. He shows that carbohydrates promote the formation of sugar from fat, and that the output of sugar is not increased by feeding fat unless a certain amount of carbohydrate is given with the fat. This he thinks is probably the reason why carbohydrates are so injurious in human diabetes. Diabetes in pancreatectomized dogs seems to be due to the very same anomaly in the metabolism as in human diabetes. The chief difference between them is that it occurs suddenly in the dogs while in man it is of long, slow development.

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CONSERVATION OF THE MENSTRUAL FUNCTION *

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The surgeon approaches his work with the physical condition of the patient in view. He achieves a tangible success, but occasionally is not rewarded by the gratitude of the patient because of intangible changes in the nervous system which follow the operation. Physical cure is sometimes purchased at the price of nervous instability; and we speak wisely of neurasthenia, psychosis, neurosis and hysteria. Often the same physical cure could have been obtained without creating the disturbances so troublesome to the patient, the family and friends. Christian (?) science (?) and similar cults go to the other extreme, refusing to recognize the physical and considering only the psychic.

The central nervous system has a short heredity; its characteristics are not fixed, but unstable, especially in some families. The central nervous system is influencing, to a great extent, visceral functions that existed long before its development. Attempts at retroactive controls always have many exceptions in law, and are physiologically troublesome in man. The nervous system in man weighs as much as the liver and has as many or even more possibilities of functional disturbances, because it is less stable in its functions. The only difference is that the bile function can be seen, and disturbed thoughts cannot be seen—only their results. One group of physicians will say that all these psychic disturbances have a physical basis, apparently believing that a physical basis exists only outside the central nervous system. They then begin very properly to hunt for the cause of these disturbances, and often very improperly attempt to place the blame for them on some real or fancied physical defect with which there is little or no connection.

The uterus, the ovaries and the tubes have chiefly suffered from these misguided efforts at relief, efforts apparently based on the conception that woman's psychic disturbances are generated in her reproductive organs. After all, it is the mental and not the physical which controls our estimate of man.

To one who has had occasion to observe the results of surgical operations on the reproductive organs of women, the truth of these remarks is self evident. Today I consider every surgical disease of the generative organs of women with their future ner-

vous condition in mind, as well as the physical state which is desired. In many instances there is no choice. In malignant disease of the generative organs radical operation is necessary to save life, with relatively small regard for the future mental condition of the patient. In cases of benign neoplasms and inflammatory disease, however, the future condition of the patient as related to the operation, *psychic* as well as physical, must ever be remembered. Happiness is a state of mind, and a state of mind is not necessarily a state of body. This belief is borne to the consulting surgeon by the large number of women he observes who have been operated on once, twice or many times. Their relations to life are changed, they are put out of touch with their social conditions, and they attempt, ever and again, to gain relief from mental and nervous suffering by further resort to treatment of the physical.

When I began practice, abdominal surgery was in its infancy. The ovaries and tubes were removed on indications that would not be considered today. With the growth of knowledge this practice ceased, but in its place developed many mis-called conservative operations. Instead of being removed, the ovary was subjected to unnecessary tinkering, and the ovary does not stand such operations well. Frequently the patient developed sequelae that necessitated removal of the ovaries later. The small cystic ovary especially has been the victim, not of the surgeon, but of the operator. Following this type of operations it will be found that a group of patients return complaining of what they have been told are adhesions, but without mechanical signs. I have seen a number of patients who have been operated on and reoperated on, with only temporary success, for adhesions that did not produce mechanical symptoms. I have little faith in the common belief that adhesions located by the patient, but which cannot be located by the surgeon, are the cause of serious trouble.

IMPORTANCE OF THE OVARY

The generative organs of women are for the purpose of reproduction. The ovary controls the physiologic cycle, the uterus receives and carries the impregnated ovum to term. The uterus is often blamed for troubles with which it really has little to do. The curet is a much abused instrument. The endometrium is relatively seldom diseased, and a high percentage of menstrual disturbances are ovarian and tubal in origin. A sufficient distinction is not made between irregular bleedings from the uterus and true menstruation. Menstrual blood does not clot. If the blood forms true clots, the endometrium may be suspected, otherwise, the ovary. The ovary is an organ of internal secretion independent of the production of ova. The

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

gonadial secretion of the interstitial cells of the ovary controls the development of the female characteristics. It influences the closure of the epiphyses of the long bones, and is related to the endocrine disturbances to which are due the tall, spindling types of giantism. The effect of the ovary on the individual, including menstruation, is independent of direct nervous connection. Tuffier,¹ in radical operations for pus tubes, removed both ovaries and tubes, sterilized the ovary for surface infection in an alcohol flame or by dipping in tincture of iodine, and planted it between the peritoneum and the abdominal fascia. The menstruation ceased for four or five months, and symptoms of the menopause developed; then menstruation started and continued normally. My colleague, Dr. Sistrunk, has treated a number of cases in this manner.

The effect of the internal gonadial secretion on the breast is marked. Beatson,² in some inoperable cases of carcinoma of the breast, removed the ovaries, and most remarkable changes in the breast took place, with disappearance or partial disappearance of the cancer. The autonomic (sympathetic and parasympathetic) nervous system, acting with the hormones (internal secretions) of Starling,³ controls the functions of the reproductive organs. The sympathetic fibers can be directly traced, and in some of the lower animals (Tasmanian devil) branches of the vagus parasympathetic nerve pass to the horns of the uterus, showing direct cranial connection. The nodes of Keith,⁴ acting through the nonstriated uterine muscle, introduce physiologic connections between the visceral and genital functions.

The internal secretion of the ovary generally is closely related to the endocrine system, and widespread effects are manifest on the cessation of the ovarian function. In several instances I have noted that the ovaries maintain their normal size and apparently function after the removal of the uterus. Twenty-two years after performing a vaginal hysterectomy on a young woman for sarcoma of the uterus, I had occasion to open the abdomen. I found the ovaries apparently normal. The lesson to be drawn is that the removal of the ovary is seldom indicated for inflammatory diseases, and a sufficient amount should be saved, if possible, to continue the menstrual function. The transplantation of ovaries from one woman to another, so far as I know, has not been followed by return of menstruation or impregnation. A few suggestive instances have been reported, however, by Franklin Martin⁵ and by Robert Morris.⁶ Morris suggests that ovarian tissues may have been left in the ovarian ligament at the time the ovaries were removed, and this nonfunctioning ovarian tissue may have been stimulated to action by the introduction of ovaries from another woman. He relates some experiences to confirm this opinion.

The thoughtful surgeon conserves menstruation when the thoughtless operator sacrifices it. On one occasion, a good many years ago, when I was oper-

ating for extra-uterine pregnancy on a young woman greatly exsanguinated, I rapidly removed the ovary with the tube in order more quickly to secure a pedicle. Two years later this patient returned with benign cystadenoma in the remaining ovary. At the age of 24 she was deprived of the right to motherhood, and her menstrual function was lost. In tubal pregnancy it is seldom necessary to remove the ovary. I have operated for double dermoid cyst of the ovaries in many cases in which the larger cyst had destroyed the entire ovary, but I have been able to enucleate the smaller cyst from the other ovary, and to save sufficient ovarian tissue so that menstruation may continue. Without discussing further conservation in benign diseases of the ovaries and tubes, I may add that I have seen acute cases of gonorrheal infection of the tubes, including the ovaries and pelvic peritoneum, spontaneously subside, and several years later the patient has become a mother. It is often best not to molest the chronic inflammatory remnants left after such infections have subsided.

Independent of its rôle in reproduction, the menstrual cycle has a striking effect on the female during the period between puberty and the menopause. All surgeons have seen the shrinkage of the uterus, shortening of the vagina, and trophic changes following ovariectomy. The nervous and psychic changes of the normal menopause are aggravated in young women by operations that check the menstrual flow. *It is probable that menstruation itself has some important endocrine function.* The effect on the patient is essentially the same whether menstruation is stopped by removing the ovaries and leaving the uterus, or removing the uterus and leaving the ovaries. Conservation of the reproductive function is of first importance, but conservation of the ovary for the continuance of its internal secretion and its effect on the production of menstruation is second only to the reproductive function; and even if reproduction is impossible, conservation of the ovary or some portion of it for the sole purpose of continuing menstruation is of greatest importance. The estimation of the probable success of an operation from the patient's standpoint may turn on whether or not the menstrual function is to be lost.

Sacrifice of the reproductive and menstrual functions, however, is not confined to removal of the ovaries, but is concerned in operations on the uterus, especially for myoma. Hysterectomy has become an operation so thoroughly organized that almost every operator has some special bit of technic in connection with it of which he is proud, and many a uterus is unnecessarily sacrificed when a myomectomy would be the better operation and would save both the menstrual function and the possibility of motherhood. Hysterectomy is seldom necessary for benign myoma in a woman under 35, and demands an excellent reason in a woman under 30. At 45, hysterectomy is probably the best procedure. Sutton has shown that 10 per cent. of women who require hysterectomy for fibroids after 50 have coincident malignant disease.

RESULTS OF MYOMECTOMY

It has been argued against myomectomy that it is the more dangerous operation; but in our series of 741 cases the mortality was a shade under 1 per cent. (0.9). Abdominal myomectomy was performed in 617 of the 741 cases, with three deaths, or 0.5 per cent. There were four deaths in the 124 vaginal myomectomies, about 2.7 per cent. Every patient dying in the

1. Tuffier, T.: Transplantation of Ovaries, Surg., Gynec. & Obst. **20**: 30-34, 1915.

2. Beatson, G. T.: The Treatment of Inoperable Carcinoma of the Female Mammæ, Glasgow M. J. **76**: 81-87, 431, 1911.

3. Starling, E. H.: The Chemical Control of the Body, J. A. M. A. **50**: 835-840 (March 14) 1908.

4. Keith, A.: The Differentiation of Mankind into Racial Types, Lancet **2**: 553-556 (Sept. 27) 1919.

5. Martin, F. H.: Ovarian Transplantation in Lower Animals and Women: Review of the Literature and Bibliography, Surg., Gynec. & Obst. **13**: 53-63, 1911.

6. Morris, R. T.: A Case of Heteroplastic Ovarian Grafting, Followed by Pregnancy and the Delivery of a Living Child, Med. Rec. **69**: 697-698, 1906.

hospital, irrespective of the cause of death or the length of time following operation, is counted as dying from operation. Following myomectomy in these 741 cases, thirty-three women raised one child, eleven raised two or more children, and fifteen were pregnant at the time the investigation was made. Twenty-three married women who were sterile before operation had one or more children after operation.

Nineteen pregnant women were subjected to myomectomy because of acute degenerative changes in myomatous tumors, and all lived. Thirteen of the pregnancies were intra-uterine. Eleven of the patients went to term and bore living children; two miscarried within a week after operation, but in each, miscarriage was imminent at the time of operation; three showed signs of impending miscarriage previous to operation which subsided after the removal of the tumors. Six women had extra-uterine pregnancies at the time the myomectomy was performed; in all, rupture had already occurred, with large pelvic hematoceles, one with a dead fetus of four and one-half months. The myomectomies and the operations for the extra-uterine pregnancies were performed at the same time in these six cases; it seemed possible that the presence of the tumors was responsible for the ectopic pregnancies. One of the patients has since borne a child.

It has been asserted that frequently tumors develop after myomectomy. Nineteen of these 741 patients (2.56 per cent.) required secondary operations; in eleven cases the operation was performed five or more years after the myomectomy, and in one, thirteen years afterward. One of the nineteen patients had a child after myomectomy. The majority of the secondary operations were performed for inflammatory disease. It was difficult to obtain accurate pathologic data of secondary operations, since more than half were performed elsewhere; but none of the patients had developed malignant disease. In many of the cases in which the second operation was performed for recurrence of the fibroids, the operation could today be avoided by the use of radium. In none of the cases reported were the recurring tumors large, because the patients, being aware of the former condition, were on the alert. Hysterectomy was usually performed, because the patient had been carried along by the myomectomy to the age in which a radical operation is of less importance.

In many cases of myomatous disease it is not possible to save a uterus that will bear a child; but in cases otherwise suitable, one ovary and enough of the endometrium can be saved to continue the menstrual function. I have removed all of one wall of the uterus and one ovary and tube and made plastic restoration; the patients have continued the function of menstruation normally for years.

In a former paper⁷ I noted the removal, by myomectomy, of a large tumor which had grown from the cervix. In the process of removing the growth, the fundus of the uterus was completely separated from the cervix and vagina, but I was able to anastomose the uterus to the cervix with catgut sutures with perfect results. I have had one other case of the same kind. In the patient has had hemorrhages and a myomectomy performed, the endometrium should be opened, inspected, and thoroughly curetted under the eye. In my earlier cases I did this with a good deal of hesita-

tion, fearing to infect the uterine wound; but no such infection has occurred. The endometrium covering a submucous fibroid is atrophic. Cancer begins in the hypertrophic mucosa in the vicinity of the tumor, and the danger of cancer of the body of the uterus is increased by fibroids. In 1919, in an examination of 4,000 specimens of myomas of the uterus in our surgical museum, Evans⁸ found seventy-two malignant and related nonepithelial tumors of the uterus, thirteen definitely and eleven potentially sarcomatous, and forty-eight cellular tumors with malignant possibilities. He showed that by counting the mitotic figures in the cell nuclei, the chances of cure could be predicted; the giant cells are probably a defense and not a malignancy. The sarcomatous growths may be multiple; they are yellowish rather than glistening white, and on section they are softer than fibroids, and do not enucleate readily. The careful surgeon seldom makes the mistake at the operating table of believing them to be myomas and attempting myomectomy. If so, the frozen section will demonstrate the error before the operation is completed.

Radium must justly be considered, in selected cases, a competitor of hysterectomy, but it has no competitive standing in cases suitable for myomectomy. When bleeding necessitates interference in the menopause period, radium has a remarkable field of usefulness. If the tumors are large, coming well up into the abdomen, and are caused to disappear by the use of radium, the menopause is brought about. Massive doses of radium usually destroy the function of the ovaries and uterus, leaving these nonfunctioning organs to await an uncertain future. We must sharply distinguish between nonoperation and conservation. Radium may be even more destructive than hysterectomy, as in 50 per cent. of hysterectomies one ovary, and in 25 per cent. both ovaries, can be saved. It must be remembered, too, that at middle age 12 per cent. of white women and 30 per cent. of colored women have myomas. Every surgeon has observed, over long periods of time, women with multinodular myomatous uteri who have had no symptoms, and often have raised families. The mere presence of small to moderate sized, symptomless myomas that can be watched by physicians does not indicate operation, or treatment of any kind; many are now having radium treatment. I am convinced that this is not wise. While menstruation usually returns within a few months, it may fail ever to reappear even after the use of a moderate amount of radium.

HYSTERECTOMY FOR UTERINE MYOMA

I believe that total hysterectomy is a wise procedure if it can be performed safely, and usually it can. Leaving the cervix leaves an average cancer liability. We have seen twelve cases of cancer occur in the left-over cervix after supravaginal hysterectomy. Removing a cone of mucous membrane of the cervical canal from above, or plunging the cautery through the cervical canal to destroy it, is not sufficient. Peterson⁹ has shown that only one third of the cancers of the cervix begin in the cervical canal (adenocarcinoma). Two thirds of the cervical cancers are epitheliomas

8. Evans, N.: Malignant Myomata and Related Tumors of the Uterus (Report of Seventy-Two Cases Occurring in a Series of Four Thousand Operations for Uterine Fibromyomata), Surg., Gynec. & Obst. 20: 225-239 (March) 1920.

9. Peterson, R.: Age Distribution and Age Incidence in Five Hundred Cases of Cancer of the Uterus, Surg., Gynec. & Obst. 29: 544-553, 1919.

7. Mayo, W. J.: Some Observations on the Operation of Abdominal Myomectomy for Myomata of the Uterus, Surg., Gynec. & Obst. 12: 102, 1911.

originating in the vaginal parts of the cervix. After total hysterectomy, the patient seldom complains of local trouble. If the cervix is left, however, a foul, irritating leukorrhea sometimes results from degenerative changes in the mucous glands of the cervix. Shrinkage of the vagina appears to be greater after subtotal than after total hysterectomy. It seems as if nature, in the effort to shrink the cervix following supravaginal hysterectomy, is stimulated so greatly as to increase the shrinkage of the vagina as well.

Russell¹⁰ has called attention to the advisability of opening the abdomen, drawing up the uterus, and opening the anterior wall to expose the endometrium for examination in certain cases of prolonged uterine hemorrhage without apparent good cause. Since Russell's observation we have had occasion to do this twenty-six times in young women, and thus have been able to save the uterus. I have found polyps in one horn, which could not be reached with the curet, and small submucous fibroids. In a young woman who has hemorrhages from uncertain cause, exploration of the cavity of the uterus through the abdomen is preferable to radium, and should precede hysterectomy in doubtful cases.

CONCLUSION

I would reiterate that conservation of the menstrual function is of the utmost importance even if pregnancy is not possible, and that the surgeon who faces the necessity of removing the uterus or the ovaries, and the bringing about of all those endocrine changes attending the procedure, is taking a serious responsibility which must not be assumed lightly. The heredity of the patient is responsible for the nervous instability, but the operation may be the match which lights a fire, in the ashes of which the patient finds herself unable to readjust her life to her living condition.

ABSTRACT OF DISCUSSION

DR. C. JEFF MILLER, New Orleans: I am in accord with Dr. Mayo regarding the conservation of menstrual function, and the necessity of a more conservative attitude toward pelvic pathology. The thoughtful surgeon hesitates to remove ovaries unless they are hopelessly diseased, but we are just as radical in the treatment of fibroids of the uterus. Removal of the uterus is as radical, so far as function is concerned, as removal of the ovaries, and is equally as distressing to the patient. I agree with Dr. Mayo that myomectomy can be performed in many cases in which hysterectomy usually is done. I have had a sufficient number of pregnancies result after myomectomy to prompt me always to review a case with the view of performing myomectomy in preference to hysterectomy. We were formerly taught that myomectomy carried a slightly higher mortality rate than supravaginal amputation, chiefly owing to the risk of hemorrhage and occasional infection when the uterine cavity was opened. Later statistics will show that this was a defect in technic which has been overcome. During the past four years, I have performed more myomectomies than formerly, for the reason that if myomectomy failed to control excessive bleeding, radium could be used to complete the cure without the necessity of a second operation. In some case I have removed the entire musculature, preserving enough of the mucous membrane to conserve menstruation. Several patients developed a metrorrhagia, and sometimes menorrhagia which required further treatment.

Dr. Mayo is also correct in stating that total hysterectomy is preferable to a supravaginal amputation. If the proper technic is followed, total hysterectomy requires no more time, there is no greater risk of postoperative hemorrhage, and

convalescence is decidedly smoother. I have employed radium in the treatment of fibroids for six years, and I am enthusiastic as to its results in properly selected cases. But, until we know how much permanent damage is done by radiation, we should consider its use in young women as being probably more radical than myomectomy. I advise myomectomy for all young women, especially if the growth is a single one. It is necessary to produce an amenorrhea in order to cause shrinkage of a fibroid, and as yet we cannot gauge the dosage with sufficient accuracy to warrant its indiscriminate use in young women. As to the management of cystic ovaries: surgeons do not follow up their cases if they continue to resect ovaries. Only in exceptional instances should ovaries be resected. As a rule, the ovary is sufficiently involved to justify its removal, or it is healthy enough to let alone. In certain cases of serious pelvic infection where both tubes are removed, and the ovaries are involved to such an extent that it is not safe to leave them, transplantation of portions of an ovary will preserve menstruation for an indefinite time, or sufficiently long to allow of a gradual menopause without the uncomfortable results that so frequently follow abrupt cessation.

DR. JOHN O. POLAK, Brooklyn: Five years ago I reported the end-results of conservation of menstruation in connection with conservation of ovarian function. My observations are in accord with Dr. Mayo's: Ovaries are either damaged or not damaged beyond chance of regeneration. Most of the damage produced in these ovaries is due to the circulatory disturbance which is produced by the associated lesions. When this is corrected these ovaries regenerate themselves, and the so-called multicystic ovary, as large as a walnut, prolapsed in the pelvis, does not necessarily need to be removed. They have been removed only because of lack of knowledge of the pathology. Furthermore, it takes more than the leaving of an ovary to satisfy a woman that the psychic effect of the actual occurrence of the bloody discharge had a great deal to do with the comfort or discomfort of the woman. Where possible, it is advisable to retain a portion of the uterus, with its uterine mucosa, or when leaving a portion of the ovary, or even both ovaries. In cases of fibroid tumors, when the uterus is removed, leaving an ovary or both ovaries, the variations in blood pressure studies are higher than in those cases in which a portion of the uterus is preserved which produces a balance in the ovary and the other internal secretions.

DR. ROBERT T. MORRIS, New York: Conservation of the menstrual function has been overlooked in our zeal to do the right thing for the patient. Conservation of the menstrual function may often be obtained by ovarian grafting—when we remove an ovary in a mass with other structures, if a part of the ovary be placed back anywhere within the patient's economy. The time is coming doubtless when we shall be able to do heteroplasty. The heterograft is destroyed by antibodies and we may be about to make antibodies to meet these antibodies. We are just about on the verge of knowing something about that subject. Many men have argued in favor of the entire removal of the uterus in cases of Neisserian infection with its terminals. Why cannot we sometimes in confidence tell the patient frankly and fearlessly every feature of her case? Tell her the dangers of leaving a part of her uterus, the possibilities of a pregnancy if we leave the uterus, or the larger part of it. The day has passed when we cannot lay our problems before our patients.

DR. ALBERT J. OCHSNER, Chicago: I agree with Dr. Mayo. There is, however, this feature to be borne in mind. Some years ago I had charge of the surgical material in a hospital in which there was practically always reinfection in cases operated for pelvic infection unless the uterus was removed. At present there is practically never a reinfection because the patients belong to an entirely different social group. In the one case the hospital was supported by the wealthy women of the city and many of the patients treated there did not earn an honest living but depended on vice and charitable citizens. At the expense of these good people they were put into condition to take up again their

10. Russell, W. W.: Remarks on the Treatment of Tuberculosis of Uterus and Fallopian Tubes, *Ann. Surg.* 28: 468-471, 1898.

vicious service and they were practically certain again to become infected. In that class of patients in our city hospitals and in the hospitals supported by charity the menstrual function should be abolished by the removal of the uterus. So far as the difference in the mortality between hysterectomy and myomectomy is concerned, I have found that many of the deaths are due to pulmonary thrombosis. The percentage of pulmonary thrombosis in these cases varies from 0.1 per cent. to 2 per cent. The pulmonary thrombosis is very largely due to the lack of perfect hemostasis. Some years ago Kelly pointed out a simple method of securing hemostasis in myomectomy by placing one suture 1.5 cm. beyond either end of the incision in the uterus. Several years ago Professor Bue of Montevideo pointed out the fact that by placing a purse string suture over the entire field at the conclusion of a hysterectomy, whether this be a supracervical or a complete hysterectomy, the same result is obtained—no hemorrhage, no blood clot, no raw surface, a perfectly dry wound. This one feature reduces the mortality from pulmonary thrombosis enormously.

DR. WILLIAM J. MAYO, Rochester, Minn.: The discussions indicate that general surgery interests all surgeons engaged in the surgical specialties, and that the so-called gynecologist is simply a general surgeon who limits his work but not his interests. About twenty years ago, Dr. Ochsner told me that if I did not tie my ligatures so tight in my myomectomies, I would not have any postoperative trouble. I followed his advice and did not again have cause to worry over these unfavorable symptoms.

SPONDYLITIS AND ABDOMINAL PAIN

WITH A DISCUSSION OF NERVE-ROOT SYMPTOMS
SIMULATING VISCERAL DISEASE *

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Disease involving the articulations of the spinal column has occurred in human beings since remote times, as shown by examinations of Egyptian and Nubian remains dating back as far as 4000 years B. C. In addition, present-day postmortem investigations indicate that arthritis of the spine is not at all infrequent. In spite of these facts, one is distinctly impressed by the small number of cases that have been reported in the literature. Guffey,¹ in 1905, was able "with considerable difficulty" to find reports of only 131 cases of osteoarthritis of the spine. McCrae,² in 1909, reported a series of eighty-one cases of spondylitis secured from the records of patients in the Johns Hopkins Hospital, together with a number personally observed elsewhere. In the last few years, however, the extensive employment of roentgen-ray examinations has emphasized the frequent occurrence of spondylitis. The orthopedist has taken prompt cognizance of these roentgen-ray studies of the vertebrae, and by him the condition is regarded as a rather common affliction. It is a question, however, whether the internist and the surgeon also realize the incidence of spondylitis and its definite relation to clinical problems.

In the last seven years (1913-1919) the diagnosis of hypertrophic spondylitis has been made in eighty-

seven patients seen in my consulting room, and other instances of this condition have passed through my clinics in the hospitals and outpatient department of the Medical College of Virginia. I must confess that somewhat over half of the private cases have been recognized in the last two years.

Of this series of eighty-seven cases of spondylitis, forty patients complained of abdominal pain. In seventeen of these forty cases, the presence of visceral disease could be demonstrated, and the rôle played by the spondylitis was either questionable or negligible. In twenty-three patients, however, careful and complete studies seemed to exclude visceral disease as the cause of the patients' complaints. These twenty-three cases of spondylitis form the basis of this article.

The production of pain in spondylitis varies according to the extent and location of the inflammatory process in the spinal joints. This arthritis is frequently associated with hypertrophy of bone, atrophy of cartilage, and calcification of ligaments. As a result, there may be pain and muscle spasm in the back, limitation in the movements of the spine, and the gradual development of rigidity. If the arthritis involves the articulations of the ribs with the vertebrae there is likely to be severe pain on breathing, or even complete absence of thoracic respiration. Of particular interest, however, is the involvement of the nerve-roots by extension of the inflammation or by direct pressure of the exudate and new-bone formation.

Pressure on the nerve-roots in spondylitis, or their involvement by extension of the inflammation, gives rise to more or less pronounced sensory disturbance, characterized by pain in the distribution of these nerves. This pain may be perceived in the back, shoulders, hips or extremities, or it may be referred to the thorax or abdomen. The character of the pain varies greatly from a dull aching or drawing sensation to the most agonizing paroxysms. Certain patients with spondylitis suffer little or no pain in the back and make absolutely no mention of stiffness or other disability, while the referred symptoms may be pronounced. The thoracic, abdominal, brachial and sciatic pains of spondylitis may occur on one or both sides of the body; if bilateral, however, they are generally more severe on one side.

The referred pains of spondylitis are increased, as a rule, by movements of the body, especially walking, stooping or bending, and are promptly relieved by rest in the recumbent posture. In other instances the pain occurs in the night after the patient has been sleeping, and is attributed to relaxation of the accompanying muscle spasm, which acts as a guard or splint against sudden movements in the waking hours. Spondylitis occurs occasionally in persons who complain of no symptoms, either local or referred.

The involvement of the nerve-roots in arthritis of the spine was emphasized by some of the earliest writers on the subject. In fact, the preponderance of nervous symptoms in certain cases led von Bechterew, in 1892, to separate a special type of spondylitis, characterized chiefly by referred symptoms, such as pain, paresthesia, muscular atrophy and paralysis.³ That he regarded this syndrome as primarily a nervous disease, with secondary involvement of the spine, is now only of historical interest.

* Read before the Section on Practice of Medicine at the Seventy-first Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Guffey, D. C.: A Collection and an Analysis of the Reported Cases of Osteo-Arthritis of the Spine, Univ. Penn. M. Bull. 18: 10, 1905.

2. McCrae, Thomas: Osler's Modern Medicine, Philadelphia, Lea Febiger 6: 534, 1909.

3. A discussion of von Bechterew's views, together with a good account of the pathologic and neurologic features of hypertrophic spondylitis, is given by Rhein, J. H. W.: Pathologic Report of the Nervous System in a Case of Spondylose Rhizomelique, J. A. M. A. 51: 463 (Aug. 8) 1908.

The fact that the nerve-root pains of spondylitis may simulate visceral disease is quite obvious. That actual confusion in diagnosis may occur, however, is not generally recognized. After a somewhat detailed search of the literature I have been able to find only five references to such a contingency. Chute,⁴ in 1904, reported five cases of arthritis of the spine with referred pains imitating lesions of the kidney, prostate or seminal vesicles. Smith,⁵ in reporting sixteen cases of spondylitis in 1907, mentioned that one patient had undergone appendectomy for the relief of abdominal pain, which was subsequently shown to be due to the referred nerve-root pains of spondylitis. In 1912, Dickson and O'Neal⁶ gave the histories of three patients who suffered from both visceral disease and vertebral arthritis. In each instance, operation was performed, with removal of gallstones in one case, a kidney stone in a second case, and the repair of perineal lacerations in the third case. The persistence of symptoms in each patient led to the subsequent discovery of spondylitis. In two of their cases the nerve-root pains were acute and similar to tabetic crises. In their conclusions they emphasized the fact that "no examination (of a patient) is complete without a careful inquiry into the condition of the spinal cord and spinal column." Recently Allan and Squires⁷ have reported two cases of spondylitis, in one of which the patient was subjected to a laparotomy for supposed gallstones. Finally, a good discussion from the roentgen-ray standpoint is contained in the recent article by Blaine.⁸ This author lays particular emphasis on the fact that nerve-root pains may exactly simulate the acute suffering of renal lithiasis. The article is illustrated with roentgenograms of three patients with spondylitis in whom the clinical diagnosis of renal calculus had been made.

ILLUSTRATIVE CASES

As mentioned above, out of a series of eighty-seven personally observed spondylitis cases there were twenty-three patients who complained of abdominal pain, in whom visceral disease could apparently be definitely excluded as the cause of their suffering. In order that this report may not be too lengthy, I have abstracted below the histories of six of these cases. In Case 1 the roentgenogram of the spine showed no gross changes. The clinical findings were typical, however, of acute arthritis, secondary, apparently, to a pyogenic infection of the skin. The nerve-root pains were of a most severe character in Cases 1, 4 and 5, while Cases 3 and 6 illustrate the vague abdominal distress that may accompany arthritic changes in the spine. Cases 2 and 4 were subjected to laparotomy, with only a postoperative discovery of the spondylitis. Surgical treatment had been advocated in Cases 1 and 5 prior to the establishment of the diagnosis of vertebral arthritis. A seventh case, recently seen in my clinic at the Virginia Hospital, is reported because of its extraordinary interest. In all the clinical material at my disposal, both private and institutional, referred

pains due to spondylitis have been much more frequently encountered than the visceral crises associated with tabes dorsalis and other organic diseases of the spinal cord itself.

CASE 1.—Clinical Summary: Severe pain in left back and flank, with acute exacerbations imitating renal colic; urine negative; two roentgen-ray examinations revealed no calculi in urinary tract; roentgen-ray examination of spine also negative, but clear clinical evidence of spondylitis; complete relief followed orthopedic treatment.

History.—Mr. W. (3575), aged 17, student, seen Jan. 21, 1913, whose complaint was pain in the left flank and back, had been in very good health, with no history of acute infections until the summer of 1911, when he began to suffer with boils, which had been very troublesome. He was weak and had felt bad ever since the furunculosis started. Oct. 11, 1912, he was suddenly seized with an agonizing attack of pain in the left flank, for which he was given large amounts of whisky and three hypodermics. He was at school in North Carolina at the time, and his attack was considered to be kidney colic. The urine was examined and was said to show no albumin, pus or blood. He had no urinary disturbances except that he believed he passed an excessive amount of urine. He had no herpes. For five weeks after this acute attack he suffered with more or less pain in the left back and flank, and had some nausea. Roentgen-ray examination during this period disclosed no renal calculus. Jan. 16, 1913, he had a second similar acute attack and was given six hypodermics. He said that his back had continued to hurt; also that he could not walk or run well because of increasing the pain. He had had pains beneath the costal borders on both sides of the body, also pain across the small of the back about as severe on one side as the other.

Examination.—Complete physical examination was negative, except as follows: The skin showed considerable acne, and there was general abdominal tenderness, more marked on the left side. The patient handled himself stiffly. The lower dorsal and lumbar spine was very tender and showed marked restriction of motion. There was no kyphosis or scoliosis. The slightest jarring caused pain in the back. The reflexes were normal.

Examinations of the blood and urine were negative.

Stereoscopic roentgenograms of the spine disclosed no gross disease. Roentgenograms of the urinary tract revealed no evidence of calculus in kidneys, ureters or bladder.

Course.—The patient was referred to the orthopedist, who concurred in the diagnosis of acute arthritis of the spine with root pains. Under appropriate orthopedic treatment the patient was promptly relieved of his pains, and subsequently went on to a complete recovery.

CASE 2.—Clinical Summary: Sharp pain in abdomen when up and about; one attack of acute pain in left hypochondrium; patient's back overlooked in examination, as were also significant findings on roentgenograms; operation and removal of grossly diseased appendix; persistence of pain and post-operative discovery of marked spondylitis.

History.—Mrs. P. (5590), aged 70, seen March 5, 1915, whose complaint was abdominal pain, had always enjoyed good health, and there were no facts of special interest in the past history. The present illness began about one year before with pain across the back at the waistline. She soon developed sharp pains in the abdomen around the navel and radiating to the back. These pains occurred when she was up and about or when she tried to move. She had had one attack of sudden acute pain in the left hypochondrium, associated with vomiting. This required morphin; otherwise she had had no opiates. In addition, the patient complained of pain in the neck and in the right shoulder, increased by moving the arm. She said she was comfortable when lying still, but on trying to move she developed pain through the abdomen and back. She had some sour stomach and much flatulence. Her bowels were constipated and the stools occasionally were light in color. She had had no jaundice.

Examination.—Physical examination was negative, except as follows: The patient was very thin; the systolic blood

4. Chute, D. L.: The Pain of Osteo-Arthritis of the Spine: Its Bearing on the Diagnosis of Urinary Diseases, Boston M. & S. J. **151**: 563, 1904.

5. Smith, H. W.: Hypertrophic Arthritis of the Spine, U. S. Naval M. Bull. **2**: 6, 1907.

6. Dickson and O'Neal: Osteo-Arthritis of the Spine: With a Report of Three Cases Complicating Disease of the Abdominal Viscera, Surg. Gynec. & Obst. **15**: 552, 1912.

7. Allan, W., and Squires, J. W.: Spondylitis Chronica Ankylopoietica, Southern M. J. **11**: 373 (May) 1918.

8. Blaine, E. S.: Renal and Ureteral Stone Symptoms in Spondylitis, Am. J. Roentgenol. **4**: 122 (Jan.) 1917.

pressure was 160 and the diastolic 106; the abdomen was retracted, with thin walls, shadows of the intestines being visible, and the superficial veins distended. An irregular mass was present in the right flank (thought to be either a tumor of the kidney or ascending colon, or possibly a Riedl's lobe of the liver). No note was made of examination of the spine.

The hemoglobin was 65 per cent.; otherwise blood examination was negative. A specimen of catheterized urine showed a heavy cloud of albumin, with an occasional leukocyte and hyaline cast.

Roentgen-ray examination of the urinary tract was negative. The liver was noted to be enlarged or displaced downward, but no mass was shadowed in the right flank.

On surgical consultation, exploration was advised, with the expectation of finding chronic cholecystitis with enlarged right lobe of the liver, or possibly malignant disease. Operation, March 10, 1915, disclosed a grossly diseased appendix that was adherent to a displaced right kidney. The gall-bladder, stomach and pelvic contents were normal.

Course.—After convalescence from her operation the patient experienced a return of pain in the abdomen and back as soon as she attempted to sit up. The original roentgenograms were again studied and disclosed slight evidence of hypertrophic arthritis of the lumbar spine. A second roentgen-ray study was then made of the dorsal spine and disclosed marked hypertrophic spondylitis with almost complete obliteration of the disk between the eleventh and twelfth vertebrae. The orthopedist reported distinct rigidity of the spine, with restricted motion, pain, etc. Because of the patient's advanced age he recommended symptomatic treatment and rest in bed on a firm mattress, rather than any attempt at fixation.

CASE 3.—Clinical Summary: Vague, distressing abdominal pains, characterized by drawing, pulling and burning sensations; no acute pain, but the patient had had a "catch" in the left hip radiating to the lower abdomen; visceral disease apparently excluded; spondylitis not suspected, but found on making roentgen-ray examination of gastro-intestinal tract.

History.—Mrs. W. (8423), aged 59, occupation a housewife, seen, Jan. 10, 1918, whose complaint was pain in the abdomen, had had malaria years before, pleurisy twenty years before, and rather frequent tonsillitis as a younger woman, but no other acute infections. She had had two children, and no miscarriages; the menopause occurred at the age of 43. There was no history of pelvic disturbances.

The patient dated the onset of her present illness to one year before, when she began to suffer with discomfort in the lower abdomen. For the last two years, however, she had had a frequent "catch" in the left hip, running across into the "bowels." The abdominal discomfort had gradually increased, and she described it as "a hard hurting and burning." She said that the intestine seemed to pull and draw, and she felt as if there were a knot in her bowels. She occasionally had pain between the shoulders and down the spine. Her appetite was good and she had no digestive disturbances, except constipation. While her pains bore no relation to meals, yet she had attributed them to indigestion and had restricted her diet; she had become weak and had lost about 35 pounds.

Examination.—The patient was thin and appeared to be weak; she had considerable pyorrhea, but the throat appeared negative; the abdomen was held rather stiffly and showed distinct tenderness in both iliac fossae. The spine was noted to be straight, with tenderness on pressure just to the left of the lumbar spine. No mention was made of the movements of the spine. Physical examination was otherwise negative.

The blood, urine, gastric contents and Wassermann test were negative.

Roentgen-ray studies of the entire gastro-intestinal tract (barium meal and barium enema) were negative. On certain of the plates, however, the lumbar spine showed marked evidence of spondylitis deformans.

Course.—The patient was referred to the orthopedist, who confirmed the diagnosis of spondylitis with root pains. After preliminary rest in bed she was treated with fixation by a plaster cast, with marked relief from her symptoms.

CASE 4.—Clinical Summary: Recurring attacks of pain in lower left abdomen for over seven years; appendectomy and freeing of kink in sigmoid appeared to afford relief for one year; recurrence of symptoms; second study of patient disclosed arthritis of lumbar spine; pain controlled by fixation.

History.—Mr. C. (10050), aged 49, a salesman, seen Aug. 25, 1919, whose complaint was pain in the lower left abdomen, had an attack of very severe "inflammatory rheumatism" at the age of 6 years and one attack of gonorrhea complicated by urethral stricture when 21 years old. There was no history of syphilis or of any other acute infections.

The patient first consulted us in July, 1913, complaining of attacks of pain in the lower left abdomen, together with indigestion. He said that he had had seven attacks of "acute indigestion" in the preceding eighteen months. These were characterized by agonizing pain in the lower abdomen, worse on the left side. The attacks were followed by pronounced abdominal soreness, confining him to bed for two or three days. He had some nausea and vomiting with his acute attacks, attributed to morphin that had been administered. His appetite was poor, and he complained of a frequent knot in his throat, but he had no flatulence or constipation. His attacks were likely to be followed by constant aching pain low down in the left abdomen. He stated that two roentgen-ray examinations of the urinary tract were negative and that the urine was reported to be normal.

Examination.—Complete physical examination (in 1913) was negative, except that the tonsils were enlarged and ragged, there was tenderness on palpation over the sigmoid and also tenderness over the head of the cecum, with pain on pressure which radiated toward the navel. Rectal examination was negative, but the spine was not examined.

The blood, urine and gastric contents were found normal. No further roentgen-ray examinations were made, but exploratory operation was advised. The opinion was expressed that the patient probably had diverticulitis of the sigmoid and possibly appendicitis. He was operated on through a median incision in July, 1913, and the surgeon reported that he removed a diseased appendix and freed a kink in the sigmoid.

Subsequent Course.—The patient returned to us in August, 1919, and stated that he had been relieved of symptoms for about a year following his operation. The pain in the lower left abdomen then returned. For the most part this had been a dull ache, but at times had been sharp and acute. He had also noted pains in the lower left back. These pains were increased on moving the leg, on stooping and on lifting. The pain disappeared when he sat still, but recurred as soon as he stirred about. No other symptoms of interest were noted.

Second Examination.—Complete physical examination was negative except as follows: The tonsils were large and ragged, there was receding of the gums with pyorrhea, and slight tenderness over the sigmoid. The spine showed scoliosis, with convexity to the right in the lumbar region, dorsal bowing with increased lumbar lordosis, tenderness on pressure in the lumbar region, restriction of motion on both flexion and extension, muscular spasm of the erector spinae group, and on lateral bending to the right, pain was produced in the left iliac region. There was no tenderness over the sciatic nerve, but the Kernig sign on the left was positive.

The blood, urine and Wassermann test were negative.

Roentgen-ray examination revealed osteoarthritis of the lumbar vertebrae, but no bony changes about the sacro-iliac articulations. Films of the teeth disclosed no apical infections.

Course.—The patient was referred to an orthopedist, who first put him at complete rest and then applied a plaster jacket. Several months later the patient reported practically complete relief.

CASE 5.—Clinical Summary: Attacks of acute agonizing pain on left side resembling renal colic; frequent attacks of pain beneath the right costal border imitating biliary colic; considerable pain in precordial region; no pain in back; visceral disease apparently excluded; extensive hypertrophic spondylitis present.

History.—Mrs. H. (10246), aged 47, housewife, seen May 23, 1919, whose complaint was pain in the upper right abdomen, had had occasional attacks of tonsillitis in the past, and the tonsils were removed in 1907. She had diphtheria as a child, typhoid fever in 1903, and influenza in October, 1918. She had had no other acute infections and gave no history of arthritis except some "rheumatic pains" in hands and knees. She had had four children and no miscarriages. Hysterectomy and appendectomy were performed in 1913. About fifteen years before the patient had recurring hematuria for six weeks. Nine years before she had a severe attack of apparent kidney colic, but she does not remember on which side. Her past history was otherwise negative.

The patient dated the onset of her present illness to four years before, when she began to have attacks of "acute indigestion," characterized by severe pain in the epigastrium and beneath the right costal border. These required hypodermics for relief, and were thought to be gallbladder colic. She had several such attacks in a year's time. In the last three years she had had no acute attacks, but had had almost constant pain through the lower right chest, at times quite severe in nature. In addition, during the last four years the patient had suffered from attacks of acute agonizing pain in the left lower abdomen, radiating from flank to groin and requiring morphin. She said she had a sore place in the lower left abdomen that was like an electric button. Touching this spot produced pain that radiated all over the left side of the abdomen. The preceding fall the patient weighed 138 pounds; her present weight was 118 pounds. Her history was otherwise unimportant.

Examination.—Complete physical and neurologic examination was negative except as follows: There was some tonsillar tissue present (incomplete operation); the mouth showed considerable dental work with some receding of the gums; there was slight diffuse abdominal tenderness, and definite rigidity of the spine in the dorsal and lumbar regions; there was hyperalgesia over the right lower thorax.

The blood, urine and gastric contents were normal. The Wassermann reaction was negative on blood serum and spinal fluid. The latter showed no increase of globulin, and gave a normal cell count.

Complete roentgen-ray study revealed lipping and hypertrophic bone formation involving the third to the ninth dorsal vertebrae and the third and fourth lumbar vertebrae, with almost complete obliteration of the intervertebral space between the third and fourth lumbar vertebrae. The gallbladder region, the urinary tract and the gastro-intestinal tract (opaque meal) showed no lesions; two alveolar abscesses were found in the mouth.

Course.—The patient was under observation in the hospital from May 24 to Aug. 7, 1919. For seven weeks she was kept absolutely in bed, and during this time was remarkably free from pain. She was then allowed to get up, preparatory to having a plaster cast applied. Shortly after this she was seized with a succession of most agonizing attacks of pain, radiating from the left flank to the groin. Specimens of catheterized urine examined immediately after these attacks showed no pus, blood or albumin.

The patient left the hospital wearing a cast applied by an orthopedist and went to her home in a distant city. Oct. 2, 1919, she reported in person and had a reinforced corset substituted for the cast. She looked well, had gained in weight, and had been entirely relieved of the severe pains in the chest and abdomen.

CASE 6.—Clinical Summary: Vague discomfort in lower abdomen described as pulling; dragging or taut sensations; periods of dull pain in epigastrium together with soreness in left chest and left hypochondrium; these symptoms occurred when the patient was up and about and disappeared when he rested in bed; no acute abdominal pain; no complaint of backache; visceral disease apparently excluded; spondylitis discovered accidentally during roentgen-ray study of gastro-intestinal tract.

History.—Mr. E. (10295), aged 49, farmer, seen June 5, 1919, whose complaint was indigestion, had "rheumatism" in the shoulders and arms four years before which disappeared after the extraction of certain teeth. He had influ-

enza in April, 1919. Otherwise he had had no acute illnesses and his habits were excellent; his wife had had twelve children and one miscarriage.

The patient dated the onset of his present symptoms to January, 1919, when he began to be troubled with a "taut" feeling in the lower abdomen. Shortly after this he had a slight fall, in a sitting posture; he suffered no immediate pain, but some hours later he had pain in the left side of the chest and abdomen, lasting fifteen days. In April he had a severe attack of influenza with fever for nine days and much hiccup. Following this the abdominal pain returned with marked soreness in the epigastrium and a pulling, dragging sensation in the lower abdomen, with occasional burning and flatulence. These symptoms were present every day. They were aggravated by walking about and were relieved by lying down, so that he had spent much of his time in bed. He said he could not bear any jarring of the body, and he had a tendency to hold the abdomen. His appetite was very good, and he had had no nausea, vomiting or sour stomach; but his bowels were constipated. He was about ten pounds below his usual weight of 160. Careful questioning elicited no other symptoms, and he made no complaint of pain in the back.

Examination.—Complete physical examination was negative, except as follows: The teeth were badly worn, with some pyorrhea; the brachial arteries were easily felt; the systolic blood pressure was 124; the diastolic 78; there was diffuse abdominal tenderness; the spine was straight, not tender, and showed stiffness and restricted motion, especially on lateral movements. Rectal examination was negative, and there was no hernia.

Blood, gastric contents, specimen of stool and Wassermann test were negative. The urine showed a cloud of albumin and a few hyaline casts.

Roentgen-ray studies were made of all the teeth, the urinary tract and the gastro-intestinal tract (immediately and six, twenty-four and thirty hours after eating, with screen and plates) and found negative. On two of the plates, however, a good view was obtained of the lower dorsal spine, and this showed a characteristic picture of hypertrophic arthritis.

Course.—This is not known; orthopedic treatment was advised.

CASE 7.—Clinical Summary: Severe pains in right side of abdomen extending from flank to groin and radiating to the leg; recently similar pains had developed on left side; patient had had two abdominal operations to secure relief, with removal of gallbladder and appendix; persistence of symptoms following operation; well marked evidence of spondylitis confirmed by roentgen-ray examination; visceral disease apparently excluded.

History.—Mr. M. (Virginia Hospital), aged 53, seen, Oct. 2, 1919, complained of pain in both sides of the abdomen. The patient's general health had been good. He had had a discharging ear as a child, and had malaria ten years before. There was no history of other acute infection, and he denied all venereal diseases.

The patient dated the onset of his present illness to an attack of pneumonia in May, 1918. On convalescing from this illness he began to suffer with sharp pain in the right flank and groin. This pain radiated to the back and also to the right leg. He described it as a dull, cutting pain, and he had taken a great deal of acetylsalicylic acid, which afforded some relief. At times the radiating pains had stopped, but he always had pain in the right groin. He had no pain on the left side until one month before. At that time lumbar puncture was performed and was followed by persistent pain on the left side similar in character and distribution to that on the right.

In December, 1918, the patient was operated on in a distant city and the gallbladder removed. In February, 1919, he was again operated on and the appendix was taken out. He was told that no definite disease was detected in either organ. About this time all of his teeth were extracted except three. There had been no change in the character of his pain, and the pains were no better and apparently no worse than they were at their onset. He had no definite

digestive disturbances, but was constipated. There were no urinary symptoms, and his history was otherwise unimportant.

Examination.—Complete physical and neurologic examinations were negative except as follows: There was moderate atheroma of the peripheral arteries, the systolic blood pressure was 120, the diastolic, 60; the abdomen showed two operative scars and diffuse tenderness, which was most marked in the lower right quadrant. The reflexes were normal. The spine showed moderate posterior bowing in the dorsal region, and marked rigidity and limitation of motion in the lumbar region.

Examination of the blood was negative except for definite secondary anemia; the urine showed a trace of albumin, a few pus cells and an occasional hyaline cast. The Wassermann reaction on the blood and spinal fluid was negative, and the latter showed no increase of globulin or cell count.

Roentgen-ray examination of the urinary tract was negative for calculus. Screen and plate study of the gastrointestinal tract (immediately and six and twenty-four hours after eating) was negative except for evidence of slight adhesions about the cecum. Plates of the spine revealed marked hypertrophic arthritis of the second to fifth lumbar vertebrae.

Course.—This is not known. The patient was advised to put himself under the care of an orthopedist.

In this series of eighty-seven cases of spondylitis, there were sixty males and twenty-seven females.

AGES BY DECADES

Ages, Years	Cases
From 10 to 19	1
From 20 to 29	4
From 30 to 39	7
From 40 to 49	21
From 50 to 59	25
From 60 to 69	21
From 70 to 79	8

No attempt was made to tabulate the age at onset of the spondylitis, as in many instances this was too uncertain.

As to the etiology of spondylitis, one is certainly correct in assuming that it is identical with that of arthritis in general. The vertebral localization of the arthritic process is no more peculiar than the involvement of other joints of the body. The relation of arthritis to focal infections is so definite in most instances that it would seem correct to suppose that the vast majority of arthritides are due to toxic absorption with special tropism on the part of the joints.

In this series of eighty-seven patients with spondylitis, three cases seemed to be consequent to typhoid fever and four cases appeared to be secondary to a gonorrheal urethritis. Nine of the patients gave a history of preceding acute rheumatic fever, and many of the patients had had one or more attacks of tonsillitis. While it may occur in young adult life, it must be recognized that, as a rule, spondylitis is comparatively rare before the fifth decade of life. Now, it is at the age of 40 years and beyond that focal infections about the teeth become manifest in many persons. In this personal series of spondylitis cases, pronounced alveolar infection was the rule in the majority of patients. The Wassermann test on the blood serum was made in sixty-two cases, and was negative in all these patients except one. In nine obvious cases the spine was not roentgenographed. Of the remaining seventy-eight cases, roentgen-ray examination revealed gross changes in sixty-eight and was reported negative in ten cases. From a consideration of all the possible etiologic factors in this series, I believe one is correct in

assuming that spondylitis may occur in early adult life as the result of certain infections, especially tonsillitis, acute rheumatic fever, gonorrhea and typhoid fever. In most instances, however, spondylitis is a disease of middle and late adult life, and is generally secondary to chronic focal infection about the teeth.

SUMMARY

The incidence of spondylitis, while familiar to the orthopedist, is not generally recognized by the internist and surgeon. The involvement of the nerve-roots in arthritis of the spine may give rise to referred pains not only in the shoulders, hips and extremities, but also in the chest and abdomen. The symptoms referred to the abdomen may simulate visceral disease, and may vary from vague discomfort to paroxysms of acute pain. In this series of eighty-seven cases of spondylitis, abdominal pain occurred in twenty-three patients in whom visceral disease could apparently be excluded as the cause. Errors in diagnosis lead to needless operations on gallbladder, appendix and urinary tract. Spondylitis with referred abdominal pain is much more frequent than tabetic crises. Relief of the nerve-root pains is secured by proper orthopedic treatment plus removal of responsible foci of infection.

ABSTRACT OF DISCUSSION

DR. GUSTAVE ROUSSY, Paris, France: [Dr. Roussy spoke in French. His remarks were translated into English by Dr. Thayer.] Professor Roussy calls attention to the similarity of the condition described by Dr. Vanderhoof, to certain observations made in France, in young men, who on roentgen-ray examination of the spinal cord showed rather extensive lesions, spicules, spines, and stalactite-like lesions of the vertebrae. He calls attention to the difference between two types of spinal arthritis, particularly that studied by Marie, and one beginning more commonly in the shoulder joint and in the hip joint, and resulting in extensive immobilization of the spine. The actual symptoms of immobilization are not striking but the symptoms of pressure come out markedly, without the evidences of grave immobilization. He mentions the circumstance that in the rhizometric spondylitis of Marie, he was rather of the opinion that in many instances the cause was gonorrhea. Three of the cases cited by Dr. Vanderhoof may be of that type, but in many of the cases of more benign spondylitis, Dr. Roussy is uncertain as to the cause. In some cases which they observed infection may have been the cause, but in many instances, there was no evidence that infection was at the root of the malady, and no apparent cause could be found. He calls attention to the similarity between these conditions and the interesting condition described by Madame Dejerine of a hypertrophic arthritis consequent on a severe wound, particularly about the knee and of the spinal cord. He mentioned that in several of those instances extensive ossification was observed in the abductor muscles of the thighs, extending for a very considerable distance down the thigh, a change ascribed by Madame Dejerine to some trophic injury to the cord. Dr. Roussy also called attention to the relative frequency of muscular atrophy associated with spondylitis, and spondylitis due to pressure. He calls attention particularly to a number of instances in which the sternomastoid, the trapezius and other muscles in the cervical region and in the region of the shoulder have been affected, in which, on careful roentgen-ray examination, distinct evidence of the cause has been found in the spondylitis.

SIR HUMPHRY ROLLESTON, London, England: I should like to express my surprised appreciation at the large number of cases which the author recognized. It is, indeed, rather remarkable that this connection has not been noted before, because, as many of you remember, many years ago John Hilton of Guy's, who wrote so much on "referred pain,"

pointed out that caries of the spine might cause abdominal pain, and it would appear that the mechanism in which spondylitis deformans produces symptoms simulating those of disease of the gallbladder, the appendix, etc., must be exactly the same.

DR. DOUGLAS VANDERHOOF, Richmond, Va.: The chief aim of my article was to emphasize the frequency of spondylitis. In recent years I have become especially impressed by the fact that arthritis of the spine is a very common condition. There is no reason why it should not be, when we consider the frequent occurrence of arthritis in general. We are often consulted by patients with peculiar girdle pains, underneath the costal borders. When on the right side, we may think of a diseased gallbladder. When the pain is on the left side, we are not so ready to diagnose a visceral condition. We have been able to demonstrate that certain of these persons have a localized spondylitis of the dorsal spine. One should remember that in making a roentgen-ray examination of the dorsal spine, a special technic must be employed. This paper contains the report of eighty-seven cases of spondylitis seen in the course of the past seven years, including 1919. I am sure that in the first three and a half months of this year I have seen twenty-five or thirty additional cases confirmed by roentgen-ray examination. This is important, because we must recognize the incidence of spondylitis, and we must also realize that some of these persons have referred nerve root pains that simulate visceral disease. Furthermore, we must bring these facts to the attention of our students in the same way as we have been trying to impress on them the importance of testing the pupillary reaction, the knee jerks, etc., to save the tabetic from needless abdominal operations.

SUBCUTANEOUS PHLEBECTASIS OF THE LOWER THORACIC AND UPPER ABDOMINAL REGIONS*

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In the course of the routine examination of patients during the last twenty years I have noted here and there individuals presenting a peculiar dilatation of the cutaneous veins in the diaphragmatic area of the chest and upper abdomen. These veins stand out in an irregular wreath shape form, most often occupying the right diaphragmatic area, but occasionally the splenic area. In some instances the veins extend from one axillary line to the other and down each lateral aspect of the abdomen and across the hypogastrium, thus forming a complete wreath. There are two distinct types to be noted—those in which the dilatation is in the form of telangiectasis and those which are true varices. I have used the name "phlebectasis" to designate this affection.

This condition, in my experience, is vastly more often observed in men than in women; yet it does occur in women.

From the first time I observed this down to the present I have promised myself if an opportunity offered with a sufficient number of cases at my disposal, I would take up the study of this condition and attempt to learn its significance and causal relation. We have been taught to consider this as a sign-complex of embarrassed portal circulation, either from cirrhosis, malignant disease or hepatic abscess. Similar vascular nets occur in different parts of the body, but with nothing like the uniformity of formation or

the extent with which they are seen in the cases under consideration.

From my experience I am able to say that these varices are seen most frequently after the age of 30 and on up to 60 and even beyond. A definite cause of a more or less constant type must be present because of the constancy of type and the uniformity of arrangement and the constancy of location in the diaphragmatic area, and also, as I have pointed out, because of its greater predilection for men than for women.

It was necessary, in the study of this condition, to try to connect up the varices with the proper part of the vascular system, and if possible to determine whether or not the portal venous circulation was always concerned in it. This naturally has been a very difficult point to clear up, as I have never had the opportunity to have a study made at the postmortem table in one of these cases. If this point could be definitely cleared up it would pave the way for an elucidation of this entire condition.

That the condition is seen frequently in connection with cirrhosis of the liver would indicate that we must look to the portal circulation, near or remote, for causative factors in all of those cases in which no disease of the liver is to be demonstrated. This would lead us to search for causes elsewhere in the circulation even so far removed as the heart and the great blood vessels of the chest. We have also considered the action of the diaphragm in diseases of the chest organs in its relation to this condition. And finally a study of the nervous system in these individuals has been made in relation to its bearing on phlebectasis.

When there is any interference with the return of the venous blood in the direction of the heart, whether it is in the neighborhood of the superior vena cava or the inferior vena cava or the portal vein, either within or without the liver, there is an immediate attempt to establish the circulation of the blood by means of varices which, in the case under consideration, appear in the cutaneous circulation. Just why the deeper venous circulation does not entirely take care of the necessary collateral routes is not clear.

In looking for possible causes of the disturbed circulation in these cases we should consider compression of the vena cava resulting from an enlarged aorta from one cause or another, syphiloma of the mediastinum or of the lungs, pleuritic effusions, enlarged bronchial glands, cyst or cancer of the thyroid and even hyperthyroidism, and finally, thrombosis of the vena cava itself or of its branches.

Up to the present time, as I have heretofore remarked, we have not had the benefit of postmortem studies to aid us in determining the causative factors of this condition, which, to those of us who have observed it in individuals not suffering from the grosser forms of venous obstruction in this region, is its most interesting feature.

PATHOLOGY OF THE CONDITION

As I have not given sufficient study to this condition, I am not able myself to go more profoundly into the morbid anatomy of phlebectasis; therefore I shall quote at length from an article published in 1914 by Prof. M. Villaret.¹ Villaret gives the result of many years of study of subcutaneous phlebectasis. He has

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

¹ Villaret, M.: *Paris méd.* 15: 20, 1913-1914.

subdivided these varices according to their relation to the normal venous circulation. He goes on to say:

In order to simplify their readings, we have arranged schematic tracings showing the normal parietal circulation, noting on them the dilated veins observed and the direction of the current. From a large number of these tracings the following conclusions were drawn:

A. The circulation disturbance which affects the superior vena cava. The pathologic collateral circulation may be caused by compression of the superior vena cava, resulting either from aneurysm of the arch of the aorta, especially the first portion, cancer of the mediastinum or of the lung, syphiloma of the mediastinum, tuberculous tracheobronchial glands, old pleurisy, chronic mediastinitis, cancerous goiter, or even exophthalmic goiter. It may also be due to thrombosis of the vena cava or its branches.

1. Ordinary Topography: It seemed to us to be characterized by the following characteristics:

(1) Venous plexus localized over about one third of the chest.

(2) Usual dilatation of the long superficial thoracohypogastric veins of both sides, along their entire course, but especially about the thoracic segment.

(3) Frequent dilatation of the cervico-axillary vein.

(4) Notable absence of dilatation of the superficial median xiphoid vein.

(5) Reduction of supplementary plexuses.

(6) Direction of the venous current from above downward.

(7) Frequent concomitant edema of the face, neck, chest and arms.

2. Localized Forms: When the circulation disturbance is limited to a segment of the domain of the superior vena cava, or when it is quite limited, the superficial phlebectasis may be localized in the upper part of the body on one side, shoulder or arm or middle portion of the chest at the cervico-axillary vein.

3. Mixed Forms: When, on the other hand, venous stasis of the domain of the superior vena cava is accentuated, or is simply persistent, a time frequently comes when the foregoing circulatory type is modified. The partial plexus transgresses on the portal domain or on that of the inferior vena cava, and becomes too complicated for its reading to contribute to a serious etiologic diagnosis.

B. The circulatory disturbance is in the domain of the inferior vena cava.

(1) Localized venous plexus, or at least clearly predominating in the region of the infra-umbilical region of the abdomen.

(2) Habitual dilatation of the middle abdominal subcutaneous veins.

(3) Frequent extension of the abnormal vascularization of the superficial iliac circumflex veins, and to the middle portion of the long tegumentary thoracohypogastric veins.

(4) Decrease of the abundance of the supplementary plexuses, beginning with the inguinal cavity, where they arise, up to the costal regions.

(5) Absence of notable dilatation of the superficial median xiphoid vein.

(6) Direction of the venous current from below upward.

(7) Habitual concomitant edema of the lower limbs and sometimes of the external genitals.

2. Localized Forms: When the casual disturbed circulation is limited to a segment of the domain of the inferior vena

cava, or of limited extent, the superficial phlebectasis may become localized.

3. Mixed Forms: More often, during the second stage, the rapidity of the appearance of which depends on the degree of the obstruction, the preceding superficial vascularization surpasses the primitive limits, in order to encroach on the portal territory. We are then dealing with the cava-portal mixed types, currently observed but not clearly described. They are found in generalized tuberculous peritonitis of the sclerotic form, and of peritoneal cancers.

C. The circulatory disturbance occurring in the domain of the portal vein.

More interesting than the foregoing are the symptomatic collateral circulations of the syndrome of the portal hypertension. They follow diverse hepatic affections of the polyphlebitis opposing the normal current of the blood of the portal vein toward the suprahepatic veins.

The collateral circulation of the thoraco-abdominal wall is very frequent and particularly decided in the course of polyphlebitis of the trunk of the portal vein. They come on suddenly, if the venous obstruction is complete, or slowly and gradually if the thrombosis is simply parietal.

Just as frequent, but much less voluminous and of a more progressive development, are the cutaneous varices following cirrhosis, especially atrophic cirrhosis of Laënnec's type. They may be absent, especially in the case of anascitic cirrhosis.

1. Ordinary Topography:

(1) Beginning of the ectasis in the umbilical region, or, more rarely, in the linea alba, the collateral circulation of portal origin not being able to occur, excepting following dilatation of the venous system of the umbilicus, or of the neighboring perforating branches. Caput medusae constitutes a very decided degree of umbilical varix.

(2) Localized venous plexus, or at least decidedly predominating, in the neighborhood of the supra-umbilical and inferior thoracic regions.

(3) Habitual ectasis of the superficial median xiphoid vein.

(4) Frequent dilatation of the superficial long thoracohypogastric vein.

(5) Possible predominance of ectases in the neighborhood of the hypertrophied liver and spleen.

(6) Absence of noticeable varices in the neighborhood of the abdominal subcutaneous veins.

(7) Direction of the current being from below downward.

(8) Rarity of concomitant edema of the lower limbs and genitals.

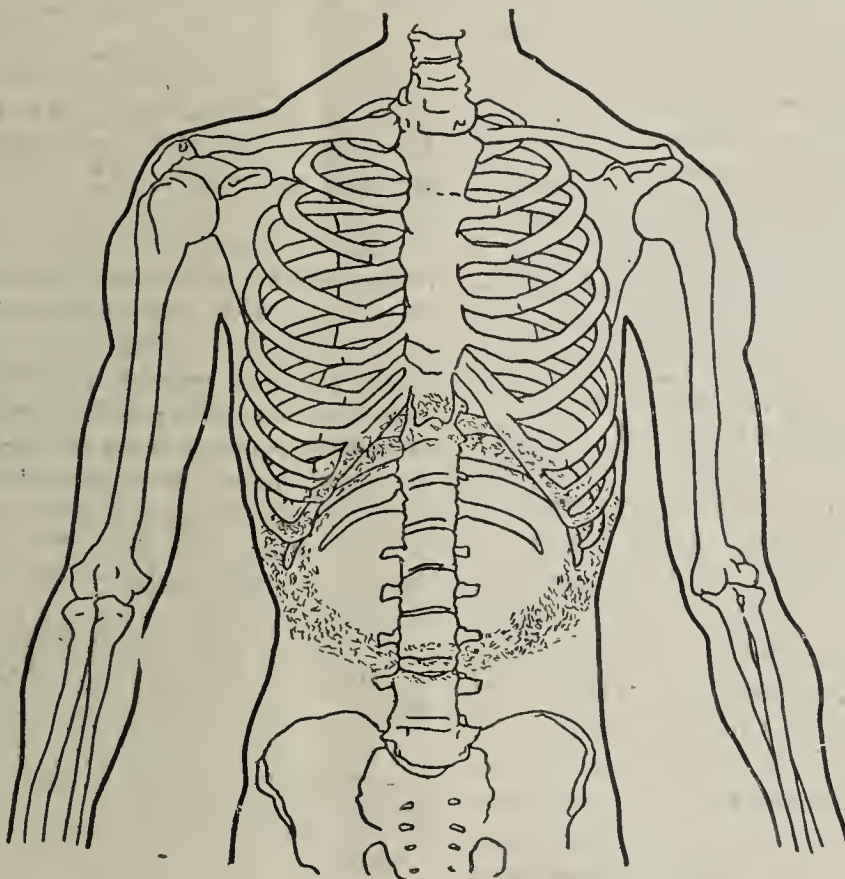
2. Localized Forms: (1) The first variety is formed by the exclusively umbilical and periumbilical varices.

(2) The predominating ectasis of the xiphoid median vein and the perixiphoid plexus. Often it is combined with that of a long thoracohypogastric vein.

(3) The supplementary circulation of portal origin becomes apparent only in the neighborhood of the lower third of the thorax.

3. Mixed Forms: Often subcutaneous phlebectasis of cirrhosis undergoes variations from one period to another of the disease. The most important modification of the plexus of portal origin is when the cava type is added to it.

From the foregoing rather complete summary of the pathology of this condition, the etiology and development of cutaneous phlebectasis in the thoraco-abdominal region is more clearly to be understood.



Wreath of dilated cutaneous vessels in abdominal wall; taken from life.

OBSERVATIONS IN ONE HUNDRED CASES

I will now examine the clinical histories of the 100 cases which have come under my observation during the last five years, these being taken from more than 5,000 patients who were examined by me during that period, and which number certainly warrants some preliminary conclusions to be drawn.

In studying these cases individually I at first took note of every symptom and abnormal sign, however slight; but later, when considering them collectively, all those which clearly bore no relation to this condition were ruled out, and only those signs and symptoms which occurred with sufficient frequency to make it appear that they might have some significance were retained.

A summary of the tabulated findings reveals that out of 100 persons affected with phlebectasis, ninety-five were men and five women. The ages ranged from 24 to 82. Seventy-three were more than 40 years of age. Seventy-six were married and twenty-four were single. Fifty-eight led sedentary lives. Forty-two led active lives. Fifty-eight had prompt capillary circulation; thirty-seven had tardy capillary circulation, and in five the circulation was not noted. Seventy-two had normal radial vessels; sixteen firm, and twelve beady. In seventy the pulse rate was normal; in seventeen rapid, and in thirteen slow. The blood was normal in seventy-seven. Twenty-three were anemic. The blood pressure was normal in forty-seven; seventeen had hypertension; thirty-five had hypotension. The Wassermann reaction was negative in eighty-two, positive in nine, and not made in nine cases. The heart was normal in seventy-eight cases and diseased in twenty-two. The lungs were normal in ninety-one cases and diseased in nine. The liver was normal in seventy-one, and diseased in twenty-nine. The gall-bladder was normal in seventy-five, and diseased in twenty-five. The spleen was normal in ninety-eight, and diseased in two. Bowel action was normal in twenty-eight; sixty-eight were constipated; four had diarrhea. The urine was normal in eighty-seven, and abnormal in thirteen. The gastric juice was normal in forty-seven. Twenty-five had hyperacidity, nineteen, subacidity, and the condition was not stated in nine. The nervous system was normal in seventy-nine, and diseased in twenty-one. The gums were normal in twenty-seven, and diseased in seventy-three. Nutrition was normal in seventy-four, and poor in twenty-six. The roentgen-ray findings were negative in thirty-one, and were not made in twenty-one cases; in forty-eight cases they revealed some pathologic condition in the chest or alimentary tract, or both.

The past history was largely negative so far as this condition goes. Thirty-six had suffered from diseases which might have had some predisposing relation; fifty-four were entirely negative. Seventeen cases either gave a history of syphilis or had a positive Wassermann reaction. Seventy-five used tobacco; twenty-five did not. Eighteen used alcohol; eighty-two did not. Thirty-six suffered from organic diseases affecting the alimentary tract; twenty-nine, from organic diseases affecting exclusively the biliary tract; thirty-one, from organic diseases affecting the circulatory system, and nine from diseases of the respiratory organs.

RECAPITULATION

Phlebectasis of the cutaneous circulation in the lower thoracic and upper abdominal areas occurs

almost exclusively in men after middle life. Of the women affected, two suffered from endocarditis, one from syphilis, one from cholelithiasis, and one from hyperthyroidism.

The conditions which are most frequently associated with phlebectasis of the abdominal walls are constipation, disturbed arterial tension, oral infection, syphilis, heart disease, aortitis, diseases of the gall-bladder, diseases of the liver, and organic disease of the nervous system.

CONCLUSIONS

From this study of phlebectasis of the cutaneous circulation of the lower thoracic and diaphragmatic areas it has been impossible to discover the exact determining cause or causes for the condition. It can be definitely stated, however, that it is an accompaniment of more or less profound pathologic changes of the midbody which without doubt affects most probably the liver, the heart or the great blood vessels.

1624 I Street.

ABSTRACT OF DISCUSSION

DR. J. RUSSELL VERBRYCKE, JR., Washington, D. C.: Until Dr. Morgan called my attention to this peculiar purplish red capillary enlargement I paid little attention to it, regarding it as being accidental. Since then, however, I checked up my own cases, and found that this condition is characteristic. It occurs almost exclusively in males, and, as a rule, in adult life. Ordinarily, the patient is not aware of the presence of the condition. One man told me that he had had it since birth; but it is possible that he was in error. The form and distribution of these lesions is also characteristic. They seem to appear in order, most commonly over the liver, second, over the splenic area, then over both, and least commonly, in a semi-wreath shape, extending across the lower costal region, and down on each side. The cause, I am sure, is not to be found in any disturbance of the general circulation or of the viscera. The capillaries, and most of them are capillaries, are not enlarged enough to indicate any gross obstruction. These capillaries resemble those which run down over the edge of the nose in acne rosacea, and I am inclined to think that the same cause is operative in both instances. No one factor is sufficiently constant to warrant considering it etiologically. Therefore, the exact cause of this lesion still remains to be found.

DR. CHARLES F. HOOVER, Cleveland: This condition was described in the late eighties by the physician of Bismarck. He termed it a corona.

DR. LOUIS G. GENELLA, New Orleans: An Italian physician in Milan twenty-five years ago described this condition and illustrated it exceptionally well. He claimed that these abdominal varicose veins are all malignant, but that it is a very slow form of malignancy. He warned every surgeon, however, that whenever he opened an abdomen and found a marked varicose condition of the broad ligaments, to be assured that his patient would die within probably six or seven years.

DR. FRANK BILLINGS, Chicago: I became interested in this subject more than twenty years ago. Sir William Osler happened to be in my clinic when a very illustrative case of this kind was shown. He said that he had frequently found this condition in children and in certain persons of whose tissues it was characteristic.

I found that it did occur in persons who used alcohol, particularly beer, in excess. These dilated venules are at about the junction of the intercostals, the internal mammary and the epigastric veins. In cases of obstruction of the portal vein such varicosities do not occur at this site, or if they do, they are large vein dilatations. Or if there is obstruction of the superior vena cava, and consequent enlargement of the internal mammary veins, the enlargement is not like this. I cannot

accept Dr. Morgan's conclusions as an explanation of the dilatation of these venules.

DR. WILLIAM S. THAYER, Baltimore: Have you seen cases of like venules extending up the chest, all the way to the clavicle? I know of one instance, an active man, about 56, who has a line of them extending away up to his clavicle, along the costochondral articulation.

DR. WILLIAM G. MORGAN, Washington, D. C.: In a close study of between five and six thousand patients I never met a case in a patient less than 30 years of age. The definiteness of arrangement and location was characteristic.

I have seen one patient who had this condition extending up the chest. That woman had a widespread thickening of the lung on that side, for which no definite cause was assigned.

MEASLES: BRAIN COMPLICATIONS *

A. L. SKOOG, M.D.

KANSAS CITY, MO.

Even in a discussion of any neural complications or sequelae that might occur in a case of measles, we are compelled to admit and even bear in mind that the exact cause of measles still remains unknown. If the disease is studied from the standpoint of the epidemiologist or bacteriologist, the logical conclusion is that the etiology can be attributed only to some organism as yet unseen and uncultivated. Thus many investigators finally conclude that some ultramicroscopic organism is responsible.

We are forced to the conclusion that complications or sequelae, whether involving the brain, spinal cord or peripheral nerves, are uncommon. Yet they are probably of sufficient frequency, and certainly of sufficient gravity, to warrant a serious consideration. Surely we have no right to consider measles a simple and harmless affection.

Relative to the frequency of the neural disorders, I find that the recent literature bearing on this subject is not much more abundant than the ancient. According to Orthalan,¹ palsies following acute fevers were mentioned by Hippocrates and Galen; but the first allusion to measles in this connection was made by Olier in 1772, who referred to this disease as "a cause of acute hydrocephalus." H. B. Allyn² gives James Lucas credit for reporting the first case, in 1790, in the *London Medical Journal*. Of fifty patients seen in one epidemic in 1890 by Espagne,³ one died from a complicating meningitis with convulsions and lethargy. Wilhelm Möller⁴ reports on 537 deaths in an epidemic of 1887, this being a death rate of 3.72 per cent. Among the many complications, convulsions and aphasias were rare. There were five cases of meningitis, three being reported as simple and two as tuberculous meningitis. A few of the textbooks on nervous diseases and works on internal medicine mention in a line or two the brain disorders resulting from measles, but many make no record of the subject.

A study of the literature indicates that the brain complications and sequelae of measles occur much more frequently in children than in adults, and during the convalescence much oftener than during the febrile or exanthem stage. Thus a large percentage of the disorders might be classed preferably as sequelae than as complications.

A large variety of pathologic lesions is reported as involving the central nervous system during and following measles. However, most of the cases found in the literature may be grouped under three or four headings. The meningitis group has a larger number than any other. Thomas⁵ cites cases with meningitis, meningo-encephalitis, hydrocephaly, cerebral thrombosis, cerebrospinal affections, tuberculous meningitis, hemiplegia, apoplexy, hyperemia of the brain, and some others. Jürgensen⁶ would doubt the accuracy of the Thomas reports, questioning often the responsibility of the measles.

I am reporting two cases which may be classed as sequelae to measles, one a cerebellar and the other a meningeal involvement.

REPORT OF CASES

CASE 1.—*A cerebellar sequela.*—*History.*—W. L. W., a girl, aged 4 years, whose mother was well and had had no other pregnancies, and whose family and past history was negative, had always been a robust, healthy child. Teething, walking and talking occurred at the usual age. Measles was first determined by a typical macular eruption, Koplik spots, photophobia and other manifestations, Jan. 30, 1915. Eruption and acute symptoms were practically absent on the seventh day. About the twelfth day and during convalescence the mother noticed that the child did not use her hands quite the same, there being an unsteadiness when playing with toys or performing any voluntary act. The same state was seen soon in the lower extremities so that walking was impaired, and in a very short time she could hardly get about. There was an increased irritability, and some crying. Appetite and stools were normal.

Examination.—On the third day following the first neurologic manifestations, the general nutrition was fair. The temperature and the pulse were normal. There was a slight evidence of a past macular eruption. Cerebration was fairly good. The patient was inclined to be a little sulky or obstinate. The tongue was protruded mesially, but with much coarse tremor. There was a tendency to some nystagmoid movements when looking to the extreme right or left. Other cranial nerve findings were normal. The arms and legs had fair power for individual movements, there being no true palsies. Sensory tests gave normal responses. All deep reflexes were slightly increased, the right equaling the left. The superficial reflexes were normal. The movements in all the extremities were markedly ataxic, the right being the same as the left, but the arms slightly more than the legs. The voluntary movements of the hands were so ataxic, that she could scarcely hold and drink a glass of water. The incoordination in the lower extremities made standing and walking quite difficult. There was no Romberg sign. All the incoordinations were typically cerebellar in type. Cerebellar asynergia was evident. Two days later not much change was to be noted. Ten days later a great improvement was found. Seven weeks after the onset of the neurologic sequel, almost no trace of the clinical signs of involvement of the nervous system was present.

I believe that in the case just cited we have had a pathologic process involving essentially the cerebellum. Possibly other portions of the encephalon were involved in a very minor degree. A complete recovery in a short period indicates that few or no cerebellar neuronal elements were destroyed. There was present an inflammatory process, either the result of an intoxication or directly from some secondary organism or from the hypothetical virus of measles. The termination precluded a necropsy. A spinal puncture was denied.

* Read before the Section on Nervous and Mental Diseases at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Orthalan: Bordeaux thèse, November, 1894.

2. Allyn, H. B.: *Med News* 59: 617, 1891.

3. Espagne: *Montpellier méd.*, Series 2, 15, 1890.

4. Möller, Wilhelm: Würzburg thesis, July, 1896.

5. Thomas, Measles, Neural Complications, in Ziemssen: *Cyclopedia of the Practice of Medicine*, 1875, p. 97.

6. Jürgensen, Measles, in Nothnagel: *Encyclopedia of Practical Medicine*, p. 330.

The only parallel case has been found after searching the literature. A. W. Fairbanks,⁷ under the title "Ataxia Following Measles," cites a case indicating an involvement of the cerebellum during convalescence following measles. However, there were evidences of added involvement of the right motor neural tracts. E. Apert⁸ mentions a form "rougeole ataxo-adyynamique."

CASE 2.—*A meningitis complication.*—History.—L. H., a girl, aged 4 years, whose family and past history was negative, had been a healthy, well developed child. In July, 1919, I consulted with Dr. Frank Neff, who had taken charge of the case a few days previously, and about ten weeks after the attack of measles. There was present with the measles a bronchopneumonia. An otitis media followed. The child did not leave the bed after the measles and the subsequent complications. There was a state of marked helplessness, inability for any coordinated movements, and the child was inarticulate. Dr. Neff in his examination found a negative von Pirquet reaction; a white cell count of 5,400; a negative Wassermann reaction on blood and spinal fluid, and a spinal fluid clear, with no pleocytosis or bacteria.

Examination.—The patient was seen in bed, entirely helpless and speechless. She recognized no one. There was present much psychomotor unrest, with constant purposeless movements of hands and feet. There were no true palsies. There was some response to spinal stimuli. The superficial reflexes were present. The deep reflexes were present in the upper extremities, brisk at the right patellar and Achilles tendons, and feeble at the left. The Babinski and Oppenheim reflexes were questionable. The pupils responded to light and accommodation, but to a diminished degree. The eye grounds were nearly normal. Vision and hearing were undoubtedly present.

A neurologic examination in September indicated much improvement. Walking was possible.

A neurologic examination eight months after the first one indicated much favorable progress. The patient walked and played some and recognized her parents. She was unable to talk. Movements were not perfectly coordinated. Petit mal convulsions had been present during certain periods.

This patient undoubtedly had a meningitis with the other complications following the measles. The type of secondary meningeal infection was never determined. A cerebritis with a particular involvement of the cortex, as so frequently happens with meningitis, was evident. In the way of prognosis, it is reasonably certain that imbecility and possibly epilepsy will always be present.

THREE GROUPS OF CASES

In a concluding examination of the subject of brain complications and sequelae appearing in the course of or following measles, after a critical review of the reported cases and discussions in the literature and an analysis of my own few cases, I would make three groups:

1. The first group would include a certain minor number of cases in which the relationship of the measles would be merely incidental. Some of the cited cases have the onset of the brain troubles as first occurring several weeks to a few months following the eruption. Naturally the bearing of the measles infection to such sequelae can be questioned with justice. Of course, bacteria of various kinds may be harbored for a long period and under certain conditions be released as a local or general infection, when resistance in the host has been lowered by a disease such as measles.

2. The second group would include the secondary infections due to various organisms. The bacteria may be delivered to the central nervous system by the blood stream. However, the mode of invasion is undoubtedly in most instances through the cribriform plate from the nasopharyngeal cavities. This route of infection for *Diplococcus intracellularis-meningitidis* and the acute poliomyelitis virus is now well recognized. A great many more cases of meningitis follow measles, compared with all the other complicating disorders in the central nervous system. The fact that a large majority of the complications have their onset a few days following the disappearance of the eruption or during the early convalescence speaks for the importance of this second group. The interval is in accordance with the incubation period required for most of the organisms for secondary infections.

3. The third small group is a less certain one, owing to the fact that the exact etiology for measles is as yet undetermined. Clinical studies of the disease lead us to believe that the blood stream is teeming with the virus. Accordingly, the vascular channels of the meninges and brain may readily become involved. Certainly, some of the brain complications first manifested during the eruptive stage or the early convalescent period may be caused directly by the unknown virus of measles. Even some of the troubles appearing later in the convalescence may be due to this cause.

The prognosis for these brain disorders certainly depends on the brain tissue changes. If there has been much involvement of the leptomeninges or destruction of many important neurons, complete recovery is uncommon. From reports of good recoveries within from one to four months, I infer that the pathogenesis was mild. It was mild in my case with ataxia, which made a complete recovery in a few weeks; and severe in the meningitis case, in which entire recovery could hardly be anticipated.

The management and treatment of these cases depends on the lesions and the attendant deformities or deficiencies. Prophylaxis is first in importance. No unnecessary exposures to measles should be tolerated. Then the disease should be given careful attention, particularly as to preventing complications. Possibly many of the complications with meningitis reported might have been avoided had some attention been given the upper respiratory passages.

CONCLUSIONS

Cases of measles are sufficiently important to warrant careful consideration. Involvements of the brain in the course of measles, while apparently not as frequent as in other infectious diseases, are occasionally encountered. It is possible that many have not been diagnosed or recorded.

I have seen in my consulting practice and in the clinics of other neurologic consultants, certain mild neurologic or mental cases that were difficult to catalogue. This includes some with the neurasthenic syndrome. They may have originated from troubles in the brain or meninges in the course of or following measles and other exanthems. We can trace some of these neurologic disorders back to early childhood without knowing the exact etiology. I believe that at least a portion of these can be attributed to permanent pathologic residues in the encephalon or its leptomeninges, directly caused by the toxin or virus of measles or from one of the complicating secondary infections.

7. Fairbanks, A. W.: Arch. Pediat. 24:770 (Oct.) 1907.

8. Apert, E.: Traité de médecine et de thérapeutique, Paris, 2, Eruptive Fevers, p. 201, 1915.

ABSTRACT OF DISCUSSION

DR. KARL A. MENNINGER, Topeka, Kan.: This paper furnishes additional evidence that we should not be too hasty in drawing a distinction between mental and physical forces. Until we know what feeble-mindedness really is, it behooves us not to be too arbitrary in regard to cases of feeble-mindedness being born and not made. Kraepelin advanced the theory that there is a faulty specificity in infectious diseases. My own work in influenza has tended to show something to the effect that instead of this sort of thing being faulty specificity, it is rather a quantitative specificity. That is, whereas one physical disease would be accompanied by a single or rare mental complication, others would be accompanied by a great many complications. I do not believe that there is any specific psychosis.

DR. A. L. SKOOG, Kansas City, Mo.: We should be on our guard constantly when making neurologic examinations, especially in these cases in which the etiology is obscure and uncertain, to determine whether the actual cause of the disease may not rest in some long forgotten antecedent disease such as measles.

CONGENITAL FACIAL PARALYSIS

TWO ADDITIONAL CASES *

FRANK R. FRY, A.M., M.D.
ST. LOUIS

Dr. Michael Kasak and I¹ last year presented to the American Neurological Association the notes of a case of congenital facial paralysis of unusual interest. Two additional cases I believe deserve to be recorded, and I am therefore presenting them on this occasion. As a rather extensive bibliography accompanied our paper last year, I am omitting it here.

REPORT OF CASES

CASE 1.—Helen B., aged 1 month, was first brought to the pediatric service of the outpatient department of Washington University School of Medicine, Sept. 9, 1916. On physical examination it was evident that motility was absent in the lower right side of the face, and the upper portions seemed weak. The lower left side also seemed weak. The lower lip was everted to a considerable degree, and the right corner of the mouth was pulled down more than the left when the patient was crying. The upper lip seemed short and thin. The mother noticed the peculiar condition of the face the next day after birth, and stated that the child was not nursing well on account of it.

September 23, the patient was first examined in the neurologic clinic.

October 11, the child was first brought to the ophthalmic clinic with a slight conjunctivitis, which was improved after several visits.

March 23, 1917, the infant appeared in the otologic clinic. The examination revealed an acute otitis media on both sides, and both membranes were punctured. Within three days the acute symptoms had subsided. The patient was finally discharged from the otologic clinic as well, June 1, 1917.

Meantime the patient was seen from time to time by Dr. Michael Kasak and others in the neurologic clinic, until the time of her last recorded visit, Nov. 11, 1918. At this time Dr. Kasak and I examined her together. The child was then 27 months old. In repose, the mouth fell open with an inversion of the lower lip. The upper lip seemed relatively normal. When crying, the right corner of the mouth drew down, making an unpleasant deformity. This was evidently due to the action of the platysma. The left side of the face so gave the impression of weakness, and especially when the

child was crying there was an evident lack of motility in the upper portions of the face as well as in the lower, more so in the right. The mother stated that the eyes did not close completely when the child slept.²

In all other respects, the child seems normal. The family history furnishes no items of importance. The labor was spontaneous and easy, and at full term.

This case was in the service of Dr. Sidney I. Schwab, chief of the neurologic clinic. He saw the patient only once, as he was absent in France in war service, during the time of her subsequent visits to the clinic. The child was 6 weeks old at the time of Dr. Schwab's examination. His impression then was that there was a peripheral paralysis of the seventh nerve only on the right side. He kindly accorded us the privilege of using the clinic's notes in our report. Later on, however, the conditions as we have described them were evident, and they recall certain observations of Vogt:³

In peripheral facial paralysis the whole side of the face is motionless; in central and in most of the bulbar (types) the superior branch retains its movement. In congenital cases the superior branch remains motionless, while the region about the mouth retains either complete or partial motility. When this difference between the upper and lower part of the face is great, it gives a characteristic facial expression: full, protruding lips which are in contrast with the masklike, expressionless, sunken face above. The appearance of the face makes the condition often recognizable at the time of birth, and gives one the impression of an advanced atrophy or aplasia of muscles; also, the skin over the muscles is usually smooth, peculiarly shiny and colorless.

CASE 2.—E. P. L., seen Sept. 2, 1919, had a very evident right facial paralysis, associated with other interesting phenomena, a description of which I shall give after that of the seventh nerve. I am reporting it here as a congenital condition on the grounds of the convincing statements of the patient, a very intelligent, refined and educated young man. Since his earliest recollections his face has had the peculiarities now present. These he recounted in detail. In careful conversations with his mother she had convinced him and others that the condition was congenital. She had further told him that her labor at his birth was normal in all respects. His mission to me was out of the ordinary. The father of his fiancée had asked him to furnish a certificate from a specialist that his facial condition was not hereditary in character. He had gone about this conscientiously and systematically, by first obtaining all the data he could concerning his family history, and then presenting it and himself to me for examination, coming a long distance in order to do so. This history contained nothing bearing on the case.

The right sided paralysis is evident in all portions of the face, but more so in the lower. In going through the usual test movements the corrugations of the right forehead are only slightly less than on the left side. The palpebral fissure is about equal on the two sides, but there is a retracted and fixed appearance of the right lids in contrast to those of the left. The pulling to the left is marked, causing considerable disfigurement. On the right the lips are slightly flabby, the lower lip being somewhat everted. The whole right side of the face has a thinner and more flabby look as compared with the left side, and this is more marked in the lower portion. The condition causes the patient no disability or inconvenience of any kind that he can mention. The function of the left seventh nerve seems to be wholly intact.

In addition to this right facial paralysis there is evidently some defect in both motor fifth nerves, or at least in some

* Read before the Section on Nervous and Mental Diseases at the Twenty-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Fry, F. R., and Kasak, Michael: Congenital Facial Paralysis, *Arch. Neurol. & Psychiat.* 2: 638 (Dec.) 1919.

2. Prior to this, Dr. Kasak had studied the case carefully, and he and I had expected to include the report of it in our paper on congenital facial paralysis presented to the American Neurological Association, June 16, 1919, but owing to an accident with the notes it was omitted. The credit of its preparation belongs to Dr. Kasak.

3. Vogt, H.: *Infantile Beweglichkeitsdefekte im Bereich der Hirnnerven*, *Handbuch der Neurologie* (M. Lewandowsky), Berlin, 1911, p. 270.

of the muscles which they serve. Both temporal muscles are attenuated, giving a sunken appearance to these regions, and the contractions under the finger are feeble compared with a normal subject. The right masseter, compared with the left, has an hypertrophied appearance. This is probably, partly at least, due to attenuated superstructures. The left masseter is deficient in bulk, especially the anterior portion of it. What there is of it, however, contracts forcibly, as does the right. The lower jaw is slightly shifted to the right, and tilted slightly upward on this side, so that the teeth do not articulate regularly. The line of the lower incisors is one-fourth inch to the right of the upper ones. The lateral movements of the mandible, however, seem normal in range and strength, and the same seems to be true of its vertical force, notwithstanding the muscle defects just described. Dr. M. A. Bliss examined the patient with me and called attention to the fact that the platysma function was apparently entirely absent on both sides.

A phenomenon which greatly interested us was a very fine fibrillation, ranging in small waves about the face, almost constantly present in one region or another. This invades more or less all portions of the face below the lower eyelids and seems more pronounced on the right. The masseters appear also to be involved, especially at the acme, as it were, of the larger waves of the movement. The movements are so fine as to be noticeable only when rather close to the patient.

The musculature of all other portions of the body is thoroughly intact. When stripped, he presents a fine symmetrical appearance in this respect. The reflexes in all extremities are normal. He seems well and strong, and is very active. He was through rather intensive service for several months during the war. There is no disturbance in function of any of the ocular muscles, nor of any of the cranial nerves, except those here mentioned.

There are no sensory disturbances anywhere. Taste is not impaired on either side.

In view of these findings it would seem that the defects are nuclear.

TIDAL IRRIGATION OF WOUNDS BY MEANS OF LIQUID-TIGHT CLOSURE

W. H. TAYLOR, M.D.

GUELPH, ONT.

AND

N. B. TAYLOR, F.R.C.S. (EDIN.)

TORONTO, ONT.

FOREWORD BY W. E. GALLIE, F.R.C.S. (ENG.)

TORONTO, ONT.

FOREWORD

The principle of liquid-tight closure was first brought to my attention late in 1917 when the wards of our military hospital were filled with cases of chronic osteomyelitis and chronic septic arthritis. The simplicity and ingenuity of the apparatus devised by the Taylor brothers appealed to us so strongly that we at once gave it a trial, and I have no hesitation in stating that the method of treatment represents a distinct advance. In the osteomyelitis cases it is valuable both before and after the operation, for the purpose of cleaning out the wounds as thoroughly as possible. After operation it was often not necessary to institute any form of treatment, as the wounds healed rapidly by granulation. But in many cases the operation was followed by inflammatory phenomena in the surrounding tissues, and by profuse suppuration. In these cases the Taylor apparatus proved of the utmost value. As soon as the signs of inflammation appeared, the rubber tank was applied and the wound filled with 10 per cent. solution of sodium chlorid. Every two hours the

tank was emptied and negative pressure applied for fifteen minutes. In no instance was it necessary to keep the patient under the treatment* for longer than twenty-four hours.

During 1918 and 1919 more than 200 patients were treated in this way and in all cases with satisfactory results. We have never seen such rapid improvement in suppurating wounds as occurred after the use of the Taylor apparatus.

METHOD OF TREATMENT.

The tidal irrigation of wounds had its origin in France. The improved apparatus and the technic of its use were developed during the latter part of the war, in Canadian hospitals in England. Reports of cases and descriptions of the method and the appliance were published on various occasions under the caption of "liquid-tight closure."¹

The practicability of tidal irrigation is dependent on liquid-tight closure, which renders possible the copious flushing of wounds without wetting the dressings. The wound is covered by a flexible rubber cap whose brim makes contact circumferentially with the neighboring skin. This ring contact with the skin is water-tight; and the fact of its water-tightness is the sine qua non of this system of treatment. Two tubes leave the top of the cap, the inflow connected with an elevated reservoir and the outflow leading to a waste vessel set below the level of the wound. Each tube communicates with the interior of the cap which, in turn, is continuous with the cavity of the wound. From the reservoir to the waste pail, then, we have a single "pipe line," the dilated section of which is comprised by the wound and its covering cap. This cap-covered wound is capable of containing fluid, even under considerable pressure.

Flooding of the wound is effected by closing the outflow and opening the inflow tube. Suction in the wound is brought about by siphonage; this is established by closing the inflow and opening the outflow. Thus positive and negative pressure may be alternated by the manipulation of pinch cocks on these tubes. The rubber cap is seen to distend during positive pressure and to shrink during negative pressure. There is no moisture of the dressings to suggest that the wound beneath is being flooded.

Continuous irrigation is never used. The wound is filled and left filled for a time. It is then emptied and allowed to remain under the influence of negative pressure until refilled from the reservoir. The amount of tension with which the wound is filled is gaged by the height *above* it to which the fluid extends (i. e., by the water level in the reservoir), the outflow tube being closed. The force of suction with which the wound is emptied is determined by the distance *below* it to which the fluid extends (i. e., by the vertical length of the column of fluid depending in the outflow tube), the inflow being closed. So, by altering the height of the reservoir, and by raising or lowering the end of the outflow tube, complete control over each of these phases of pressure is exercised.

Positive pressure should continue until the fluid has permeated every crevice, or until the wound can hold no more. It has been customary to allow half an hour or so for the full charge of positive pressure to invade its cavity. When wounds reek with pus and teem with germs, it would be better to treat them by frequent alternations of pressure during the first few hours. The duration of negative pressure is purely a ques-

1. Taylor, W. H., and Taylor, N. B.: *Lancet* 2: 452 (Sept. 22) 1917; *ibid.* 1: 671 (May 11) 1918; *Canadian Army M. Corps Bull.*, April, 1918; *Canadian M. A. J.* 9: 11 (Jan.) 1919.

tion of reaction, and should vary according to the intensity of the inflammatory manifestations present, lasting twenty minutes or half an hour in chronic cases, and perhaps only for a few seconds, between positive phases, in acute virulent infections. Likewise, the degree of pressure is determined by the nature of the wound. Negative pressure is more prone than positive to result in tissue reactions of undue severity. Such reactions are accompanied by pain, which is our signal to reduce the amount of suction. Frequently, however, this symptom of pain has been disregarded, and, though the reactions which ensued seemed rather severe, the condition of the wound, after the unwonted activity had subsided, was invariably such as to leave the impression that excessive reactions are salutary. Consideration for the patient's comfort is the chief indication for reducing suction. A very angry looking wound might have the treatment begun by using rapid alternations and insignificant degrees of plus and minus pressure, the duration and amount of each to be increased as the swelling subsides, as the wound becomes less sensitive, and as the effluent grows clearer.

No drainage tubes are used, for the simple reason that the wound itself constitutes, actually, the expanded portion of the conduit leading from the irrigator to the waste vessel, and that continuity of fluid pressure extends into every side track of this conduit, that is to say, into all the ramifications of the wound. Occasionally a small wire cage has been used to keep the mouth of the wound open, in cases showing a tendency to valve. The opening should be large enough to admit one or two fingers, and usually it is best to secure this by incision.

During the night, or while the patient is sleeping, neutral pressure may be substituted by allowing a moderate amount of fluid to flow in, and clipping off both tubes while the appliance is neither distended nor collapsed. This is equivalent to a continuous bath. As a fact, so much activity may be induced in the wound during the day that it is a good practice to remove the device altogether at bedtime and apply a dry dressing.

MECHANICS OF LIQUID-TIGHT CLOSURE

Certain anatomic structures exemplify liquid-tight closure—the human lips, the eyelids, the anal sphincter. The hand is capable of maintaining closure by the intelligent application of smooth-lipped vessels to the skin, e. g., the eye bath. That there is nothing inherently impossible in the idea of containing fluid on the skin is shown by the fact that the mouth of a running faucet may be closed by the palm of the hand. Nevertheless, any attempt to bandage or otherwise fasten a vessel to the surface of the body with a view to rendering it water-tight by the direct impingement of its lips on the skin is naturally foredoomed to fail. In the first place, there is not any known system of bandaging or strapping by which the contact pressure may be evenly distributed, as the human fingers are able to distribute it, and, in the second place, there is no means of varying the amount of contact pressure

as the degree of fluid pressure varies. For, even when the pressure of the contained fluid is reduced to zero, or negative pressure substituted, the same injurious amount of contact pressure must continue to impinge on the skin, and to impede the circulation of blood in the part. Previous efforts in this direction have always opposed contact, or mechanical pressure to hydrostatic pressure; whereas, with the device herein described, hydrostatic pressure is opposed by hydrostatic pressure.

The formation of a circumferential valve, operating on the surface round the wound, seemed to offer the best prospect of success in dealing with this problem. Most valves are designed to close a round aperture; but, if an area of skin should be covered by a cap, beneath which it is required to contain a quantity of fluid, the exit to be closed would not then be a round aperture; it would be the circumferential line of impingement of the edge of this cap on the skin. Accordingly, on the interior aspect of this line it was proposed to set a circumferential valve.

A general idea of the form of the device may be conveyed most conveniently by reference to a well known article of apparel to which it bears, superficially, a certain resemblance. Allusion is made to a style of headgear worn by Scotch people—the “tam-o'-shanter.” If the woolen tassel which tops it be

replaced by a couple of tubes; if the headband of the “tam” and its attachment to the loose covering portion be modified slightly, as shown in Figures 1, 2 and 3, and if the whole be composed of rubber, we have, to all intents and purposes, the appliance it is required to describe.

The brim of the device, which is the circumferential valve, having been adjusted to the part so as

to circumscribe the wound, the loose top and overhanging portion of the rubber is covered and supported by a bandage. With the growth of positive pressure, the cap expands between the bandage and the skin, much as the bag of a blood pressure apparatus expands between the cuff and the limb to which it is applied. The greater the fluid pressure within the cap, the more securely the circumferential valve impinges. As the pressure of blood in the aorta closes the semilunar valves against each other, so the pressure of fluid in the cap holds the circumferential valve against the skin. Consequently, the contacting force with which the rubber bears on the surface of the part is never greater than the fluid pressure; yet it is always sufficient, for it varies as the fluid pressure varies. When not required, it is not operative; yet, if a sudden rise in pressure is produced in the cap, say by the patient turning in bed, the emergency is met. Its response is automatic.

The integrity of the closure that may be obtained merely by bandaging the device lightly to the skin, and without the aid of any adhesive substance, is hard to credit by those who have not seen it. Though a positive pressure of 40 mm. of mercury (roughly, a 20-inch column of water) answers every clinical requirement, the appliance has repeatedly withstood

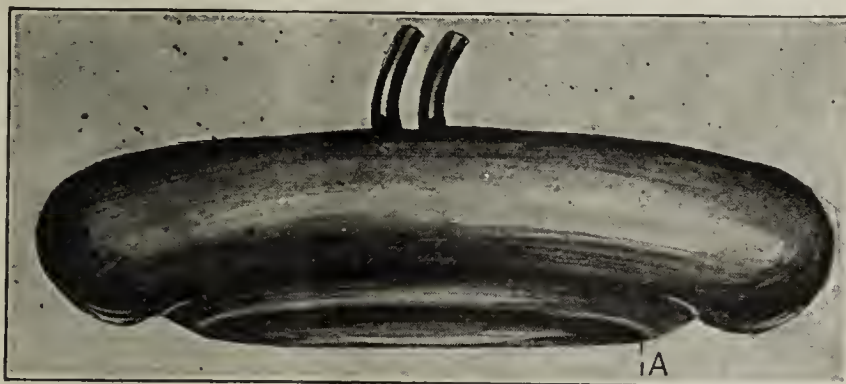


Fig. 1.—Appearance of the appliance, with the inflow and outflow tubes, the loose covering portion of the rubber, and the outer aspect of the circumferential valve (A).

a test pressure of 500 mm. of mercury, and withal, it is so soft and flexible that it may be wrapped around a forearm like a compress.

RATIONALE

Perfect clearance of the wound and all its ramifications is effected by the tidal movement of the irrigating fluid. Contaminated solution is replaced periodically by fresh solution. The fluid discharged into the waste pail during siphonage is a composite mixture of the large content of the cap and the small content of the wound. The purification of the latter advances, therefore, by geometric progression, assuming that an intimate commingling of these bodies of fluid occurs with each successive cycle of the flushing process.

Two chief causes are responsible for the intermixing of the wound secretions with the fluid coming from the reservoir. First we have alternating pressures. Innumerable small recesses of the wound are "milked" of their contents by the compression incident to suction, and filled again with clearer solution during the general engorgement accompanying positive pressure. During the growth of positive pressure, the influx of uncontaminated fluid is facilitated, not only by the distention incident to positive pressure, but also by the reexpansion of the wound cavity to its normal size following the cessation of negative pressure. The second cause is fluctuation, i. e., disturbances of the hydrostatic balance existing between the rubber cap and the walls of the wound. The rubber cap is distensible and collapsible; so also, though in less degree, are the walls of the wound. During positive pressure and when the part is at rest, the common body of fluid, contained both by the cap and by the wound, is in a state of hydrostatic balance as regards their respective walls. Any force (accidental contacts, weight of the bedclothes, etc.) which impinges on the cap disturbs this balance. Similarly, this balance is upset by any muscular movement that affects the conformation of the interior of the wound. Even impulses from the heart may be transmitted. It is not unusual to see the inflow tube pulsating in unison with the femoral artery.

By virtue of these fluctuations and the ebb and flow movement of the irrigating fluid, the walls of the wound cavity are activated. Nor is it difficult to conceive rhythmic changes in posture of the tissue elements, with alternate compression and relaxation of the neighboring lymph spaces, as occurring in response to the fluid's motility. Microbes, pus cells and other débris are teased out and dislodged from their attachments, thrown into the main body of fluid, and attenuated by progressive dilution. It is the remarkable penetrating power of a body of fluid which lies on the wound, as water may be said to lie on a sand and gravel filter through which it percolates, that is responsible for such far-reaching evacuation of its most distant recesses; for the fluid which invades these recesses under the stress of positive pressure

must reappear, under the influence of negative pressure, with washings from the tissues. The tracks along which the fluid finds its way may be tortuous and narrow, may lie in the interstices formed by fragments of broken bone, or between coapted surfaces which it separates. In chronic sinuses such courses may be extremely devious and almost of capillary fineness; yet there is evidence to show that the fluid does find its way along them. No ideas that we have formed as to the penetration of wounds by solutions, when these ideas have resulted from our experience with a syringe or with multiple tubes, are at all applicable to an estimate of the extent to which fluids may be made to penetrate wounds, under hydrostatic pressure. It may be well to illustrate, diagrammatically, the principles of physics involved.

Figure 2 represents a wound covered by a liquid-tight cap, diverticula given off from the main cavity whose terminal loculi contain a little fluid, and channels leading to these loculi with their sides in apposition. The contained fluid is in a state of negative pressure. The wound walls are as completely collapsed as that particular degree of negative pressure is able to collapse them. Fluid no longer flows from the terminal loculi toward the main cavity; that is to say, the negative pressure has become static. (Strictly speaking, however, it is not quite static; for, while negative pressure is operative, the lymph which it aspirates would be flowing toward the center of the wound.) Figure 3 shows the same wound in a state of positive pressure. Here the main cavity and its diverticula contain as much fluid as that particular degree of positive pressure is capable of causing them to contain. The pressure in the terminal loculi is equal to that in the main cavity,

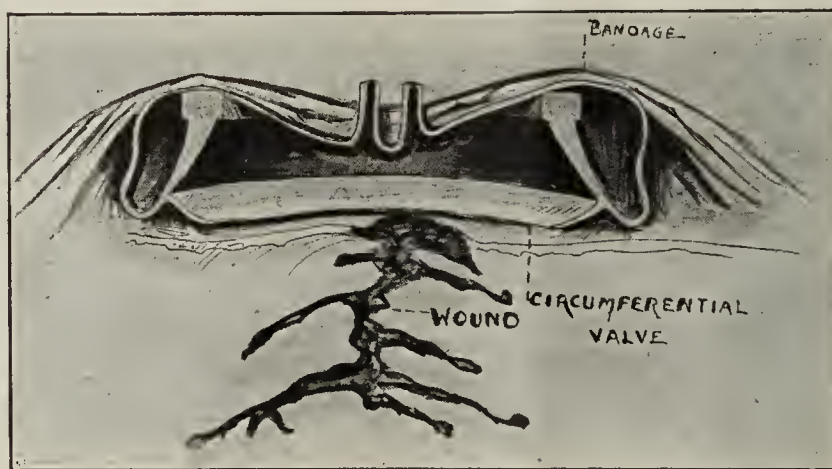


Fig. 2.—Sectional view of a ragged wound covered by the appliance. The rubber cover is sucked down to the skin surface and the wound is shrunk in, by the action of negative pressure.

and fluid no longer flows from the latter to the former, that is to say, the positive pressure has become static. In each instance (Figs. 2 and 3) a state of finality has been reached.

Accordingly, tidal irrigation may be defined as the slow, rhythmic transformation of the wound from the condition shown in Figure 2 to that in Figure 3 and vice versa indefinitely, or until the wound becomes sterile. That the illustrations exaggerate the distensibility of an ordinary wound cavity is neither here nor there. It must be distensible to some extent, or else its walls are rigid. Nor could this transformation have been effected by any evanescent burst of pressure. The inertia of the wound walls is not to be overcome by such momentary pressure as accompanies ordinary instillation or syringing. It required time for the main cavity to become filled; it required more time for sufficient head of pressure to accumulate within the main cavity to force the openings of the diverticula, and then a further expenditure of time for the fluid to find its way through these channels to the terminal loculi. Additional time was required for the pressure in the terminal loculi to equal that in the main cavity; all of which having had time to occur, the pressure is distributed evenly throughout, "seep-

age" of the fluid having reached the farthest recess of the wound. *It is the duration, not the amount of pressure, which is so important.*

Then, the wound having, so to speak, drunk to repletion, it is constrained to disgorge. Evacuation is inaugurated from the periphery toward the center, rapidly at first and progressively more slowly, as the limit to the collapsibility of the wound walls is reached, when static minus pressure becomes established in the wound.

There is also concrete evidence to show that the fluid actually does penetrate channels of a wound which, to all appearances, are closed. Cases were seen in which the two openings of a tunnel wound had not intercommunicated for weeks: each of these openings seemingly the outlet of a separate wound cavity. Attempts with a syringe to force fluid through from one orifice to the other, had been discontinued as futile. Such cases have served admirably to demonstrate the seepage power of fluid when activated by contrasting pressures, for, applying the cap to the larger of these openings and covering the other with gauze, if any potential channel existed between them, the fluid would seek it out and issue eventually from the smaller opening.

This would not always occur immediately. It took three days, in one particular instance, for the fluid to ooze from the mouth of a small sinus on the opposite aspect of the thigh, which was hardly suspected as having any connection with the original wound. Possibly, in this case, the communicating channel was blocked by thickened pus, and its reestablishment followed the progressive evacuation of this material occasioned by successive onslaughts of the tidal wave. It is rather more probable,

however, that tumefaction of the channel was the cause of the obstruction, and that it became permeable to fluid as the reduction of this tumefaction proceeded. Reduction of swelling, as will be seen, is a constant accompaniment of this form of irrigation. In this case it was not until the thigh, which was quite large, had become reduced in size, that the small sinus began to weep. Positive pressure, of only a few minutes' duration, more often is successful in reestablishing permeability, in which case the explanation is referable solely to the laws of hydrostatics as exemplified in Figures 2 and 3. That *blind* diverticula of a ramifying wound are invaded by the irrigation fluid may be inferred from the fact that fluid was seen issuing from these seemingly occluded channels which terminated on the surface.

HYPEREMIA AND LYMPHORRHEA PRODUCED BY NEGATIVE PRESSURE

Beneficent activities are inaugurated, in the tissues surrounding the wound, which transcend in importance even the thorough cleansing of its cavity. The salutary effect of increased blood supply, within certain limits, and the value of lymph as a sterilizing agent, are so

universally acknowledged as to constitute surgical maxims. A "cup" applied to the skin produces hyperemia and the same thing, on an abraded surface, causes a flow of lymph. It seems rather remarkable that so comparatively little use has been made of this knowledge in the treatment of wounds.

It is not as though the technic of applying negative pressure presented difficulties comparable with those encountered in devising means to contain fluid in a wound under positive pressure. A suitable rubber mat applied to the wound area and attached to an air exhaust would have served the purpose. Yet suction was not used. However, suction due to the rarefaction of air would need to be very powerfully exerted for a considerable period in order to draw thickened pus from a distance and, at the same time, to leave an overplus of suction to influence the flow of blood and lymph in tributary regions of the wound. Hence, negative pressure, by the abstraction of air, would be confined chiefly to the surface; also, it would interfere seriously with the proper irrigation of the wound cavity, and would be hard to regulate.

On the other hand, negative pressure transmitted through the agency of a retreating column of fluid,

which is the reflux following positive pressure—this fluid being freely miscible with the wound secretions and capable of attenuating these to the consistency of water—exerts practically the same pull at the end of a long diverticulum as at the mouth of the wound. Consequently, it would not need to be more powerfully exerted at the mouth of the wound than would be required anywhere throughout its cavity. This, and the ease with which hydraulic suction can be regulated to the fraction of a degree, renders

it an instrument of precision, as compared with the method of Bier.

THE EMPLOYMENT OF HEAT

The copious flushing of the wound, rendered possible by our being able to contain the fluid, secures the advantage of temperature control. Each appliance holds, according to size, from 8 to 20 ounces of fluid. This great mass of warm liquid lies over the mouth of the wound and is continuous with its cavity. Its temperature may be raised each time that a fresh supply is run in from the reservoir. This is equivalent virtually to a fomentation applied to the heart of the wound, a fomentation, moreover, that may be renewed without disturbing the dressings. To quote from Adami's monograph on inflammation, "poulticing, the employment of hot compresses, etc., are all means which have been employed for generations to 'bring an inflammation to a head'—to promote an adequate reaction."

THE FLUID USED

Antiseptics in conjunction with tidal irrigation are not contraindicated; indeed, the business of conveying the lethal dose to the haunts where microbes lurk

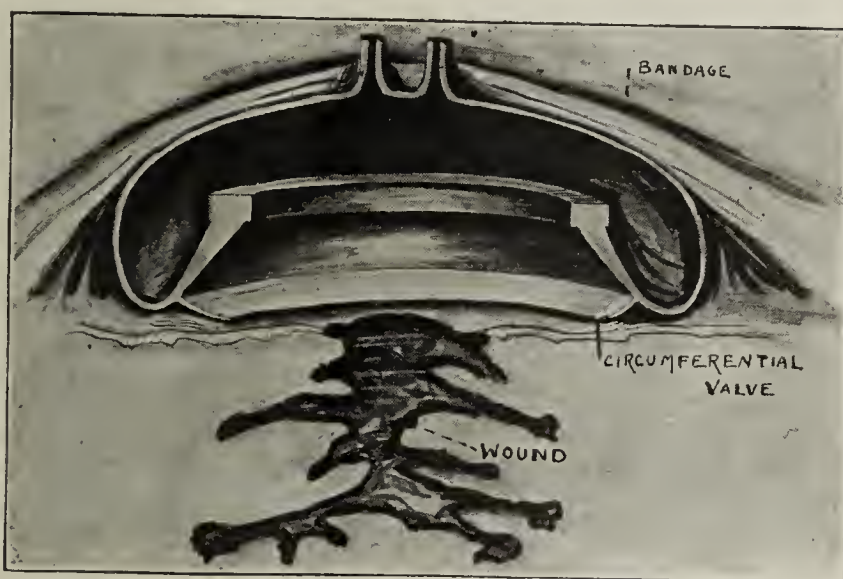


Fig. 3.—Sectional view of the same wound shown in Figure 2, in which the wound cavity is dilated and the appliance distended, by the action of positive pressure.

would be furthered by this mode of administering it. Nevertheless, and while admitting everything that has been said in behalf of antiseptics, it is to be pointed out that no valid reason for using them exists if germs can be "milked" from the tissues by mechanical means. Such being the case, the only question involved in the choice between an antiseptic and a simple fluid is whether the bacteria to be ejected from the wound shall be cast forth as dead or as living organisms. Any bacterial flora that can be reached by a germicide can be evacuated by the mechanical activity of a simple fluid, or destroyed by the reversal of the lymph flow and by the increased output of phagocytes which its activity induces in the wounded tissues. Furthermore, germs which no antiseptic, as ordinarily employed, can be made to reach at all are attracted to the surface by alternating pressures.

In the early days we used surgical solution of chlorinated soda (Dakin's solution). As is well known, this solution has a tendency to irritate the skin. This need not act as a deterrent if the area covered by the appliance is not extensive. By using a small sized appliance, covering little more than the mouth of the wound cavity proper, dermatitis may be prevented; and to do so is quite feasible, since the device functions well on granulation tissue. Or, Dakin's solution may be used so long as the skin is not affected by it, and hypertonic saline solution substituted if dermatitis supervenes. These suggestions are for those who, naturally enough, may hesitate to discard a well authenticated antiseptic for a measure which they have not tried. One of the anilin dyes might be found more suitable to use with this appliance. When the wound is lined with the fibrinous products of inflammation, preliminary floodings with hydrogen peroxid are advantageous.

The fluid of our preference is a 10 per cent. solution of sodium chlorid. It is cheap; it does not waterlog the tissues; it is nonirritating to the skin, and it may be used at a properly elevated temperature. Tidal irrigation with this solution has furnished the most phenomenal results.

ANALYSIS OF THE CLINICAL RESULTS

We and others have treated more than 400 cases by this method, and the results obtained have exceeded even the expectations which the logic of the procedure seemed to justify. A good proportion of the cases treated were recently infected wounds. These had not run previously such a protracted course nor exhausted the resources of other methods, as did the chronic cases. Since, with recent wounds, the natural power to resist infection is an unknown quantity, whatever happens, even though the treatment has been the determining factor, is open to the imputation of being due to natural causes; or, at least, of not being more remarkable than might have been the case if other means had been used. For this reason we would draw attention to an analysis of the chronic cases.

The general characteristics of these indolent old wounds which, at the time tidal irrigation was begun,

had earned the reputation of being incorrigible, may be thus tabulated, in a composite way:

1. The duration of invalidism, due to wound infection, varied from three to sixteen months. The average was six months. No improvement had been noted for long periods of time, as gathered from the records and the patient's statements.

2. The condition of these wounds immediately prior to the commencement of treatment was characterized by marked induration, tenderness and swelling, for a radius of several inches around an indolent wound opening, from which much pus exuded. The swelling usually involved the whole circumference of the limb. The granulations were grayish yellow. Fracture was a complication in many instances, and the condition was often associated with aching pain. In some of the cases there was a moderate amount of fever. In one instance the temperature was 103.5 and dropped to normal in eight hours. The bacterial count was on the whole, low, averaging about ten to a field. These patients as a class were thin, of a poor color, irritable and depressed. The changes in the clinical picture which ensued after treatment was begun were truly phenomenal. It was not unusual for a wound from which there had been a persistent discharge for eight or twelve months to become sterile in less than a week, and the cavity to fill with lymph and heal in two or three weeks.

Though nearly all these patients had been operated on a number of times, in other hospitals, for the removal of foreign bodies, to promote drainage or to facilitate the insertion of tubes for instillation into various side tracks of the wound, no operative measures preceded tidal irrigation save, in a few instances, widening of the outlet. The cap was applied and the irrigation started, usually without any preparation of the wound whatever. The sequence of events was fairly constant:

(a) Within twenty-four hours, in every case, there was a noticeable reduction of induration, tenderness and swelling. The wound cavity was found to contain irrigating fluid with an admixture of pus cells.

(b) On the following day the swelling had disappeared almost entirely. The surrounding tissues, which before were brawny, were now soft and pliable, and

tenderness was absent or greatly reduced. The immediate neighborhood of the wound had lost its dusky appearance. The granulations appeared red and succulent. The wound cavity contained clear irrigating fluid with an admixture of lymph, and it was no longer possible to express pus from any of its side tracks. The waste pail contained large quantities of pus. There might or might not be a sharp rise in temperature. A noteworthy phenomenon at this time was an enormous increase in the bacterial count, which had jumped from three or five per field to 100 or 200 per field.

(c) After the expiration of another twenty-four hours the swelling and induration had definitely vanished. It needs to be seen to be appreciated, this softening and dwindling of a "stove-pipe" appearing limb, almost to its normal size and texture. The wound at this time bore but slight resemblance to the wound on which treatment had been begun three days before. The bacterial count was still high. There was still a good deal of pus in the waste pail, often more than on the previous day. The temperature, if any, had dropped to normal, and the patient himself felt better than he had felt for weeks.

(d) Somewhere between the third and sixth day there was a sharp drop in the bacteriologic curve, down to one or two or none in ten fields. The excretion of pus also was reduced, the fluid in the waste pail being practically clear. Yet this fluid showed, when treated with nitric acid, a large proportion of albumin. The volume of albumin was much



Fig. 4.—Under, or "skin" surface of the appliance.

greater than may be accounted for by the osmotic power of the hypertonic sodium chlorid solution; indeed, it is not appreciably lessened in amount if physiologic sodium chlorid solution is used, showing that the exudation of lymph is due, largely, to the incidence of negative pressure.

(c) On removal of the appliance about the sixth or seventh day, the surface of the wound was clean and the surrounding tissues were everywhere pliable. After the application of gauze packs for several hours, clear, straw-colored lymph was found staining the dressings and oozing from the mouth of the wound. Frequently the wound was filled with blood. The bacterial count was usually nil in ten fields. The wound, from then on, made rapid strides toward repair.

The foregoing is a fair account of what happens with wounds of the most inveterate type. Of the events recorded, two in particular are deserving of the closest scrutiny. One of these is the greatly augmented discharge of pus cells during the initial stages of the irrigation. Better drainage of the wound does not satisfactorily explain this increment, since the wound proper is capable of holding only a few drams of pus, and this small quantity is washed away during the first few hours of the irrigation. Moreover, the quantity discharged is out of all proportion to the amount, either that the wound can hold, or that its lining granulations would normally excrete within the time. It is believed that the increment is due, both to the increased exudation of leukocytes from the tissue spaces and to their accelerated transmigration from the capillary vessels, in response to the hyperemia produced by negative pressure.

Analogous to this forced excretion of pus, and even more significant, is the abrupt rise and subsequent drop to zero of the bacteriologic curve. Is the rise due only to increased excretion, or is it evidence of stimulated microbial growth? The concomitant amelioration of the clinical signs, and the reduction of swelling, proceeding hand in hand with the copious discharge of inflammatory products, point unmistakably to the conclusion that it is a "catharsis" which occurs, of lymph, pus cells and bacteria, from infected tissues. This view is supported also by the fact that the elevation of the bacterial count was always higher, and the increment of pus cells always greater, in old-standing cases with widespread induration and swelling. Recent wounds frequently showed little or no increase.

The thoroughness with which the neighboring tissues of a wound are "washed" is indicated by the aseptic manner in which Thiersch's skin grafts "take" on a foul granulating surface which first has been cleansed, for two or three days, by tidal irrigation, in which the negative phase has been emphasized to the point of securing a definite reaction. If a portion of such an area is thus treated, and the remaining portion is treated in the customary way, any antiseptic whatsoever being used, and if Thiersch's grafts are then applied to each portion, a marked difference will be observed in the behavior of these two sets of grafts. This test is commended to any one in doubt as to the relative merits of the two procedures.

CONCLUSION

To what extent may we attribute to a plan of treating wounds the clinical results which follow its employment? Experiments verified by "controls" are unequivocally conclusive; yet, for reasons that are obvious, it is rarely possible to apply this method of verification to the treatment of wounds. "Post hoc propter hoc" is notoriously fallacious, since most wounds tend naturally to heal. Nevertheless, if the previous history of a wound infection has been long and tedious, the clinical manifestations of disease overt and palpable, and the condition most intractable; then, if the subsequent history is inaugurated *abruptly*, the clinical signs ameliorate rapidly and the wound, thereafter, makes for repair, and if this right-about-face transformation coincides invariably, in point of time, with the institution of a certain treatment, surely it may be said that the state of the wound prior to the treatment serves well enough for a control to the effect which follows it. In the judgment of those of our surgical staff who had occasion to watch these cases from day to day, the results herein described were extraordinary, and were considered as the outcome of the tidal movement imparted to the irrigating fluid.

Rather would it have seemed strange had the power to control the pressure of the irrigating fluid *not* modified, to some extent, the course of wound infections, considering what a physiologic factor this one of pressure is. In respect to any therapeutic measure capable, as this is, of altering profoundly the physical conditions under which the tissues live, it would not have lacked significance had 400 wounds been treated, with uniformly good results. The tissues were activated to a degree which might have given (and as a fact

did give) rise to apprehension. It seemed as though such interference must have some effect, and there were reasons to foresee that the outcome would be gratifying; for though the procedure in question is radical in the sense that its component elements had not been employed in combination before, it is the reverse of radical in that each item of its rationale is the expression of a surgical maxim. Thorough evacuation, drainage, scrupulous cleansing of the wound cavity and its lining granulations, hyperemia, lymphorrhea, warmth, etc., are all old friends whose familiar features need not seem the less familiar for being associated together.

It is not possible, in the scope of the present paper, to give minute instructions for the management of every contingency to be encountered in the different types of cases, nor is it altogether necessary. Wounds may be irrigated in this tidal manner with less of troublesome detail than any other method of wound treatment demands. This is true of any wound situated on an accessible surface of the body which may be conveniently covered by the appliance. Yet, owing to inattention to the laws of physics, or to the surgeon's undue apprehension in the use of an unfamiliar method, and sometimes through the indifference of



Fig. 5.—Appliance being bandaged to a wounded thigh.

a nurse or the whim of a nervous patient, we have seen the treatment hurriedly discontinued, the surgeon nothing doubting that he had given it a trial. Were tidal irrigation as difficult as, actually, it is easy to accomplish, it would still repay the effort made to understand it, and the use of one's constructive faculty now stands, the basic fact is established, of a simple to improve it and to simplify its technic. As the mat- and convenient means of containing fluid in a wound. An appreciation of what this fact implies, and the exercise of no more thought and enterprise than most surgical maneuvers impose on the surgeon, will be rewarded by results such as cannot be obtained in any other way.

SUMMARY

1. The irrigating cap herein described is designed to make liquid-tight contact with the skin, circumferentially about a wound, without the aid of any adhesive substance whatever. The mechanical expedient employed, to this end, is used here for the first time in surgery.

2. The cap permits fluid to be contained in a wound without leakage, even under considerable pressure, and without constriction of the part or obstruction to its blood supply.

3. From this a system of wound treatment has resulted whose rationale conforms to the established principles of surgery.

4. This treatment comprises the repeated filling and emptying of the wound and the alternate use of positive and negative pressure, the duration of each of these phases of pressure being sufficiently prolonged to insure its maximum effect on the tissues.

5. The ebb and flow movement of the fluid is shown to have a marked cleansing action as regards the wound secretions, the effect of negative pressure being to induce hyperemia and lymphorrhea, to increase phagocytosis, and to cause a forced output of bacteria from the wound.

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CHRONIC LEUKORRHEA: ITS PATHOLOGY AND TREATMENT *

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Efforts to advance our knowledge of chronic leukorrhea have thus far yielded only moderate success. The underlying pathology is not thoroughly understood, and treatment has been distinctly unsatisfactory. For these reasons I have made a prolonged study of the subject in an endeavor to learn more about the problems involved.

ETIOLOGY OF CHRONIC LEUKORRHEA

The gonococcus is the primary cause of most chronic purulent discharges of women who have not borne children. This organism cannot often be isolated from chronic cases, but none the less it causes the original discharge, decreases the resistance of the tis-

sues, and thus prepares the soil for mildly virulent bacteria which thereafter stubbornly resist our efforts to dislodge them.

In women who have borne children, resistance is decreased through lacerations, relaxation of supports, continued passive congestion and erosions. Here again, bacteria of low virulence find a foothold and produce chronic discharges which are cured with the utmost difficulty.

An especially important type of chronic leukorrhea, and one which is very difficult to cure, is that associated with pelvic cellulitis. Whether the cellulitis persists because of a focus lodged deep in the cervical glands, or the cervix becomes reinfected from the cellular tissues, remains in my mind a somewhat open question. In any event, the dis-

charge tends to recur even after apparent recovery.

Less important and less frequent cases, neither the result of gonococcal infection nor consequent to pregnancy, are "nonspecific" venereal infections and persistent mild infections due to abnormally low resistance.

Bacteria.—The bacterial flora of chronic cases is fairly uniform.¹ Anaerobes, especially gram-negative bacilli, are most numerous. At least four types of gram-negative diplococci are encountered. Most

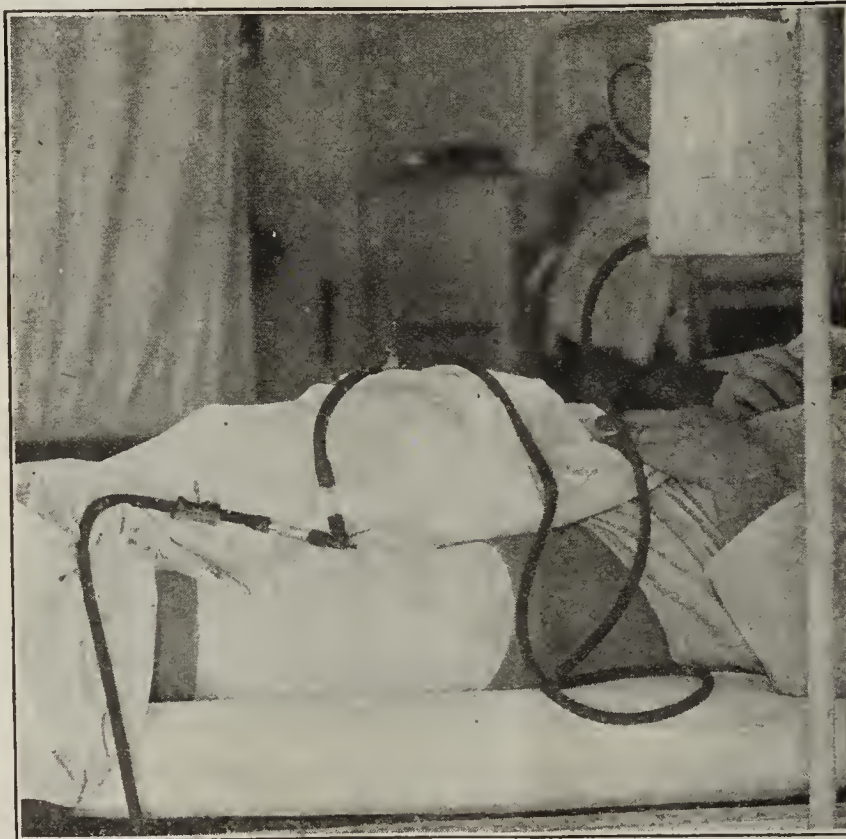


Fig. 6.—Apparatus applied, the inflow tube connected with an irrigating can held by a stand beside the bed, and the outflow tube joined to a length of rubber tubing leading to a waste pail below. The appliance is completely covered by the bandage. The patient is able to conduct the irrigation himself. By opening the pinch cock on the inflow tube and closing the one on the outflow, the wound is filled. By reversing the procedure the fluid is siphoned off and negative pressure maintained by the weight of the column of fluid which hangs in the outflow tube.

Ill Health and Ignorance.—Much of the ill health in the homes of people is due to ignorance. From that ignorance often emerge the beginnings of disease. It is at such times that the first fatal step is taken, and a symptom regarded as trivial, too trivial, indeed, to require medical aid, is dealt with by a much advertised "cure all" patent medicine obtained from a chemist. Deceived by a blatant advertisement, which preys on ignorance, the home treatment is pursued until it is proved worthless during which valuable time is lost, followed by the development of more manifest disease symptoms.—*Medical Press and Circular* 109:66 (Jan. 28) 1920.

* From the pathologic laboratory and gynecologic service of St. Luke's Hospital.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Döderlein: Das Scheidensekret und seine Bedeutung für das Puerperalfieber, Leipzig, 1892. Menge and Krönig: Bakteriologie des weiblichen Genitalkanals, Leipzig, 1897. Curtis, A. H.: On the Etiology and Bacteriology of Leukorrhea, Surg., Gynec. & Obst., March, 1914, p. 299.

important of all are gram-positive diplococci; these may be anaerobic or aerobic, and are almost always found in those cases which are subject to recurrent symptoms of acute inflammation.

PATHOLOGY OF CHRONIC LEUKORRHEA

Pathology of the Cervix.—Some years ago, I became convinced that hypertrophic infected cervical glands are a most important factor in chronic leukorrhea. Study of curetted material from the present series of cases confirms this view. Distinct evidence of chronic cervical infection was obtained from twenty-one out of twenty-two patients with chronic leukorrhea (Fig. 1). Gland hypertrophy was the rule; small areas of scar formation were frequent; in addition to plasma cells and other round cells, the microscope usually revealed abundant polymorphonuclear leukocytes.

Only within the last fifteen months has the frequency of two other cervical lesions been recognized: endocervical granulations and strictures. Their significance is perhaps comparable with granulations and strictures of the male urethra.

Granulations are felt to grate on the dilator as it is passed into the cervix. They may be found anywhere along the canal.

Strictures are most often encountered midway between the external and internal os or at a higher level. Some dilate with ease; others are firmly resistant. Differentiation of strictures from normal arbor vitae occasionally causes difficulty.

The Relation of the Endometrium to Chronic Leukorrhea.—In a previous bacteriologic and histologic study² of the endometrium from 118 uteri removed to remedy various pathologic conditions, I found that chronic infection of the uterus above the level of the cervix is infrequent. Patients whose endometria yielded bacteria almost all had salpingitis with equally good growth. It was concluded that chronic endometritis, independent of infection of adjacent pelvic tissues, almost never occurs as a clinical entity.

The present study of chronic leukorrhea indicates that endometritis may occasionally accompany chronic cervicitis (Fig. 2). For the purpose of comparative histologic study, scrapings were obtained from the fundus at the time of diagnostic curettage of the cervix. As previously mentioned, chronic cervicitis, often of considerable severity, was present in all except one of twenty-two curetted patients. Six revealed evidence of chronic endometritis, but in no instance was the inflammation severe.

It is scarcely necessary to mention that the vaginal portion of the cervix also contributes to leukorrhea when glandular erosions develop on it. Occasionally erosions become implanted throughout the vagina, in which case the vaginal walls produce a discharge.

Skene's ducts, the urethra, and Bartholin's ducts and glands are often considerable factors in the persistence of leukorrhea. This is notably true of infection of Skene's ducts.

TREATMENT

Only chronic leukorrhea is under consideration. Most acute discharges tend to improve spontaneously. Remedies too numerous to discuss have been extensively used. These include curettage, treatment of the uterine cavity, applications to the lower cervix, vaginal douches, administration of glycerin or other hygroscopic solutions, vaginal tampons, various kinds of powders, and vaccines. We have tried them all, with very indifferent results.

According to my interpretation, most popular procedures are not sufficiently directed toward the pathology of leukorrhea. Deep cauterization of the cervix, as employed by Hunner,³ is theoretically of value, and is said to be helpful in selected cases.

In the series herewith reported, the patients have been subjected to a thorough pelvic examination, the reaction of the discharge tested, smears obtained from the cervix and vagina, and a set of cultures made.

Gross pathologic lesions are corrected surgically.

The usual hygienic measures are instituted.

Treatment of the Cervix.—The most usual and most difficult focus to eradicate lies in the endocervix. Unless the

discharge is essentially of vulvovaginal origin, radium is advocated in all severe cases of persistent chronic leukorrhea. After thorough dilatation, the cervix and fundus may be curetted for diagnostic purposes.

Fifty mg. of radium, preferably two 25 mg. tubes in tandem, are introduced high into the cervix, held by a suture passed through the external os, and left for several hours. One or more subsequent radium treatments of shorter duration may be required. It is thought best to plan on an interval of from ten to twelve weeks' duration between applications.

Each radium tube employed in the treatment of this series of cases has been screened by a double gold capsule with a total thickness of 2 mm. The capsule in turn has been incased in dental rubber. At present the screen has been reduced to a single rubber covered

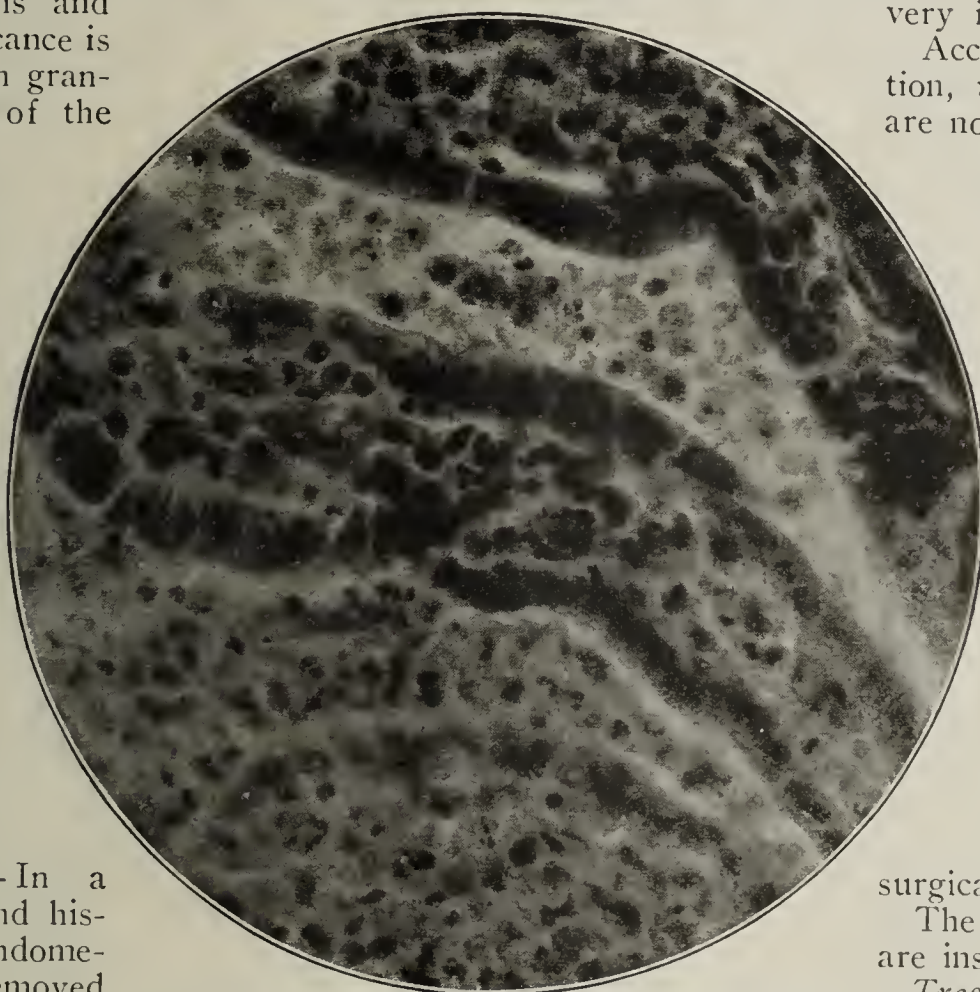


Fig. 1.—Chronic cervical infection; typical severe endocervicitis in a case with leukorrhea of two years' standing; $\times 450$.

2. Curtis, A. H.: A Combined Bacteriological and Histological Study of the Endometrium in Health and in Disease, Surg., Gynec. & Obst. **26**: 178 (Feb.) 1918.

3. Hunner, G. L.: The Treatment of Leukorrhea with the Actual Cautery, J. A. M. A. **46**: 191 (Jan. 20) 1906.

gold capsule of 1 mm. The duration of application has been correspondingly decreased.

Examination of cervical tissues after successful radium treatment (Fig. 3) reveals atrophy of the glands, a relative increase in fibrous tissue, and the disappearance of any microscopic evidences of infection.

Skene's ducts harbor the next most important focus. At the time of radium application, or under procain anesthesia, the blunt end of a needle, held in forceps, is threaded into the duct lumen, and its end is forced through the base of the duct so that the needle head protrudes into the vagina. The duct is split with a knife and the tract fulgurated.

Bartholin duct infection may be eradicated by similar treatment. Infected Bartholin glands rarely require excision.

The urethra is occasionally treated by dilatation, aided by instillations of weak silver nitrate solution.

leukorrhea in one instance. A highly irritating chronic discharge was due, in one patient, to repeated douches with cold tap water.

Of five patients with leukorrhea of uncertain etiology, two had been uncomfortable for years because of profuse, creamy discharge. One of these suffered from chronic pelvic cellulitis and femoral thrombophlebitis; the other had cellulitis without evident tubal involvement.

Fifteen of this group of patients had cervical erosions, two of which were slight; seven of moderate size, and six large. Two were excised; all the others disappeared under treatment.

Cervical granulations or strictures were encountered nine times. Obstruction from strictures was of high grade in six cases.

Radium treatment was given to twenty of this group; twelve received one treatment; six, two treatments; one, three treatments, and one, four treatments. I wish particularly to mention one patient whom we had treated for ten years without relief. Fulguration of Skene's ducts and one short radium treatment resulted in an absolute cure within six weeks.

STUDY OF MATERIAL

In 1914, there was reported an intensive bacteriologic study of eighty-five cases of chronic leukorrhea. At the same time the results of various kinds of treatment were carefully observed. Before the present study was begun, many additional patients had been treated. The therapeutic results obtained in that entire series were distinctly disappointing.

Treatment of the forty-six patients now under consideration has been essentially that described above. All were afflicted with long-standing persistent discharge, in most instances sufficient to necessitate the constant use of napkins to prevent soiling of linen. A summarized study of these cases is presented in the accompanying table.

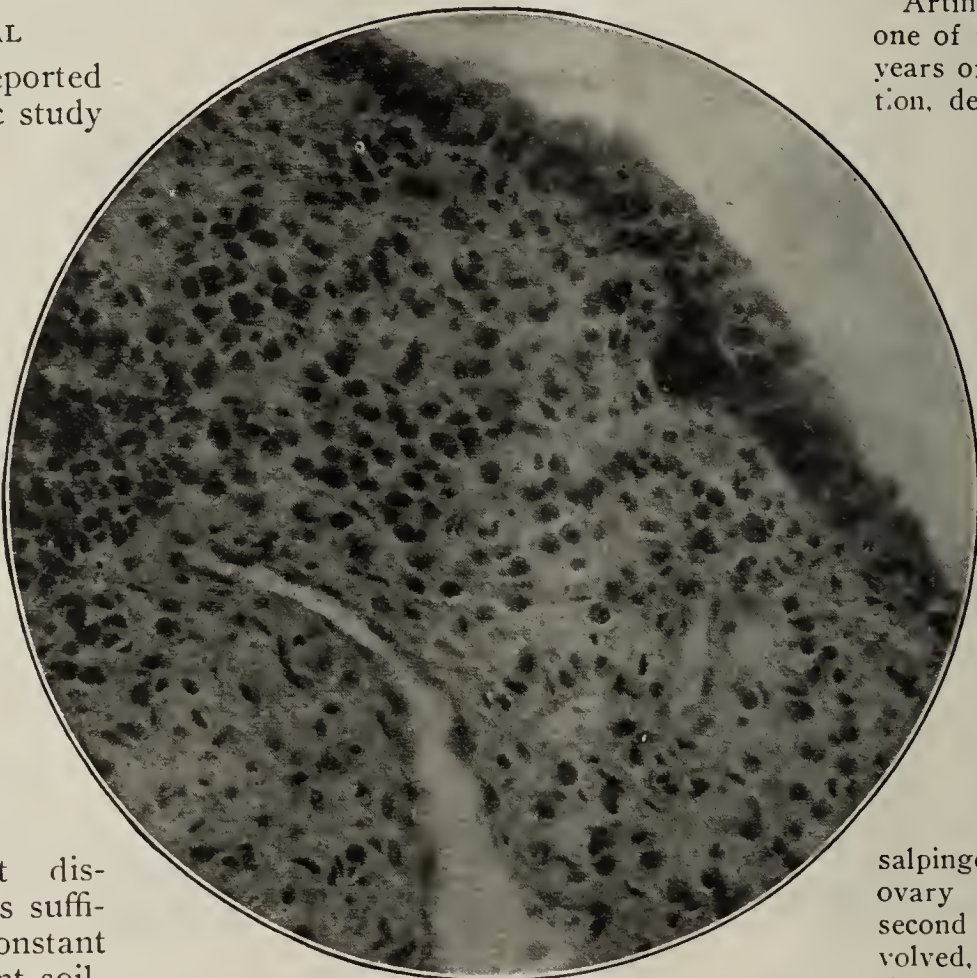


Fig. 2.—Endometritis, a complication of cervical infection; plasma cells abundant; numerous polymorphonuclear neutrophils present; X 300.

Artificial menopause occurred in one of this group. This patient, 39 years of age, with scanty menstruation, developed amenorrhea after a treatment of 500 millicuries.

GROUP 2. — *Improved* (seven cases).—One patient with excessive foul discharge developed leukorrhea during pregnancy. Abortion followed, with persistence of discharge thereafter; this continued throughout a succeeding pregnancy, which terminated at seven months. Repair of a cystocele, removal of an everted eroded anterior cervical lip, and two short treatments with radium have resulted in almost complete recovery.

A patient 33 years of age had been subjected to salpingectomy and removal of one ovary two years previously; the second ovary, although slightly involved, was not removed. Destruction of infected Skene's ducts and dilatation of a granular, strictured cervix, with one application of radium has decreased a profuse purulent discharge almost to normal. An undesired menopause was ushered in. This patient presumably had very little normal ovarian tissue at the time radium was given.

Another patient with badly infected Skene's ducts, whose scrapings revealed severe endocervicitis and normal endometrium, had received no benefit at our hands from two years' treatment of various kinds. Five months ago Skene's ducts

STUDY OF FORTY-SIX PATIENTS TREATED FOR CHRONIC LEUKORRHEA

Group	Number of Cases	Etiology			Gross Pathology				Treatment							
		Gonorrhea	Result of Pregnancy	Other or Unknown Causes	Cervix Erosion	Endocervical Granulations or Strictures	Chronic Pelvic Cellulitis	Infection of Skene's Ducts	Destruction of Skene's Ducts	Dilatation of Cervix	Curettage, Cervix and Fundus (for Diagnosis)	Radium Applications				
												1	2	3	4	
												No. of Patients				
1. Recovered.....	25	15	3	7	15	9	2	11	12	24	9	12	6	1	1	
2. Improved.....	7	6	1	0	5	3	0	6	5	4	5	2	3	2	0	
3. Treatment interrupted (2) or recently begun (8)	10	7	0	3	6	8	0	9	9	8	6	9	1	0	0	
4. Not improved...	4	3	1	0	1	2	3	3	2	2	2	1	1	1	0	

were destroyed, and the cervix was dilated and treated with radium. Extreme malaise disappeared; leukorrhea has dwindled to a slight amount.

The fourth and fifth cases, with chronic cervicitis and infected Skene's ducts, showed marked improvement after duct destruction and one radium treatment. Both have very recently received a second treatment, the results of which are not yet evident.

Finally, the very slow response to treatment, encountered in two patients, deserves brief comment.

A woman, aged 23, with offensive, foul, extremely profuse leukorrhea of three years' duration, was found to have all the usual foci of infection, including cervical granulations and complete cervical obstruction. An enormous erosion, bathed in pus, covered nearly the entire vaginal portion of the cervix. Eight months ago Skene's ducts were destroyed, the stenosed cervix dilated, and 600 millicuries of radium administered; there was no improvement. Two months later, a second radium application was made; again there was no notable improvement. Menstruation remained uninfluenced. Three and one-half months ago, after explanation that more radium might suppress menstruation, she received a third treatment. There was no evident improvement for many weeks, but the erosion has now entirely healed, and the malodorous, fetid discharge has given way to a much less abundant creamy leukorrhea; although still profuse, it is not offensive. Menstruation was excessive and prolonged after the last radiation, but has now returned to normal. It is planned to give a final treatment within a few weeks, after a rest of four months since the last application.

The other patient with slow response to treatment had a profuse leukorrhea of two years' duration. It was only after a third administration of radium that the discharge was influenced. At present, recovery is almost complete, but moderate increase in the menstrual flow warns that we have reached this patient's present tolerance for radium. If more is given, it will be a short exposure after many months' delay and with full understanding that temporary amenorrhea may result.

GROUP 3.—Treatment Interrupted or Recently Begun (ten cases).—Two patients disappeared after a single treatment and have not been heard from. Eight cases are too recent to permit deductions concerning the efficacy of treatment. These cases are included in the present series chiefly because material obtained from them has been used in that portion of this report which is concerned with the pathology of chronic leukorrhea.

GROUP 4.—Not Improved (four cases).—A patient with moderate leukorrhea had suffered for many years with left-sided pelvic cellulitis, which was the result of infection after abortion. Infection of Skene's ducts, both Bartholin ducts, and one Bartholin gland, was also present. There was a slight erosion of the cervix, but no strictures or granulations. Scrapings revealed considerable inflammation, which was equally pronounced in the endocervix and in the endometrium. The infected ducts were destroyed, and the cervix was treated with radium. There has been no improvement

in the condition; this is ascribed to inaccessible deep-seated pelvic infection.⁴

A patient with irregularly recurrent pain in the right pelvis (cellulitis), since infection at childbirth fourteen years previously, suffered greatly from vulvitis caused by a moderate, thin, milky discharge. At operation elsewhere a catarrhal appendix and normal tubes and ovaries had been found. Two radium treatments have totally failed to give relief.

The third patient in whom treatment has been unsatisfactory had, in addition to the discharge, an otherwise symptomless relaxation of uterine supports with moderate displacement backward and to the right. She has received three radium applications at intervals of several months. Nervousness, flushes and slightly irregular, increased menstruation followed the last treatment. Slow improvement is manifest, but recovery is improbable unless radium is employed in an amount sufficient to destroy ovarian function.

In the last of this group there was low-grade infection, which apparently invaded all of the pelvic organs and cellular tissues. A mild arthritis involved many joints and caused much distress. Slight improvement has been obtained through occasional dilatation of the strictured cervix. It is thought that radium treatment is not well adapted to this type of case, and will be dispensed with if possible.

COMMENT

Of thirty-six patients available for thorough treatment, thirty received radium and twenty were subjected to destruction of Skene's ducts. Twenty-five recovered, seven were distinctly improved, the result in one was doubtful, and three were not materially benefited.

Menopause was produced in two patients. One of these, 39 years of age, with scanty menstruation at the time of radium treatment, received 500 millicuries. The other patient, with one remaining partly diseased ovary, received 700 millicuries.

Sufficient radium distinctly to influence ovarian activity was given to three patients, each of whom received three treatments at infrequent intervals. Symptoms of impending amenorrhea in these three patients were characterized by greatly increased irregular menstruation, with associated nervousness and tendency to occasional flushes. All returned to symptomatically normal condition within three months.

In explanation, it should be stated that these patients were aware of the possibility of artificial menopause before their last radium treatment, but decided to incur the necessary risk.

Granted that radium is a remedy of value, certain questions arise. How many patients, in the course of radium treatment directed to the relief of chronic leukorrhea, will require radiation in an amount suffi-



Fig. 3.—Healed cervix, six months after radium treatment for chronic leukorrhea; great decrease in number of glands; those that persist are atrophic; $\times 120$.

4. A recent message from this patient states that the discharge has entirely ceased. This report has not been confirmed by local examination.

cient to produce amenorrhea? Again, in those cases amenable to cure through moderate doses of radium, are the functions of childbearing or formation of internal secretion materially disturbed, even though menstruation continues?

Experience thus far indicates that the pathologic changes in most cases are within reach of radium. The present plan is to discontinue the use of a double gold screen, replacing it with a single rubber covered gold capsule, not over 1 mm. in thickness. Short applications, made at intervals of not less than ten weeks, permit observation of the effects of each treatment. Even in repeatedly treated stubborn cases it is thus possible to avoid production of premature menopause. Whether it will often be necessary to discontinue treatment before cure is effected remains to be determined.

It is my opinion that radium in amounts small enough not to disturb menstruation is not to be feared as a cause of sterility. On the other hand, it will probably not be especially beneficial in the relief of sterility because a large percentage of patients with cervix infection have already suffered from catarrhal salpingitis. Two exceptions have been encountered: A patient of Dr. Watkins, who had not been pregnant for five years, complained of sterility. Conception developed within three months after relief of a cervical catarrh through an application of 500 millicuries of radium. The other patient received 925 millicuries. She is now pregnant and expects to be confined in two months.

Finally, a word on the relationship of chronic leukorrhea to focal infections. Chronic arthritis has been noted with unexpected frequency in patients without other demonstrable foci; the regions most involved are the lower spine, sacro-iliac joints, and the finger joints. It is too early to determine the amount of improvement obtainable through cure of the vaginal discharge; this evidence will be awaited with interest.

CONCLUSIONS

1. Important foci of infection are to be found in Skene's ducts and the uterine cervix. The chief cervical lesions consist in hyperplasia of infected cervical glands, endocervical granulations and strictures, and erosions of the cervix.

2. Discharges arising from Skene's ducts are relieved by free incision and fulguration of the infected tracts.

3. Chronic leukorrhea of cervical origin is, in most instances, amenable to cure through dilatation of strictures and treatment with small doses of radium applied at infrequent intervals. The prognosis is less favorable in those cases with chronic cellulitis or uncorrected gross pelvic lesions.

104 South Michigan Avenue.

ABSTRACT OF DISCUSSION

DR. FRANCIS REDER, St. Louis: The genital tract of woman in a normal condition is usually bathed in a leukorrheal discharge. There has been a tendency to disregard the true meaning of the word leukorrhea, the term being applied to almost any discharge escaping from the female genital fissure. When could a leukorrhea be considered chronic or pathologic? Usually when the woman consults the physician. It is to be regretted that women frequently disregard a vaginal discharge for a long time before seeking advice. This often has its bad consequences, inasmuch as a discharge where bacterial invasion has been of short duration is more readily

relieved than a discharge of long standing, where infectious micro-organisms have been allowed full freedom to accomplish their contamination, thus increasing the difficulties of a cure. Furthermore, the anatomic peculiarity of the structures forming the canal of the cervix and the cavity of the uterus favor the persistency of the discharge. There is no submucosa. The mucosa is intimately connected with the underlying muscularis, the extremities of the glands dipping more or less freely into that structure. These occluded and buried glands harbor the micro-organisms. The gonococcus is responsible for a chronic leukorrhea in the majority of cases. A good history will greatly assist in arriving at the true nature of the discharge. It is well to bear in mind that in the adult a gonococcus infection invades the vulva, especially the urethra and vulvovaginal glands, and the cervix uteri. Rarely does the vagina suffer. An infection of the cervix uteri is often primary. In instituting treatment for a chronic vaginal discharge, it should be ascertained if it is a vulvar, a vaginal, a cervical, or an intra-uterine leukorrhea. Often a discharge having its origin in a chronically inflamed cervix, one which has become indurated by alveolar hyperplasia, will be readily cured by a plastic operation. As far as radium is concerned: I have not used it. The present status of the use of radium in chronic leukorrhea, as I see it, is this: Will a woman in the menstrual age consent to have her chronic leukorrhea cured at the risk of sacrificing her menstrual function?

DR. THOMAS J. WATKINS, Chicago: Dr. Curtis' work follows up the work of Hitchman and Adler which demonstrated that the amount of endometrium obtained on curettage depends on the menstrual cycle and has very little relation to the question of infection. The bacteriologic work done, especially by Dr. Curtis, three or four years ago, showed that in the great majority of cases the cavity of the uterus is sterile; that the bacterial invasion is limited to the cervix. This means that curettage is an operation which has been done much too often, that there is almost no indication for curettage of the endometrium, except for diagnostic purposes. The reason why curettage has helped in some cases of uterine leukorrhea is that the cervix was dilated. Dilatation of the cervix is valuable to improve drainage. The question of the care of infections in the vaginal orifice is a very important one, one very frequently neglected. As to the action of radium in these cases, I wish to emphasize the fact that erosion of the cervix will almost invariably heal over after the use of radium. It is important to regulate the dose so as not permanently to injure the function of the ovary. Radium diminishes the number of epithelial cells and increases the number of connective tissue cells and in this way drains the deep glands in the cervix.

DR. PETER B. SALATICH, New Orleans: If the uterus is displaced backward, you can plicate and cut as much as you like and the patient will continue to have leukorrhea because the congestion is permanent and continuous. A young woman came to me with her face full of acne. She had headache and joint troubles. I examined her cervix and found it entirely devoid of mucous membrane. I used phenol and curetted. The patient was not relieved. Then I used a solution yielding active chlorin, and in five or ten applications the patient was well.

DR. ARTHUR H. CURTIS, Chicago: Except in a few instances, when granulations were very excessive, a preliminary curettage was done only for diagnostic purposes. It is not advisable to apply radium when there is marked infection of the upper genital organs. One of the men from the Pasteur Institute who visited with us in Chicago some months ago, stated that he had used radium in 250 cases of pus tubes and that the results were very encouraging. To say that the use of radium is out of proportion to the seriousness of leukorrhea or the infections which cause leukorrhea, indicate that the speaker is a man, not a woman. If he had to walk around with a profuse purulent discharge and was forced to wear a napkin all of the time, he would be glad to have radium used. I do not believe in giving enough radium to sterilize the patient or interfere with the menstrual function. In most of the cases of this series I used a thick double gold

screen. Recently I have screened much less and now I usually employ a gold capsule half a millimeter in thickness, surrounded by a thin covering of dental rubber. I have tried innumerable remedies for the cure of leukorrhea, but have found none of them efficacious.

RESULTS OF THE EXPOSURE OF ANIMAL OVARIES TO THE RAYS OF RADIUM*

JOHN M. MAURY, M.D.

MEMPHIS, TENN.

The experiments here recorded were made for the purpose of determining the changes brought about in the ovaries of rabbits by exposing them to 50 mg. of the element radium for twelve hours. This dosage was selected because it is that generally used in cases of so-called idiopathic uterine bleedings but which are now regarded as being due to an abnormal condition of ovarian secretion.

As some of these cases, particularly in young subjects, can be cured by the internal administration of pituitary extract, it is possible that not all of them are due entirely to ovarian conditions, some being due rather to a disturbance of the balance normally existing between the output of the pituitary gland and the ovaries.

It is well known that the intra-uterine application of radium has an effect on menstruation proportionate to the dose, 50 mg. of the element applied for twelve hours being sufficient to stop menstruation for several months, and in some instances to establish the menopause permanently. The generally accepted theory is that this result is brought about by a destructive action of radium on the follicles most advanced in development, menstruation returning after the young follicles, on which radium is supposed to have had no effect, have had time to mature. Little account, so far as I can learn, seems to have been taken of the effect which must be produced on the endometrium, on which its greatest power must be exerted.

Considering the small amount of radium used in these cases and the distance from the uterine cavity to the ovaries, to one who is accustomed to the use of radium there must be some doubt arising as to the results being brought about in the manner claimed. It is also difficult to imagine a satisfactory reason why the mature follicles should be killed and the less mature ones remain uninfluenced, especially as every-

where else in biology the less mature a thing is the greater its susceptibility to disintegrating influences. As a matter of fact, I have not been able to substantiate this theory by microscopic examination of the ovaries treated, and I have other evidence which seems to show that neither the large nor the smaller follicles are influenced by this dosage of radium.

In determining changes which may have resulted from treatment, great difficulty is encountered because the normal ovary presents no fixed standard for comparison. In normal ovaries, degeneration is present to a greater or less degree in follicles in all stages of development, comparatively few completing the cycle of growth to maturity and rupture with the discharge of a living ovum. This is particularly true in the rabbit, because ovulation does not take place without copulation. Follicles maturing except at this time do not continue to live, but die and degenerate and, as pointed out by Graves, all those follicles arriving at maturity during pregnancy must become atretic. It was therefore necessary to examine a large number of

normal ovaries to familiarize oneself with the great variations that may exist.

Ovaries of rabbits differ from the human ovaries in the amount of epithelial tissue present. While the human ovary may be described as a connective tissue organ containing graafian follicles and having a fibrous capsule outside of which is the germinal epithelium, the rabbit ovary is a mass of epithelial cells having a thin connective tissue cortex surrounded by the capsule and germinal epithelium. Most of the follicles are found embedded in the con-

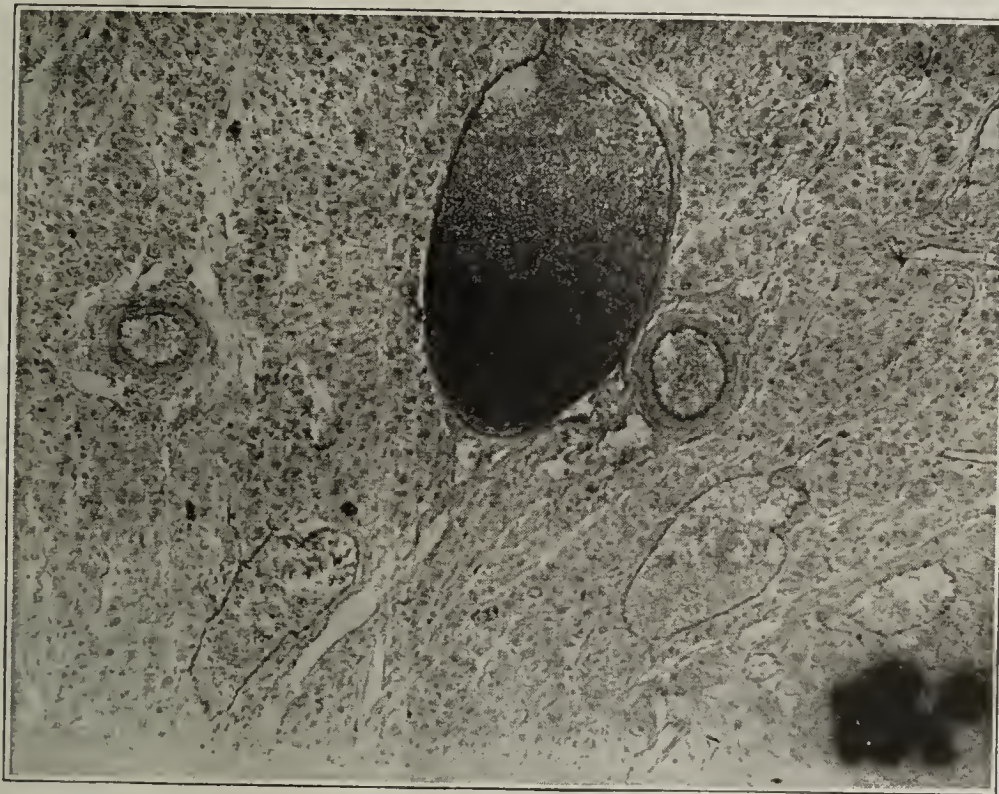


Fig. 1.—Blood vessels nine weeks after 600 mg. hours of radium. No endarteritis; peculiar thin walled vessels filled with blood.

nective tissue cortex. The epithelium of the body of the ovary can easily be distinguished from the epithelium of the corpus luteum by the latter cells being of larger size and surrounded by the theca.

The ovaries of rabbits occupy a rather fixed position in either flank, close to the abdominal wall and just above the crest of the ilium. In this position they are much closer to radium placed on the skin surface than are the ovaries of the human being to radium placed in the uterine cavity. Having less tissue intervening, they are therefore more susceptible to the action of the rays.

Fifteen female rabbits were treated, each being given a dosage of 600 milligram hours, the radium applied to the skin surface overlying the ovaries. One was killed in three weeks, two in four weeks, two in five weeks, four in six weeks, three in eight weeks and four in nine weeks. The ovaries removed were not touched with fingers or forceps. They were placed in 70 per cent. alcohol at once and run up for paraffin sections as soon as possible. The first few were sectioned serially and examined throughout. This con-

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

sumed much more time than was available, and was found to be unnecessary. Therefore in the others, from fifty to seventy-five sections were removed from each side and from the middle portion of the ovary and examined, making about 150 to 200 sections from each ovary. In the examinations of sections, special

a state of degeneration. Deducting, therefore, the seven ovaries not containing follicles of sufficient size to be supposedly affected by radium, there remain twenty-three, twelve of which contained large follicles showing no effect from treatment.

In addition to this evidence, two rabbits were put with a male and became impregnated five weeks after treatment, in one four and in the other five embryos being removed from the uterus several weeks later—rather convincing evidence of the viability of the ovum when it was discharged from the ovary.

Two other animals which had become pregnant were later treated and did not miscarry, indicating that the membrana granulosa of the mature follicles, from which the corpus luteum cells are probably formed, was not degenerated; for it is well known that if the corpus luteum of pregnancy is destroyed in its early stages, the fetus will be cast off.

From these results I think it a fair deduction that a 600 mg. hour dosage of radium does not produce degeneration of the follicles of the ovaries.

REPORT OF EXPERIMENTS

RABBIT 1.—Killed in three weeks after 600 mg. hours of radium.

Right Ovary: Quite small. Not more than half the thickness of the left ovary.

1. The germinal epithelium is normal.
2. This ovary resembles the human ovary in that the connective tissue exists throughout and there is no epithelium except in a few corpora lutea. A cirrhotic ovary.
3. Very few primordial follicles and only a few small

attention was given to the germinal epithelium, the connective tissue cortex, the blood vessels and the follicles.

Macroscopically, the ovaries varied greatly in size. One, a sclerotic ovary, was a mere strip of tissue composed, as seen under the microscope, of only connective tissue with almost no follicles. I do not think this was the result of the treatment because the ovary was removed only three weeks after treatment, and there were no signs of follicles in a state of degeneration and almost no small follicles of any size, a change so great that it could hardly have taken place in three weeks. The variation in size seemed to depend on the number and size of the atretic follicles and corpora lutea present. Both in number and size these structures varied greatly in different ovaries. In all ovaries examined, the germinal epithelium was present and in normal condition. The connective tissue cortex varied much in thickness in different ovaries, even the two ovaries from the same animal presenting considerable variation. The blood vessels showed no signs of endarteritis, and as they normally have unusually thick walls, this change could easily have been observed had it been present.

As would naturally be expected, the greatest variation was shown in the condition of the follicles. In seven of the ovaries examined there were no follicles approaching maturity either alive or in a state of degeneration. In twelve there were living follicles at or close to maturity which showed no evidence of having been affected by the treatment. In the remaining eleven all the large follicles were in

follicles; some alive, some dead and degenerating. No medium sized follicles and no large ones. None in a state of cystic degeneration.

4. Blood vessels normal, but few in number.

Left Ovary: Double the size of right one.

1. Germinal epithelium normal.

2. Connective tissue cortex surrounding epithelial mass.

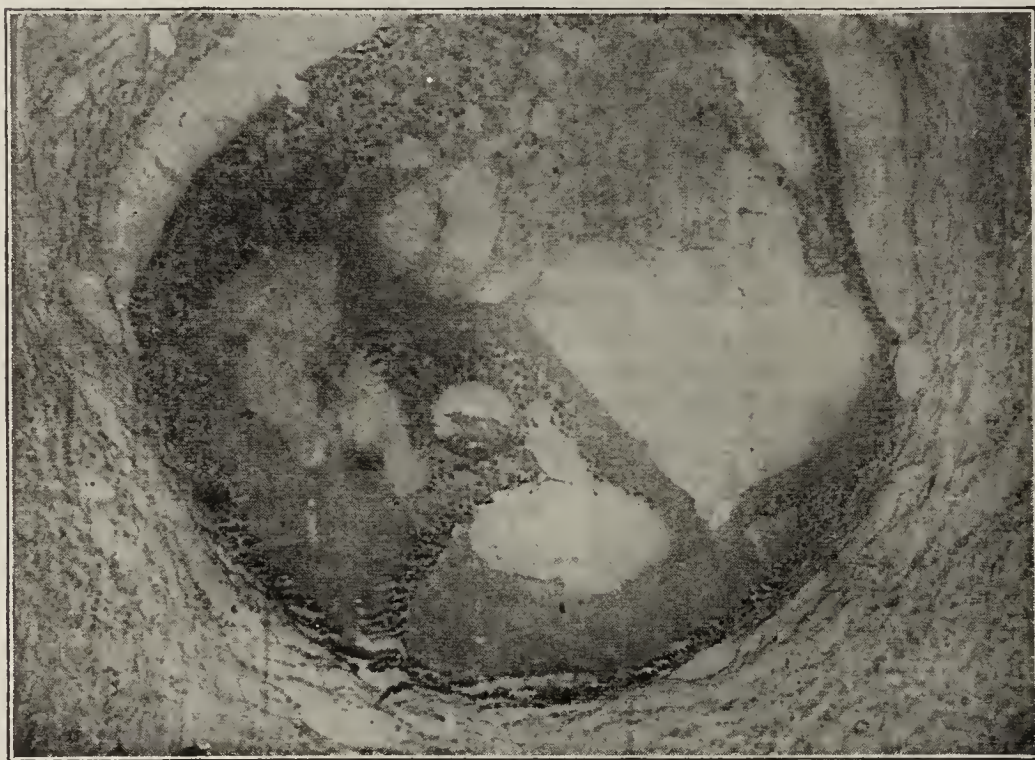


Fig. 2.—An atretic follicle, to illustrate the difference between degenerating follicles and nondegenerating ones.



Fig. 3.—A nearly mature nondegenerating follicle eight weeks after 600 mg. hours of radium; shrinkage of granulosa from theca is postmortem.

3. Two primordial follicles which seem to be normal. Fairly large number of small follicles, some degenerating and some in normal state of preservation. A considerable number of large atretic follicles. All large ones atretic.

4. Blood vessels normal.

RABBIT 2.—Killed four weeks after 600 mg. hours of radium.



Fig. 4.—A nearly mature nondegenerating follicle nine weeks after 600 mg. hours of radium; also shows smaller follicle in state of preservation.

Right Ovary: 1. Germinal epithelium heaped up over one portion of the ovary, opposite which, in the cortex, are a very large number of primordial follicles. This heaping up of the germinal epithelium is irregular in outline and not even, as when cut on a slant.

2. The connective is greatly in excess of the epithelial body of the ovary, extending in places deep down into it.

3. Primordial follicles are in large numbers. A considerable number of small follicles beyond the primordial stage. A number of large follicles just under maturity not in a state of degeneration. A few atretic follicles.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Moderate number of primordial follicles. Very few small follicles. No follicles of any size not in a state of cystic degeneration.

4. Blood vessels normal.

RABBIT 3.—Killed four weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue normal.

3. Primordial small and medium size follicles normal. One large nearly mature follicle unde- generated. A few large atretic follicles.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue normal.

3. Many primordial and small follicles. No follicles of size supposedly to be affected by radium.

4. Blood vessels normal.

RABBIT 4.—Killed five weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Primordial follicles relatively few. A fair number of small follicles, some of which are degenerating. No large follicles and no atretic follicles.

4. Blood vessels normal.

Left Ovary: Shows the same condition as the right ovary.

Neither shows follicles of a size to be supposedly influenced by radium.

RABBIT 5.—Killed six weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex rather thin.

3. Primordial follicles relatively few, and many of them in a state of degeneration. Some small follicles, but none of medium or large size. No atretic follicles. The ovary is of fair size, but contains only a small amount of follicular tissue.

4. Blood vessels normal.

Left Ovary: 1. Heaping up of germinal epi- thelium in places. Normal elsewhere.

2. Connective tissue thin in places, but quite thick in others where numbers of primordial follicles are embedded.

3. Primordial follicles are found in numbers in places. Scarce in other places. Small and medium size follicles few. A few large cystic follicles. One large nearly mature undegenerated follicle.

4. Blood vessels normal.

RABBIT 6.—Killed six weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex thin.

3. Few primordial follicles. A large number of small follicles not degenerated. A number of nearly mature undegenerated follicles. A few atretic follicles.

4. Blood vessels normal.

Left Ovary: Quite small in size.

1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Few primordial follicles. Some small follicles not degenerated. Some large degenerated follicles, and several almost mature not degenerated.

4. Blood vessels normal.

RABBIT 7.—Killed six weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. A few primordial follicles. A number of small follicles,

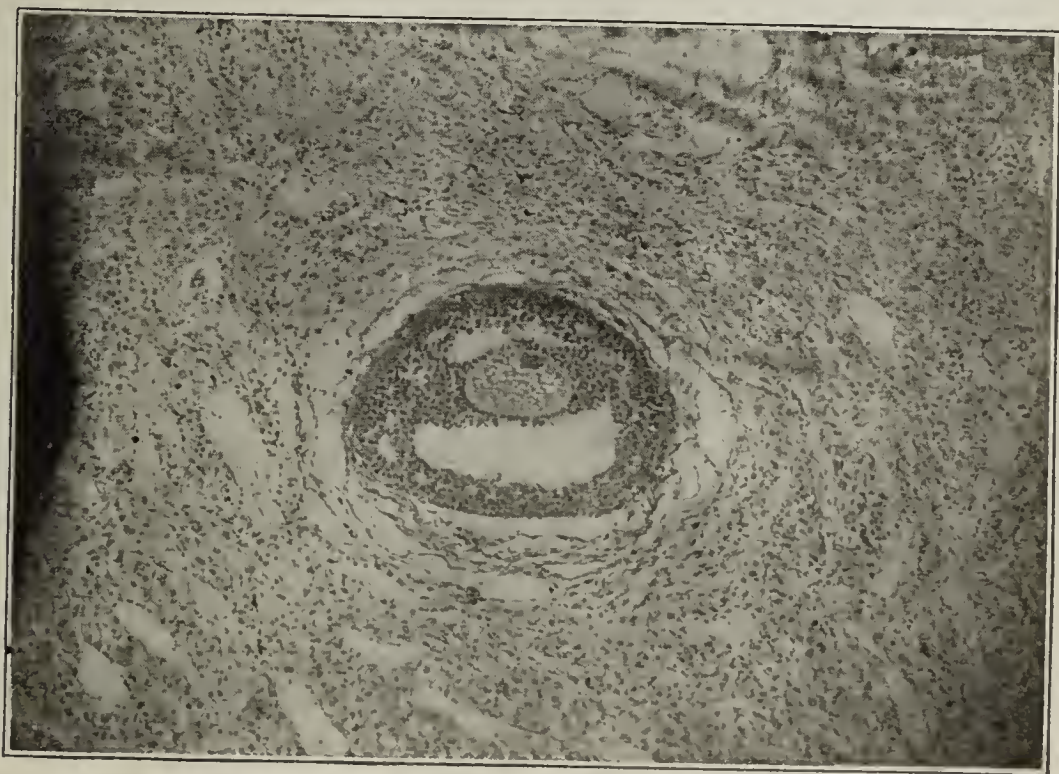


Fig. 5.—A nearly mature nondegenerating follicle six weeks after 600 mg. hours of radium.

some degenerated, others not. No follicles near maturity not degenerated. Several large atretic follicles.

4. Blood vessels normal.

Left Ovary: A number of primordial and small follicles in normal state. No follicles nearing maturity not in state of degeneration. Other structures, i. e., germinal epithelium, connective tissue cortex and blood vessels, in normal state.

RABBIT 8.—Killed six weeks after 600 mg. hours of radium.
Right Ovary: 1. Germinal epithelium normal.
2. Connective tissue normal.
3. Many primordial small and medium size follicles present and in normal condition. Several nearly mature follicles in normal state of preservation. A few atretic follicles.
4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.
2. Connective tissue normal.
3. Primordial small and medium size follicles normal. Several nearly mature follicles in normal state of preservation. A few atretic follicles.

RABBIT 9.—Killed eight weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.
2. Connective tissue cortex thin in some places, thick in others. About normal in amount.

3. Primordial follicles few and not affected. Small follicles fairly numerous; some degenerating, others normal. No follicles near full development not degenerated. A few large follicles in state of cystic degeneration.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.
2. Connective tissue cortex normal.

3. Primordial small, medium and nearly mature follicles normal. A number of atretic follicles present.

4. Blood vessels normal.

RABBIT 10.—Killed eight weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.
2. Connective tissue cortex normal.

3. A large number of primordial and small follicles in normal state. A number of atretic follicles.

4. Blood vessels normal.

Left Ovary: Fairly large, but smaller than the right.

1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Many primordial and small follicles in normal state.

3. All follicles except the primordial and small follicles in a state of degeneration. A number of atretic follicles.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Very few follicles of any size. No large follicles present.

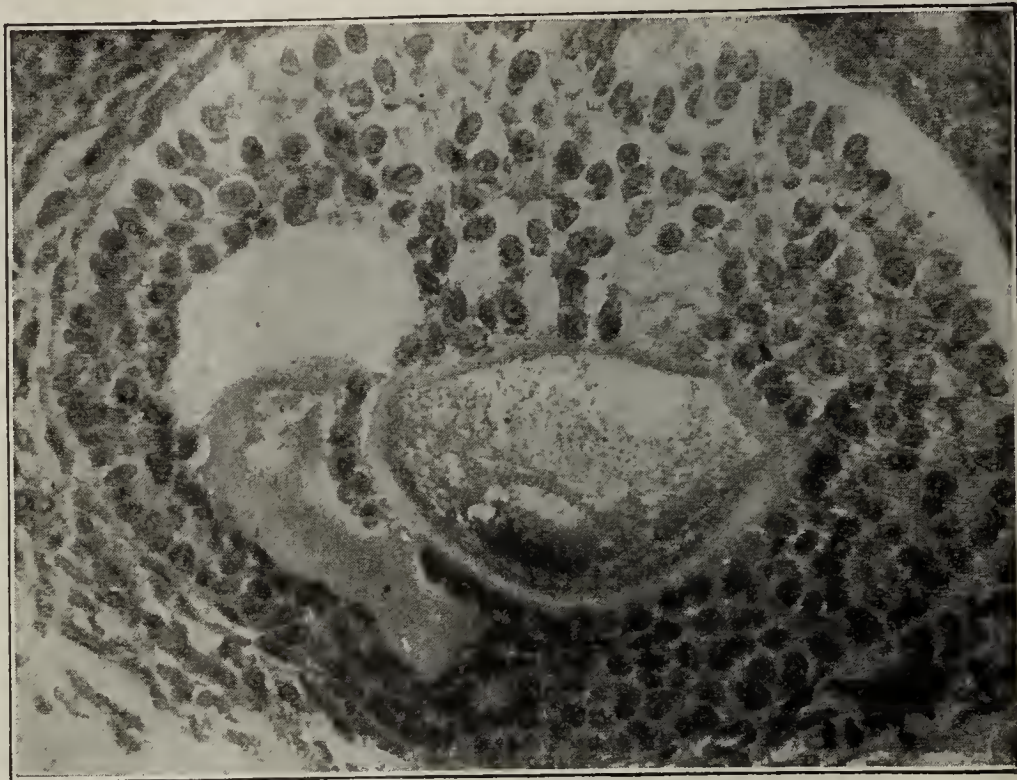


Fig. 7.—High power of nondegenerating follicle nine weeks after 600 mg. hours of radium.

4. Blood vessels normal.

RABBIT 12.—Killed nine weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Primordial follicles few in number. Medium size follicles few. The nearly mature follicles all in a state of degeneration. The degeneration is more marked in the granulosa than in the ovum.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium, connective tissue and follicles are as described in right ovary. There are a number of thin walled vessels filled with blood, a condition not seen in other ovaries examined.

RABBIT 13.—Killed nine weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.
2. Connective tissue cortex normal.

3. Few primordial and moderate number of medium size follicles. Large follicles all in state of degeneration.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex thin.

3. Few follicles of any size to be seen. One nearly mature follicle in state of preservation.

4. Blood vessels normal.

RABBIT 14.—Killed nine weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.
2. Connective tissue cortex rather thin.

3. Very few primordial or small follicles present. A few nearly mature follicles in state of degeneration. Several large atretic follicles.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Few primordial, many small follicles. A few medium size and a number of nearly mature follicles in normal state. A number of large atretic follicles.

4. Blood vessels normal.

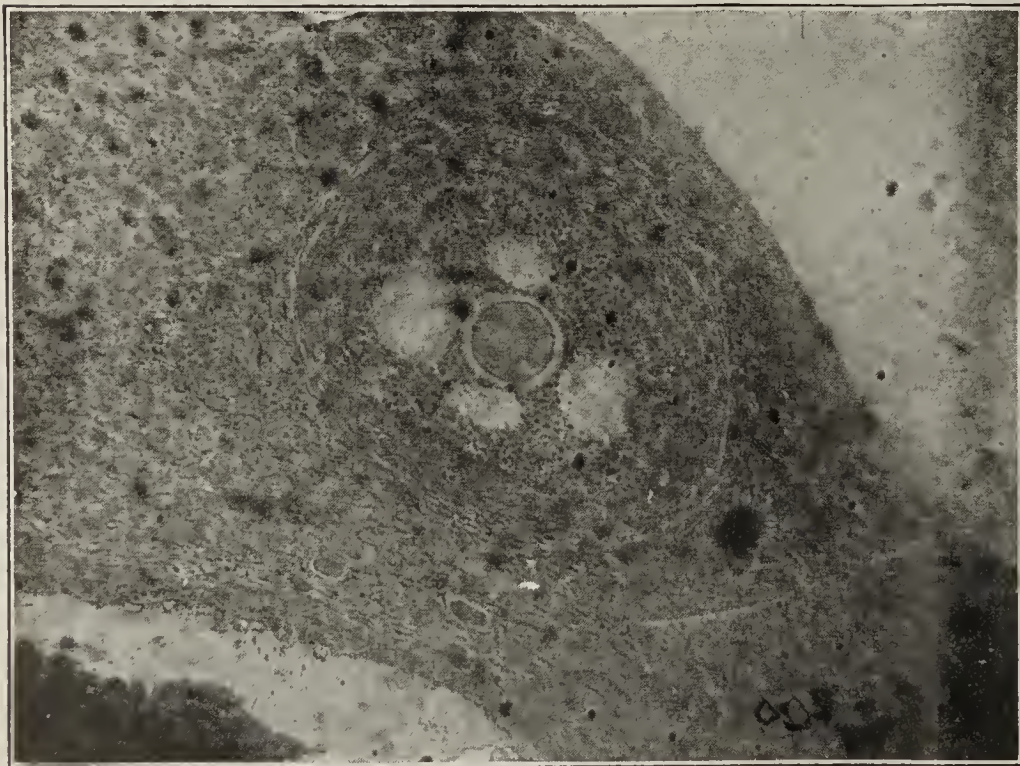


Fig. 6.—A nearly mature nondegenerating follicle eight weeks after 500 mg. hours of radium; it shows an unusually developed theca.

Many follicles near maturity in normal state of preservation. Many atretic follicles.

4. Blood vessels normal.

RABBIT 11.—Killed eight weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

RABBIT 15.—Killed nine weeks after 600 mg. hours of radium.

Right Ovary: 1. Germinal epithelium normal.

2. Connective tissue cortex normal.

3. Many primordial and small follicles. No follicles of size to be affected by radium.

4. Blood vessels normal.

Left Ovary: 1. Germinal epithelium normal.

2. Connective tissue normal.

3. Many primordial and small follicles, some normal, some degenerated. All follicles near maturity degenerating.

4. Blood vessels normal.

720 Bank of Commerce Building.

ABSTRACT OF DISCUSSION

DR. HENRY SCHMITZ, Chicago: There is much difference of opinion as to how radium causes amenorrhea in the treatment of uterine hemorrhage, either idiopathic or myomatous. Most writers regard it as a destruction or degeneration of the ovarian epithelial cells. I believe that the effect of the radium is almost exclusively confined to the endometrium which receives in a twelve hour exposure of 50 mg. of radium element a burn of the third degree in some parts, a burn of the second degree in the parts more distant from the radium capsule and a burn of the first degree in the most distant lateral portions. A burn of the third degree causes an irreparable damage, while burns of the first and second degrees heal very readily with partial restitution of function in the endometrium. The action of the rays on the ovaries is negligible. I have examined microscopically many ovaries obtained by panhysterectomy in cases of carcinomatous uterus to which from 6,000 to 8,000, and more, milligram element hours of gamma rays had been applied. Macroscopically, a decrease in the size of the ovaries was noted; on section the ovary appeared to be hard and sclerotic and devoid of folli-

usual location of the radium capsule in these treatments. Supposing that the radium carrier is exactly maintained in this position, then according to the law of the inverse ratio the ovary receives one sixty-fourth the amount of rays the endometrium receives at 1 cm. distance. At 1 cm. distance from a radium capsule the lethal erythema skin dose is about



Fig. 9.—A follicle nine weeks after 600 mg. hours of radium. There is beginning degeneration in the granulosa, with a well preserved ovum. This degeneration is probably not the result of radium, as nine weeks have elapsed since treatment, and the changes are only beginning.

100 milligram element hours and at 8 cm. it is 64×100 or 6,400 milligram element hours. If this is divided by five, the ovarian sensibility quotient, then the amount of milligram element hours to cause degeneration of the ovarian epithelial cell elements, so that amenorrhea results, must be at least 1,280 milligram element hours. Hence, 600 milligram element

hours, the amount usually used, cannot produce degeneration in the human ovary. Dr. Maury's findings and conclusions may also be proven by clinical observations. Many of these patients, after a period of amenorrhea lasting usually from three to six months, again menstruate regularly. Evidently, the damage in the endometrium was partly repaired and ovulation, not having been interfered with, begins to exert its influence on the repaired endometrium. Two patients, one treated for an essential menorrhagia, the other for a myomatous menorrhagia, soon after treatment conceived and had normal pregnancies and labors. The infants, also, were perfectly normal. These two instances prove beyond doubt that radiation did not affect the ovaries, or if it did, the injuries were not irreparable. The results of these animal experimentations would be beyond criticism if the erythema skin dose of the rabbit had been determined and the distance between the radium capsule and the ovary had been noted. If one of the ovaries had been removed in each rabbit first, and the one left behind treated immediately afterward, comparisons could have been made between the irradiated and the normal ovary in the same animal.

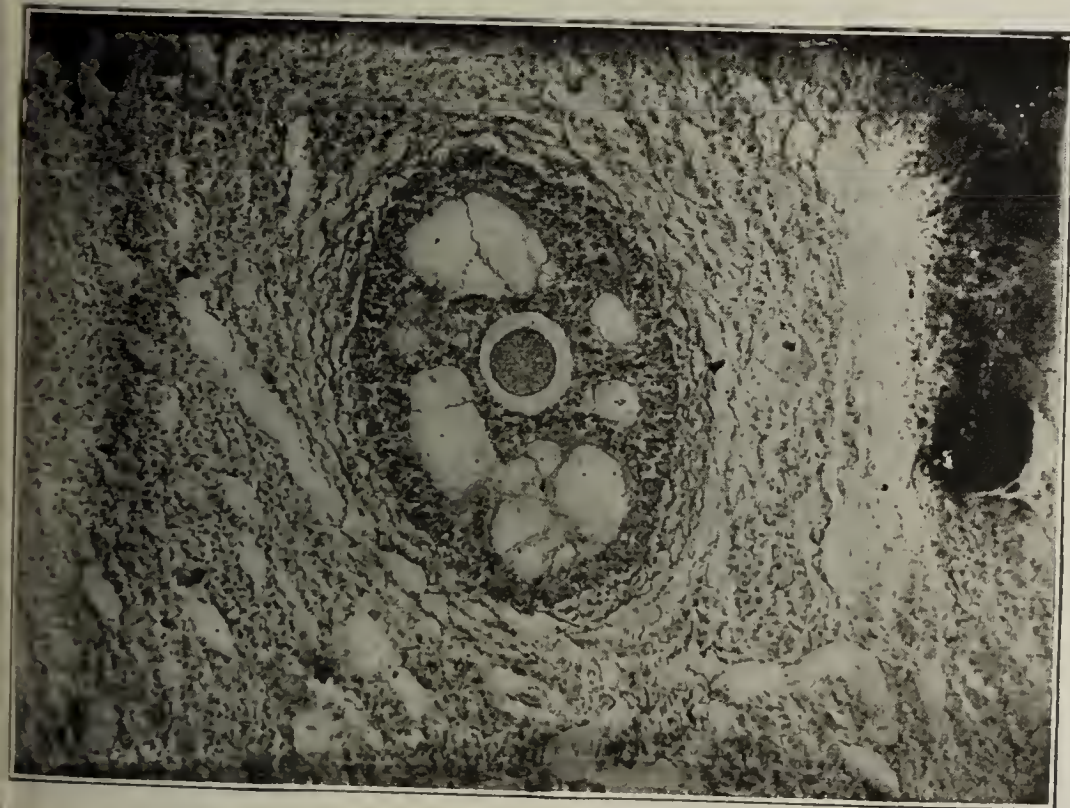


Fig. 8.—A well preserved follicle six weeks after 600 mg. hours of radium.

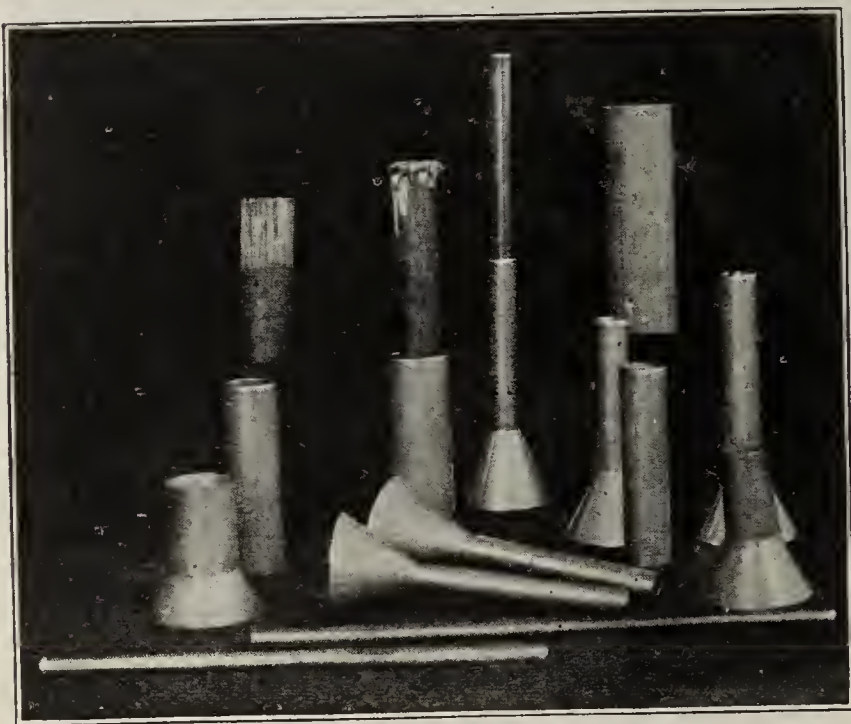
les. Microscopically, a degeneration or absence of all epithelial cell structures was noted. The interstitial tissue or stroma was not affected. The sensibility of the ovaries to the rays in comparison to the erythema skin dose, which is taken as the standard in biologic measurements, is about five times greater. The ovaries are on an average about 8 cm. distant from the middle of the upper portion of the uterine cavity, the

The Ideal of Preventive Medicine.—Preventive medicine can never be satisfied until it has attained Isaiah's ideal (Isaiah lxx, 20): "There shall be no more thence an infant of days, nor an old man that hath not filled his days; for the child shall die an hundred years old."—Arthur Newsholme, *Commonhealth*, Nov.-Dec., 1919.

Clinical Notes, Suggestions, and New Instruments

APPARATUS FOR COLLECTING CARBON DIOXID SNOW WILLIAM ALLEN PUSEY, M.D., CHICAGO

I am repeatedly called on for advice as to the best apparatus for collecting and molding carbon dioxid snow, or for information how to collect and mold it. These requests are still so frequent that it seems to me worth while briefly to describe the method which I have found satisfactory and



Apparatus for collecting carbon dioxid snow.

which requires only such apparatus as one can readily devise for himself. This method is as follows:

I use a piece of chamois skin to collect the snow. Two or three layers of towel or cloth can be used, but chamois is better. A piece of chamois skin about the size of a large handkerchief is a convenient size. The tank of liquid carbon dioxid is kept on a rack where it is slightly inclined with the nozzle at the lower end, so that the liquid carbon dioxid will be blown out when the vent is opened. To collect snow, the chamois is wrapped around the tip of the tank so that it bags over the vent but forms a fairly tight sack around the tip. If then the shut-off is opened by a turn of the wrench, carbon dioxid will escape into the chamois, and, if there is any liquid in the tank, will quickly collect as a mass of snow in the chamois. A very few seconds is sufficient to collect enough snow to make the ordinary stick. The vent is closed after a few seconds; the chamois unwound, and the snow can then be scraped up in a spoon to be put into the molds.

For molds I use metal or rubber tubing such as is shown in the accompanying illustration. A good length for the molds is about 3 inches. I keep a supply of molds varying in diameter from one-third inch to 1½ inches. For the smaller molds, which have to stand a severe strain from the pounding necessary to make hard sticks, seamless metal tubing is best; otherwise the tubing is likely to give way at the seam. For making large, thick sticks a rubber mold is sufficient, but it is not so good as a metal one. For convenience, on each mold that is frequently used I have attached a permanent funnel.

With the larger molds I push down the snow through a funnel like the two short molds, one of which stands at either side in front in the illustration. For molding the snow in the cylinders I have metal or wooden rods which correspond approximately in diameter to the diameters of the tubes in which they are used. The only other apparatus necessary is a hammer with which to drive down the snow with the rods.

The snow collects in the chamois in a loose mass. It is pressed down into the molds with the rods by hand as firmly as possible. This procedure is repeated with successive quantities of snow until the cylinder is well filled with a firm mass. Then it is hammered down with a hammer until a firm stick of snow is formed. In a tube of small diameter, one can hammer it down firmly enough to make a stick of ice; but ordinarily it is not desirable to have the stick so hard. In a minute or two after forming the stick, it becomes loose in the mold through evaporation, so that it can easily be pressed out of the mold. It is then handled between the fingers protected by a bit of chamois skin. After the sticks are made they can easily be shaped to any form desired by melting on a metal surface. For this purpose I keep a little nickle-plated flat-iron with the handle taken off. On this, carbon dioxid snow can be readily made in any desired shape.

The only difficulty about this method of molding the sticks is that one must have some solid base on which to pound. I have always done this on a corner of the top of a fire-proof safe. The advantage about this method of molding carbon dioxid snow is that it gives one a wide range in the size of the sticks that he can make. One does not always want the same size sticks. This method is convenient and it has entirely served my purpose.

7 West Madison Street.

A SIMPLIFIED PLATE METHOD OF PARTIAL OXYGEN TENSION IN THE CULTIVATION OF THE GONOCOCCUS *

RUSSELL D. HERROLD, M.D., CHICAGO

The idea of growing the gonococcus and other organisms under reduced tension is not new. Wherry and Oliver¹ have demonstrated the value of the method. Chapin² and more recently Maitra³ have used it with success in obtaining primary cultures on a variety of mediums.

The advantage of using plates in the isolation of the gonococcus is obvious when it concerns the isolation of gonococci mixed with other bacteria. Here, streaking of the material over a large surface is necessary to obtain discrete colonies. The simple method of using partial oxygen tension plates here described has been devised and employed with success in this laboratory.



Two inoculated plates, one with gonorrheal material, the other with *Bacillus subtilis*: at left, with open sides facing each other; at right, with edges enclosed by rubber band.

Two inoculated plates, one with the gonorrheal material, and the other with *B. subtilis*, are placed together with the open sides facing each other as shown at the left in the illustration. Then a closed rubber band 2½ inches wide by 3½ inches in diameter encircles both, enclosing the edges but allowing aerial communication between them, as shown at

* From the John McCormick Institute for Infectious Diseases.

* This work was carried out by means of a grant from the United States Interdepartmental Social Hygiene Board.

1. Wherry, W. B., and Oliver, W. W.: J. Infect. Dis. 19:28 (Sept.) 1916.

2. Chapin, C. W.: J. Infect. Dis. 23:342 (Oct.) 1918.

3. Maitra, G. C.: Indian J. M. Res. 7:219 (July) 1919.

the right. Satisfactory bands may be obtained by cutting wide rubber tubing into pieces of the required width. The simplicity of this method makes it practical for the small laboratory and, in addition, permits of individual cultures being examined without disturbing others, as is necessary with several cultures in a single jar. The rubber also serves equally well for air exclusion plates, which have a distinct advantage over open aerobic plates in gonococcus cultivation; but they are inferior to the partial oxygen tension method just described, especially in obtaining primary growth. Parallel plates have been tested with a variety of mediums, and the best growth was obtained on nutrient bactoveal agar in which dibasic sodium phosphates were substituted for sodium chlorid.⁴ Ascites fluid and defibrinated goat blood were added in the approximate proportion of 2 c.c. of ascites fluid and 0.5 c.c. of blood to each Petri dish before pouring the plates. A fair growth has resulted with this medium minus ascites fluid.

Cultures of gonococci have been obtained in several cases of chronic infections in which the gonococcus could not be identified in smears. In all the acute cases of gonorrheal urethritis there was a profuse growth, parallel aerobic plates showing fewer and smaller colonies.

Recently this scheme has been used in place of the culture of *B. subtilis* with good results: A quantity of sodium bicarbonate is placed in the Petri dish instead of the culture of *B. subtilis*, and at the same time a small glass tube containing 0.5 c.c. of 1 per cent. sulphuric acid is introduced so that when the plates are enclosed in the rubber band the two chemicals come into contact with each other. In this way sufficient carbon dioxide is liberated to produce a favorable tension.

ACETANILID ADDICTION: REPORT OF A CASE

WALTER H. NADLER, M.D., CHICAGO

This case is of clinical interest because of difficulty in diagnosis, aggravated by persistent denial of drug addiction and by malingery on the part of the patient.

REPORT OF CASE

History.—Miss X, graduate nurse, aged 26, was admitted to Wesley Memorial Hospital, Oct. 20, 1919, complaining of attacks of pain in the left hypochondrium, and of chills and fever. The pain was sharp, was transmitted to the back, and had recurred at intervals of about three weeks over a period of two years.

The course of her illness may be divided into two periods. The first period, from 1909 to 1915, consisted apparently of recurrent nose, throat and accessory sinus infections, and of anemia. During this time, tonsillectomy, turbinectomy, frontal sinus and left mastoid operations and drainage of an appendical abscess were performed. From 1915 to 1917 seems to have been an interval of fair health. The second period, from January, 1917, to the present time, is characterized by an entirely new group of symptoms. While the patient was still in bed, following an operation for the relief of apparent intestinal obstruction, cyanosis appeared, together with dyspnea on exertion. During convalescence from a second operation in the left mastoid region, she was seized with sudden, severe pain in the left upper abdomen, followed by fever. The urine was scant and dark colored. Cyanosis had been continuously present, though of variable intensity, since that time, and attacks of pain had recurred at rather regular intervals. For the relief of these symptoms, she submitted to an exploratory laparotomy and a kidney operation. Hospital records indicate that nothing abnormal was found and that no relief was afforded. In view of her occupation and the use of narcotics after her formidable series of operations, the patient was particularly interrogated in regard to the use of drugs. Any such habit was earnestly denied.

Examination.—The patient was intensely anemic and cyanotic, well nourished, apparently febrile and in great pain. The temperature was 103, the pulse and respirations

normal. The sclerotics and the oral mucous membranes were definitely icteric. Scars of the operations described were present. Marked tenderness and slight involuntary muscle defense in the left hypochondrium were noted. The liver and spleen were not palpable. Atrophic rhinitis with an accumulation of scabs was reported as a possible atrium of infection. Roentgen examination of the chest and gastrointestinal tract detected nothing abnormal save a limited excursion of the diaphragm, not due to adhesions, on the left side.

The urine, which was reddish brown, contained urobilin and much unidentified sediment, but appeared otherwise normal. The blood serum, also reddish brown, contained neither hemoglobin, bile salts nor pigment (Gmelin test); the Wassermann test was negative. Hemoglobin, in spite of the obviously anemic appearance, was estimated as from 95 to 100 per cent., probably because of the dark color of the serum. The red blood count was 3,180,000, and the white count, 11,800. Blood smears showed slight poikilocytosis and the general appearance of secondary anemia.

Clinical Course.—After the first week in the hospital, during which the afternoon temperature was recorded as from 103 to 104, it became apparent that the fever was simulated, the desired reading being produced through the aid of a hot water bag. At the same time, it was suggested by Dr. E. L. Ross that the clinical picture resembled that of acetanilid poisoning. Examination of the urine revealed the presence of acetanilid. Methemoglobin was not definitely detected in the blood serum.

Cyanosis gradually disappeared, but after five or six days reappeared. Use of the drug was again denied, but, confronted with her written order to a neighboring druggist, the patient surrendered acetylsalicylic acid and acetanilid tablets and admitted that she had taken six of the latter. Confession was finally made of the use of acetanilid, to 50 grains a day, over a period of nearly three years. Use of the drug antedated the appearance of pain in the left side; it was begun for the relief of headache and pain following her early operations. During the remaining weeks in the hospital, cyanosis and icterus disappeared; the urine and blood serum became of normal color, and no attacks of pain occurred. November 17, the patient was discharged from the hospital apparently well, except for persistent slight tenderness in the left hypochondrium.

The following day she applied for admission to the Cook County Hospital, complaining chiefly of pain, weakness and dyspnea. After a period of observation, anemia due to long continued hemolysis caused by numerous infections was suspected. Cyanosis was noted, November 23. Attacks of pain recurred at regular intervals; opiates were administered. Finally, malingery of fever and of certain other symptoms was detected. March 18, the patient was discharged, feeling well enough to go to work. All of the symptoms were explained on a neurotic basis except the cyanosis and slight icterus, which were considered probably due to acetanilid or a similar hemolytic drug.

COMMENT

The symptoms are those of the definite complex characteristic of chronic poisoning due to acetanilid, which is recognized as a habit-forming drug.

30 North Michigan Avenue.

Health Education.—During the year the necessity for health education among teachers has become more evident and courses on the care of mothers and children for use in colleges and normal schools are being prepared under the Federal Board of Vocational Education. Undoubtedly the revelation of our recent draft rejections, showing that at least one half the defects were such as might have been eliminated in childhood, has added impetus to the interest in the physical condition of our children; and the supplementary evidence of malnutrition and defects, as brought out by the weighing and measuring test, has helped focus public opinion on physical fitness.—*Am. J. Pub. Health* 9:350, 1919.

4. Martin, W. B.: *J. Path. & Bacteriol.* 15:76, 1911.

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SATURDAY, JUNE 19, 1920

HEMOGLOBIN AND CARBON DIOXID

The oxygen-carrying power of hemoglobin has been so widely studied and seems to be so well understood that little attention has been given to this pigment in relation to the movement of other gases in the body. Up to comparatively recent times, the transport of carbon dioxid in the organism has been attributed to the inorganic salts of the plasma, notably the bicarbonate. The rôle of other potential carriers, such as the proteins, has been emphasized more or less, while Buckmaster and Bayliss have even attributed the entire transport of carbon dioxid to hemoglobin directly. The problem of how the bound carbon dioxid could be released from the bicarbonate or protein combination in the lung has been a stumbling block in the theories, although the older workers recognized in the acid properties of hemoglobin a possibility of causing the unloading of carbon dioxid in the lung. As a matter of fact, hemoglobin, with its iso-electric point at p_H 6.7, is always acting as an acid under the conditions of hydrogen ion concentration in the blood. Some such acid liberating agent must be present in the lung, for the mere decrease of carbon dioxid tension from that of the tissues to that of the alveolar air would not cause the gas to pass off from the carbon dioxid-bicarbonate system of the plasma.

Parsons¹ has shown that the concentration of base in the blood is sufficient to account for all of the carbon dioxid to be carried as bicarbonate. In addition, he demonstrated that another weak acid must be present in the lung to aid in the unloading of the carbon dioxid by competing for the base of the bicarbonate. This acid, *a priori*, must be one whose salt with the base is decomposed by such concentrations of carbon dioxid as occur in the tissues. Parsons states that the proteins act as such an acid in the blood, and that the chief among these is hemoglobin.

L. J. Henderson,² elaborating somewhat on Parsons' work, has shown that in hemoglobin in the blood

we have the unusual case of an acid which, under stress of circumstance, alters its degree of dissociation. Obviously, the circumstance is the presence of oxygen. In the lung, hemoglobin which, as stated above, acts as an acid in the blood, combines with oxygen, and immediately its ionization is increased and its power to bind base is accordingly increased. This base is at hand in the bicarbonate, and on combining with the oxyhemoglobin it leaves the carbon dioxid free to be blown off. In the tissues the oxygen leaves the base-oxyhemoglobin combination, and the hemoglobin, returning to its feeble degree of ionization, loses the base, which is then free to help carry the carbon dioxid back to the lung as bicarbonate. Henderson also states that the other proteins as well as the phosphates take part in transferring base from the lung to the tissue.

Parsons³ adds that the variation of hydrogen ion concentration under the influence of carbon dioxid, as it occurs in the blood, requires the presence of a slightly ionized acid, such as hemoglobin. In addition to its other functions, hemoglobin thus functions as a buffer. It appears, therefore, that from the latest theoretical considerations of well-known data the hemoglobin of the blood not only acts as a carrier of oxygen throughout the organism, but also plays an important part in the transport and release of carbon dioxid in the body.

ORANGE JUICE CONSIDERED IN A NEW LIGHT

It is recognized by pediatricians that artificially fed infants thrive better if they receive some addition to cow's milk, particularly when the latter is pasteurized or sterilized. One reason for this, now understood, is that many of the artificial food mixtures are likely to be qualitatively incapable of averting scurvy in young children, so that some added antiscorbutic must be provided. For this purpose orange juice has attained a well deserved popularity. Other fruit juices have likewise been used with success as antiscorbutics; and latterly the juices from certain vegetables have been demonstrated to have a similarly beneficial influence in the dietary of the young. Owing to the price and occasional scarcity of oranges, notably during the war, special efforts were made, both here and abroad, to secure suitable substitute antiscorbutics for infant feeding. The use of the tomato, first urged by A. F. Hess of New York, has been particularly promising owing to the fact that, in contrast with some other antiscorbutics, this readily available vegetable can be dried or canned without losing its potency in antiscorbutic vitamin, and it can be administered efficiently in various ways, including intravenous injection of the juice.

1. Parsons, T. R.: The Reaction and Carbon Dioxide Carrying Power of Blood—A Mathematical Treatment, *J. Physiol.* **53**: 42 (Sept.) 1919.

2. Henderson, L. J.: The Equilibrium Between Carbon Dioxide and Oxygen in the Blood, *J. Biol. Chem.* **41**: 401 (March) 1920.

3. Parsons, T. R.: The Reaction and Carbon Dioxide Carrying Power of the Blood—A Mathematical Treatment, *J. Physiol.* **53**: 349 (Feb.) 1920.

From the recent investigations of Osborne and Mendel it appears that the tomato has even further properties to commend its use during the period of growth; for it is rich in the water-soluble antineuritic vitamin,¹ and likewise in the fat-soluble vitamin² (fat-soluble A) characteristic of milk fat and egg fat. Such observations, along with numerous others of recent date indicating how widespread is the fat-soluble vitamin in vegetable products,³ show that this important food factor need not be sought solely in foods known to be rich in fats. As Osborne and Mendel have remarked, the newer studies indicating the richness of many types of plant tissues in those nutritive properties termed vitamins place the dietary importance of the green vegetables in an entirely new light. It emphasizes their use to supplement the refined foods of the modern food industry which furnish products rich in proteins, fats and carbohydrates but in many cases comparatively deficient in the vitamins. The tomato is striking in exhibiting all the now recognized vitamin potencies; the antineuritic, antiscorbutic and the fat-soluble vitamin. Little wonder, then, that it has found an important place in the dietary.

Orange juice has also now been shown to be possessed of something more than attractive flavor and antiscorbutic virtues. The same observers⁴ have demonstrated the presence of the water-soluble B, the antineuritic vitamin, in both the juice and the inner peel of the orange—a finding promptly corroborated by Byfield and Daniels⁵ at the University of Iowa. Evidently, therefore, when orange juice or tomato is added to the food of an infant, something more than an antiscorbutic is furnished. The Iowa pediatricians have noted that in every case when the antiscorbutic dose of orange juice, 15 c.c., was increased to 45 c.c. a day to infants whose weight had remained stationary for a number of days, there was a marked stimulation of growth. A mere increase of food intake (calories) of itself had no such influence on the rate of gain.

Orange juice from which the antineuritic vitamin (water-soluble B) is removed by adsorption⁶ does not thus stimulate growth, although it still has antiscorbutic properties. This answers the assertion that the antiscorbutic vitamin may be responsible for promotion of growth. In feeding orange juice, provided the quantity is not too small, one is administering at

least two highly beneficial adjuvants to the diet. This fact, and the growing practice of early enlarging the diet of milk fed infants by the use of fruit juices, etc., is significant further in view of the recent demonstration by Osborne and Mendel⁷ that cow's milk, from a comparative standpoint, is not rich in water-soluble vitamin. Osborne and Mendel have pointed out how recent studies of the antiscorbutic value of cow's milk⁸ have indicated that on this score it must be classed as less valuable than many of the raw fruits and vegetables. Whereas quantities of the latter—less than 10 gm. daily—will prevent scurvy in guinea-pigs on a diet otherwise devoid of antiscorbutic material, from 100 to 150 c.c. daily of raw cow's milk are required for this species, according to Barnes and Hume, while monkeys require larger quantities. Similarly, relatively large quantities of milk are required to produce the increased intake of food and improved rate of growth which are readily secured by very small quantities of many green vegetables.

IMMUNIZATION AGAINST PLAGUE: AN ARGUMENT FOR CONTROLLED EXPERIMENT

The reiterated plea of scientists for accurately controlled experiments in the determination of the value of measures adopted against disease may seem to some physicians to be somewhat too emphatic. Again and again, however, the disinterested scientist is compelled to protest against the use of statistics and experiments by those commercially interested and by overenthusiastic advocates of the prophylactic use of certain products. How difficult it really is to arrive at definite conclusions relative to the efficacy of many such preventive measures is pointed out by Flu,⁹ in a recent discussion of experiments on immunization against plague. The reports concerning the results of vaccination against this disease have been contradictory. Haffkine believed that he had demonstrated statistically that his vaccine was effectual in creating immunity. Bitter and other observers, analyzing the work of Haffkine, concluded that the immunity acquired was not of high degree and that it did not last more than six months. That opinions based on statistics may not be reliable, Flu illustrates by the recital of an incident occurring in the Division of Malang in Java:

During the epidemic in the division of Malang (Java), when thousands of plague cases were occurring monthly among the inhabitants of kampongs and desa's, only one single case of plague occurred among the soldiers of the garrison in the capital Malang, being a thousand strong, in the four years the plague was raging there. This one case, was a

1. Osborne, T. B., and Mendel, L. B.: The Vitamines in Green Foods, *J. Biol. Chem.* **37**: 187 (Jan.) 1919; Nutritive Factors in Plant Tissues, III, Further Observation on the Distribution of Water-Soluble Vitamine, *ibid.* **41**: 451 (March) 1920.

2. Osborne, T. B., and Mendel, L. B.: Nutritive Factors in Plant Tissues, IV, Fat-Soluble Vitamine, *J. Biol. Chem.* **41**: 549 (April) 1920.

3. Osborne and Mendel (Footnote 2). Steenboek, H., and Gross, E. G.: Fat Soluble Vitamine, IV, The Fat-Soluble Vitamine Content of Green Plant Tissues Together with Some Observations on Their Water-Soluble Vitamine Content, *J. Biol. Chem.* **41**: 149 (Feb.) 1920. Steenboek, H., and Boutwell, P. W.: Fat-Soluble Vitamine, V, Thermostability of the Fat-Soluble Vitamine in Plant Materials, *ibid.*, p. 163.

4. Osborne, T. B., and Mendel, L. B.: Do Fruits Contain Water-Soluble Vitamine? *Proc. Soc. Exper. Biol. & Med.* **17**: 46 (Nov.) 1919.

5. Byfield, A. H., and Daniels, A. L.: The Antineuritic and Growth-Stimulating Properties of Orange Juice, *Am. J. Dis. Child.* **19**: 349 (May) 1920.

6. Seidell, A.: *Pub. Health Rep.* **31**: 364 (Feb. 18) 1916; Harden, A., and Zilva, S. S.: *Biochem. J.* **12**: 93 (June) 1918.

7. Osborne, T. B., and Mendel, L. B.: Milk as a Source of Water-Soluble Vitamine, II, *J. Biol. Chem.* **41**: 515 (April) 1920.

8. Cohen, B., and Mendel, L. B.: *J. Biol. Chem.* **35**: 425 (Sept.) 1918. Chick, H.; Hume, E. M., and Skelton, R. F.: *Biochem. J.* **12**: 131, 1918; *Lancet* **1**: 1 (Jan. 5) 1918. Barnes, R. E., and Hume, E. M.: *Lancet* **2**: 323 (Aug. 23) 1919.

9. Flu, P. C.: *Experimental Immunization Against Plague*, Mededeel. v. d. Burgerl. Geneesk. Dienst in Nederlandsch Indie **8**: 18, 1919.

man with a bubo in the neck who had not been infected at the barracks, as could be ascertained almost absolutely. If at the beginning of the epidemic the garrison in Malang had been vaccinated against plague, and if the results of that measure had been judged by comparison between the numbers of plague cases among the vaccinated soldiers and among the inhabitants of Malang, then this single isolated case among the former compared to the many thousands among the latter, apparently would prove for the advantage of the vaccination. This conclusion, however, would not be admissible for a local investigation would show that the soldiers in Malang are living under much better and more hygienic circumstances than the best situated inhabitants of the kampong. The fact that the soldiers were not attacked would prove being due not to the vaccination but to the favorable conditions in the barracks, that exclude a tight contact of man and rat.¹⁰

Flu is able to recite other instances in which incomplete reports of plague epidemics might well be cited as strong evidence of the efficacy of the various measures employed in prophylaxis. One example is an epidemic that occurred in the *dessa* (village) of Sempal Wadak in Malang, a place of about 1,700 inhabitants, in which a large sugar factory is situated. At the time of the epidemic, there were about fifty European assistants, and about 300 native laborers employed there:

In the *dessa* the plague was raging most heavily, 80 cases occurring there during three months. Suppose, that the Europeans had had themselves vaccinated against plague with *f. i.* [for instance] HAFKINE vaccine, and that by their influence they had persuaded the natives to have done the same. Now, if only was [it were] mentioned how many people were vaccinated at Sempal Wadak and how many not, and if further was said that among the Europeans only one single case of plague occurred, while among the native labourers of the factory two cases occurred against 80 cases among the not vaccinated inhabitants of the *dessa*, it would wrongly appear as if the vaccination had been of excellent service. Really, these figures would not prove anything. For the Europeans were living in houses that were well protected against visits of rats and were built ratnestproof. Also the labourers of the factory came up to the requirements ordered by the house-improvement service. The only European infected had had to stay in a village-house, his own house being repaired: during his stay in the not improved village-house he was infected.

Because of such instances as these, epidemiologists have begun to be skeptical concerning statistics that are cited without the presentation of all the details necessary for an accurate judgment. The many factors entering into the causation of disease: age, sex, race, social status, occupation, residence, hygiene, house conditions—all have a definite influence. It is only by careful and repeated consideration and the employment of numerous controls that the relative importance of each factor can be estimated in any degree approaching accuracy.

As a result of his consideration of the subject, Flu determined that the only experiments on plague that can be considered of any real value are those on animals, since it is impossible to secure perfectly controlled conditions in such work on man. Experiments of this kind he carried out in great detail, using

large numbers of animals. Of all the vaccines examined, only the aqueous extracts were found to have any definite immunizing power. However, as only a low percentage of immunized animals survived injections with large doses of bacteria, he concludes that the expectation that in the course of time some method of immunization against plague may be found which will be effective in 100 per cent. or even 90 per cent. of the cases treated is at present absolutely in vain. That this is the case is supported by the fact that even a natural infection of this disease is not capable of conferring definite immunity.

Current Comment

REPUBLICAN PLATFORM AND HEALTH AND EDUCATION

In the General News column¹ appears the full text of the plank on education and health adopted last week by the Republican convention. The association of these two subjects in a single section is significant of the increasing realization of the close relation and mutual interdependence of health and education. Good health either of the individual or of the community is largely a matter of education. All true education results in better health. In the joint development of these closely allied activities there is room and need for the specialist and expert in both fields. Possibly most of our readers will be especially interested in the paragraph that points out that the health activities of the federal government are scattered through numerous departments and bureaus, resulting in inefficiency, duplication and extravagance. It very wisely limits its recommendations to greater centralization of federal functions and better coordination of federal, state and local agencies, without attempting to discuss the exact method by which this result is to be secured. The reorganization and extension of federal public health work has been under discussion for half a century. While all are agreed as to the desirability of such expansion, there is no unanimity as to the exact method by which it should be accomplished or the form it should take. These questions can be answered only after careful study of existing conditions in order to determine what the federal government is now doing for public health, how much is being expended and what is being accomplished, what are the public health functions which belong to the federal government, what are those which belong to the state, and how coordination can be best effected. These are not questions for either partisan or sectarian controversy but rather for patient study and constructive planning. Whatever may be our differences of opinion as to the peace treaty with Germany, the League of Nations or the high cost of living, all good citizens are agreed as to the importance of both education and health. It is to be hoped that the Democratic convention at San Francisco will make an equally broad and constructive declaration on these two subjects.

10. The periodical from which this quotation is taken is published in Java; each page contains two parallel columns, one Dutch, the other English. The English is not always strictly grammatical, as will be noted from the portions cited.

1. Page 1724, this issue.

PUBLIC HEALTH POETRY

Poets, we are told, are born, not made. But every one has a sense of rhyme and rhythm. Rhyme and rhythm aid memory—they have “catchy” qualities. As a result we have not only spring as the open season for poets but also a year round open season for the public health poet. He takes a simple hygienic slogan, such as “Flies breed disease—swat ‘em,” and turns out poetry of a practical sort:

“The fly, also, is a nuisance, very small,
The greatest pest, I’m sure, of them all.
In the daytime it is humming, humming though it
has no song,
If the city is kept clean, it will disappear ere long.”

See how easy it is to write “poetry.” One merely measures off so many centimeters of line and puts a big letter on the front. Let us suppose it is desired to inform a nervous public that mosquitoes carry malaria. Does the public health poet hesitate?

“Did you know mosquitoes bring
Other things besides their sting?
Sometimes when they bite, they leave you
With malaria or with fever.
Dry up all the stagnant places—
Breeding places of all their races;
Keep your screen doors closed, and fling
Defiance to Sir Skeeter’s sting!
Let your slogan through the summer
Be to kill this wicked hummer.”

Simple, isn’t it? Yet it gets there all the same. But the subjects have been too broad, too indelicate! Now for something really practical and esthetic:

Oh! blessings on the garbage man:
He comes around and gets our can;
He cleans it up quite nice and neat—
Then it leaks out of his wagon and is scattered all
over the blooming street.

ANTHRAX AND THE SHAVING BRUSH

Previous to 1914, anthrax infection in nearly all instances occurred only among those who came in contact with cattle, hides, meat or wool; but soon after the outbreak of the war, numerous cases appeared among persons who had not been associated with any of the usual known sources of the disease. From time to time, outbreaks of anthrax developed among soldiers of both England and the United States, and careful investigation revealed that nearly all cases developed from shaving wounds. It was later found that certain types of shaving brushes harbored virulent anthrax bacilli. Shaving brushes used in this country are for the most part made from badger hair, horsehair or pig bristles, though much of the so-called badger hair is an imitation made by treating white hair or bristles. Until the war, nearly all the horsehair and pig bristles came from Russia, China and Japan, after being cleaned and disinfected in France or Germany. But after 1914 they were shipped directly to this country by the Pacific route. With the advent of the war, the unusual demands on the shaving brush industry necessitated such a rapid output that some manufacturers, through ignorance, carelessness or too great confidence in the certificates of disinfection, made no effort to

insure the safety of the material used. The horsehair from China is notoriously dirty, very likely anthrax-infected, and shipped with “no indication of manner or methods of treatment.”¹ Domestic hair dealers, principally in Chicago, wash the hair with soap or lye in warm water, but there is no established method to make the hair safe from anthrax. A number of these cleansing processes were investigated;² some were found to be thoroughly satisfactory, others certainly offered no guarantee of safety, and there is no doubt that there are now on the market many brushes potentially dangerous, most of these being of the cheaper grades. At present the methods of disinfection used by the manufacturers of shaving brushes are not standardized, and many are inefficient. In England from June, 1915, to October, 1916, fourteen cases³ of anthrax infection are known to have originated from shaving brushes. In nearly all instances a recently purchased brush had been used a few days before the appearance of the malignant pustule. Virulent anthrax bacilli were found on the patient’s brush and on others obtained from the same lot. A rather low human susceptibility was indicated by the fact that only one case is known to have developed from a lot of 10,000 brushes, though anthrax bacilli were found in all samples examined. In this country, twenty-four cases of anthrax from shaving brush infection³ have been recorded; in six instances the bacilli were isolated from brushes used. It is of interest to note that several cases of meningitis were encountered, anthrax bacilli being isolated from bloody spinal fluid. In three instances, no evidence of an external lesion was found. In thirty-three cases of shaving brush anthrax, twenty-one, or 64 per cent., of the patients died;⁴ this high mortality may be due to the site of infection, wounds of the neck being more serious than elsewhere. By the use of proper methods, anthrax infection from shaving brushes is entirely and easily preventable. Systematic inspection and definite requirements of sterilization will eliminate the shaving brush as a source of anthrax infection. Boiling, exposure to streaming steam, or soaking the material for four hours in 10 per cent. dilution of liquor formaldehydi at 110 F. are said to be reliable methods of disinfection.

1. An Investigation of the Shaving Brush Industry, with Special Reference to Anthrax, Pub. Health. Rep. **34**:994 (May 9) 1919.

2. Anthrax from Shaving Brushes, Pub. Health Rep. **33**:115 (July 12) 1918. Coutts, F. H.: Reports, Local Govt. Board of Public Health and Medical Subjects, N. S. 112, 1917.

3. Carey, H. W.: Anthrax from the Shaving Brush and Primary Anthrax Meningitis, Am. J. M. Sc. **159**:742 (May) 1920.

4. Footnote 2, first reference.

Increase in Automobile Accidents.—According to the annual report of the National Highways Protective Association, the total toll of life taken by motor cars throughout New York State during 1918 was 969 persons. The death list in New York City was 528, as against 417 for 1917. Of 441 fatal accidents that occurred outside the metropolitan area, 416 occurred between April 1 and December 31, and only twenty-five between January 1 and March 31. The president of the National Highways Protective Association recommends a law for New York State similar to that in Massachusetts, Connecticut, New Jersey and Maryland, which in New Jersey has been responsible for cutting down the number of fatal accidents from 245 in 1917 to 197 last year.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Graduate Courses in Hygiene.—The University of Alabama is establishing a department of hygiene in which graduate students will be prepared to teach hygiene and health conservation in colleges, normal schools or other like institutions. Satisfactory completion of the course will qualify for the degree of Bachelor of Science in Hygiene. There is immediate need of such graduates in the school health activities of the state. Dr. Hiram Byrd, formerly director of the department of hygiene in the University of Mississippi, is head of the new department.

ARKANSAS

Personal.—Dr. Keith E. Hudson, Dahome, has announced his retirement from the practice of medicine.—Dr. Fergus O. Mahoney has been elected president, and Dr. H. H. Niehuss, secretary, of the Eldorado Board of Health.

District Society Organized.—Greenwood District Medical Society was recently organized, with an initial membership of seventeen, and the following officers were elected: president, Dr. George G. Woods, Huntington; vice president, Dr. Bert L. Ware, Greenwood, and secretary-treasurer, Dr. Charles W. Hall, Greenwood.

State Isolation Hospital Planned.—The leaders of the public health movement in Arkansas are planning to build and equip a state isolation hospital and venereal disease clinic which will not only provide treatment, isolation and detention for commercial prostitutes in all places of the state where there are no clinical facilities or means of isolation, but will also give treatment in all cases of venereal infections in persons committed to the girl's industrial school and to the woman's reformatory.

State Society Election.—At the annual meeting of the Arkansas Medical Society held at Eureka Springs, June 8 and 9, under the presidency of Dr. George S. Brown, Conway, the following officers were elected: president, Dr. Gus A. Warren, Black Rock; vice presidents, Drs. Robert Howard Huntington, Eureka Springs, Andrew J. Clingan, Lockesburg, and Thad Cothorn, Jonesboro; secretary and editor of the *Journal of the Arkansas Medical Society*, Dr. William R. Bathurst, Little Rock (reelected); treasurer, Dr. Henry H. Kirby, Little Rock. Hot Springs was selected as the place of meeting for 1921.

FLORIDA

Personal.—Dr. Lorin A. Greene, Greenville, has been appointed superintendent of the new Florida Colony for Feeble-minded and Epileptics.—Dr. William J. Buck, Jacksonville, has resigned as assistant state health officer.

New State Officers.—At the forty-seventh annual meeting of the Florida Medical Association held in Daytona, May 12 and 13, under the presidency of Dr. Ralph N. Green, Chattahoochee, the following officers were elected: president, Dr. William E. Ross, Jacksonville; vice presidents, Drs. Clyde C. Bohannon, Daytona, George A. Davis, De Land, and James H. Fellows, Pensacola, and secretary-treasurer, Dr. Graham E. Henson, Jacksonville. Pensacola was selected as the next place of meeting.

Venereal Disease Clinic Established.—Seminole and Gadsden counties have joined hands with the state board of health, in its efforts to establish a venereal disease clinic in each of the counties of the state. The Seminole County Clinic is in operation at Sanford, and the Gadsden County Clinic at Quincy. Ten clinics are now in operation, the stationary clinics being located at Key West, Miami, Tampa, Arcadia, West Palm Beach, Jacksonville, Pensacola, Lake City and St. Petersburg in addition to an ambulatory clinic under the charge of Dr. John C. Bertram, Jacksonville.

Possible Deaths from Bubonic Plague.—The state laboratory, on June 13, announced that the death of George Gardina in Pensacola, June 11, was undoubtedly due to bubonic plague and that steps had been taken for an immediate cleanup campaign. Health officials of the state have determined on

a thorough extermination of rats.—The officials of the Public Health Service in Washington, D. C., say that it has not yet been definitely established that a case of bubonic plague had developed in Pensacola.—A second case of bubonic plague was officially reported to the authorities of Pensacola, June 15. The patient is an ice wagon driver, and his duties took him through the section of the city where the first case was discovered.

ILLINOIS

Chicago

New Officers.—Dr. John S. Nagel was elected president-elect, and Dr. Hugh N. MacKechnie, secretary of the Chicago Medical Society at the annual election, June 16.

Northwestern Alumni Meeting.—At the annual meeting of the Northwestern University Alumni Association held in Chicago, June 14, the following officers were elected: president, Dr. Franklin H. Martin, '80; vice presidents, Drs. John F. Williams, '65, and Robert Blessing, '20; secretary-treasurer, Dr. James G. Carr, '02, and necrologist, Dr. Samuel C. Stanton, '92 (reelected).

Guthrie Memorial.—At the meeting of the council of the Chicago Medical Society, June 8, a resolution was adopted providing that a proper inscription setting forth the facts of Dr. Samuel Guthrie's discovery of chloroform be placed on the glacial boulder at the entrance of Washington Park, at Garfield Boulevard, known as the Guthrie Stone. This resolution was referred to the committee appointed last year regarding the Guthrie memorial.

University of Illinois Alumni Meeting.—The annual meeting of the Alumni Association of the College of Medicine of the University of Illinois was held in Chicago, June 5, and the following officers were elected: president, Dr. Karl Meyer, '08; president-elect, Dr. Louis J. Hammers, '02; vice presidents, Drs. William H. Bradley, '10, Charles H. Hallberg, '11, and William B. West, '06; secretary and treasurer, Dr. John M. Krasa, '13 (reelected), and necrologist, Dr. O. McWilliams, '99.

MAINE

District Health Officers' Ranks Completed.—By the appointment of Dr. Adin L. Smith, Machias, as district health officer for Hancock and Washington counties, the roll of district health officers of Maine is completed, making a total of eight for the state.

Public Health Association Reorganized.—The work of the Maine Anti-Tuberculosis Association has been transferred to the newly organized Maine Public Health Association, which at its recent meeting in Bangor elected the following officers: president, Dr. Elmer D. Merrill, Foxcroft; vice presidents, Mr. E. M. Hamlin, Milo, Dr. Sylvester J. Beach, Augusta, and Mr. Henry Richards, Gardiner; executive secretary, Mr. W. A. Harris; secretary, Mrs. Howard Ives, Portland, and treasurer, Mr. Ralph Whittier, Bangor. The reorganization was undertaken for the purpose of entering a broader line of work than was possible under the old name and by-laws. Now prenatal care, child welfare and venereal diseases as well as tuberculosis work will be included in its program. One aim in the reorganization is to unify under one head all private health organizations of the state as rapidly as possible and to work more closely with the state department of health, school department, department of charities and corrections and other departments.

MARYLAND

Patients Ordered to Fort McHenry.—Dr. Charles W. Vogel, in charge of the United State Marine Hospital, Baltimore, has received orders from the Surgeon-General, U. S. Public Health Service, to transfer all patients and personnel to the public health hospital at Fort McHenry. The hospital at Fort McHenry is not ready to receive patients, but every effort is being made to put it in order and at the latest it is expected to be ready by July 15. The future fate of the Marine Hospital has not yet been determined.

Gift to Johns Hopkins.—A gift of \$400,000 has been made to the General Education Board of the Rockefeller Foundation Fund for the establishment of a department of pathology at the Johns Hopkins Medical School, and is the second appropriation of that amount to the school in less than four months. An appropriation of like amount from the same source was announced for the establishment of a women's

clinic at the hospital several months ago. The present fund is given contingent on the university's raising an additional \$200,000 toward a \$600,000 fund. The present gift is to be used in rebuilding the pathologic department which was destroyed by fire last January. Work on the new pathologic department will be started as soon as the additional \$200,000 is raised by the university.

Infectious Hospital Planned for Baltimore.—An ordinance submitting to the voters of Baltimore in November a loan of \$750,000 for an infectious disease hospital has been introduced in the city council. The loan was authorized by the legislature of 1914, but was pigeon-holed by the former administration. It was resurrected by Dr. C. Hampson Jones, health commissioner, who considers the hospital one of the pressing needs of the city. It is estimated that the municipal hospital will cost approximately \$1,000,000 to start with. The city is soon to receive \$177,000 from the federal government for the quarantine station. This added to the \$750,000 from the loan, if approved, will give the health department sufficient money for its needs. It is understood that the medical fraternity is solidly behind the hospital loan and that their influence will aid the public improvement loan materially.

MASSACHUSETTS

New State Officers.—At the one hundred and thirty-ninth annual meeting of the Massachusetts Medical Society held at the Boston Medical Library, June 8 and 9, Dr. Alfred Worcester, Boston, was elected president; Dr. Frederick E. Jones, Quincy, vice president; Dr. Walter L. Burrage, Boston, secretary (reelected); Dr. Arthur K. Stone, Framingham Center, treasurer; Dr. Edwin H. Brigham, Brookline, librarian.

Physicians Oppose Bill for State Maternity Aid.—In a circular letter to members of the legislature, four medical societies in the state, namely, the Worcester North District, Worcester South District, Franklin District and Fitchburg medical societies declare their opposition to the passage of a bill to provide maternity benefits for needy expectant mothers. This proposed legislation is considered as paternalistic and class legislation and as an infringement on the rights of individual citizenship.

MISSISSIPPI

Home for Feeble-minded.—Meridian is making strenuous efforts to obtain the location of the proposed state colony for the feeble-minded, to secure which, a donation of \$100,000 and a 1,000 acre site are essential.

Typhoid Vaccine Available.—Dr. Clyde R. Stingily, Jackson, bacteriologist of the state board of health, announces that he has now a sufficient quantity of typhoid vaccine for 30,000 cases and is ready to ship this to physicians of the state free of all expense.

NEBRASKA

Hospital Transferred.—The new Lord Lister Hospital, Omaha, has been taken over by the Danish Hospital Association. The institution will open this month and will have accommodation for 150 patients.

Alumni Meeting.—The annual meeting of the John A. Creighton Medical College Alumni Association was held, June 2 to 4. During these days, clinics were held at St. Joseph's Hospital, and on June 4, Dr. Henry S. Plummer of the Mayo Clinic delivered an address on "The Function of the Thyroid Gland."

Graduate Clinical Week.—A graduate clinical week was held, June 7 to 13, at the University of Nebraska, College of Medicine, Omaha. Emphasis was placed on social diseases as subjects for study and demonstration. Daily ward walks through the university hospital, and laboratory work in clinical pathology were some of the practical features of the week.

NEW YORK

Encephalitis Made Reportable.—Lethargic encephalitis has been added to the list of reportable communicable diseases by action of the public health council of the state department of health.

Tuberculosis Lecture Outline.—An outline of a lecture on tuberculosis for use before lay audiences in connection with the set of lantern slides belonging to the state department of health is now available and may be obtained by writing to the supervisor of exhibits, state department of health, Albany.

Health Clinics.—The New York State Department of Health in cooperation with the state department of education, state hospital commission, state committee for mental defectives, tuberculosis committee of the state charity aid association, and Atlantic Division of the American Red Cross inaugurated a series of group medical consultation clinics held at the Village Hall of Geneseo, June 8, 9 and 10.—At the clinic held in Rome, May 12, by Dr. Sydney F. Blanchet, Saranac Lake, twenty-five persons were examined for tuberculosis.

New York City

Personal.—Dr. George D. Wolf has been appointed adjunct professor of otology and rhinology in the Bronx Hospital and Dispensary.

Guarding Against Plague.—Owing to the outbreak of bubonic plague in Vera Cruz, the health authorities of the city are acting in cooperation with Dr. Leland E. Cofer, health officer of the port, in an effort to strengthen the lines of defense against the importation of the disease. Cyanid is being used for fumigation of all vessels from any suspected port. A careful sanitary inspection is being made of all city piers.

Milk Charity Transfer.—Nathan Strauss, before sailing for Palestine where he expects to devote himself to relief work, on June 11, made a statement to the mothers of the city of New York stating that he felt that his task of furnishing pasteurized milk to the babies of New York was finished, and that his milk stations would be discontinued after September 1. The work will be continued during the summer, he says, in order to give mothers the opportunity to visit his laboratories and learn methods for the home modification of milk. He has offered to turn over to the city his milk laboratory complete, with all its equipment and motor trucks, provided the city supplies funds to maintain and expand the work.

Tuberculosis Activities.—The first public meeting of the New York Tuberculosis Association was held, May 18, Dr. James Alexander Miller, presiding. Dr. Miller told of the work for the vocational training of soldiers and sailors who have now been transferred to civilian control; Mr. Fred M. Stein explained in full the plans of the workshop to be established in Long Island City; Mr. T. B. Kidner of the National Tuberculosis Association spoke on the "Rehabilitation of Consumptives to Industry"; Dr. C. Floyd Haviland, Middletown, Conn., delivered an address on "Occupation and Treatment in Convalescence," and Dr. John S. Billings presented the plan of the association for the reconstruction of the consumptive. This includes an application bureau as a part of its information bureau, and an employment bureau. A group of the larger sanatoriums in the vicinity of New York City have agreed to cooperate with the association by establishing schools for the vocational training, especially of service men.

OHIO

New State Officers.—At the seventy-fourth annual meeting of the Ohio State Medical Association held in Toledo, June 1 to 3, Dr. Charles Lukens, Toledo, president-elect, was installed as president, and the following officers were elected: president-elect, Dr. Wells Teachnor, Columbus; president emeritus for one year, Dr. John C. Reeve, Dayton, the oldest member of the association (this position is honorary and is granted in recognition of unusually distinguished ability or service). Columbus was selected as the next place of meeting.

New Sanitary Code.—The Ohio Sanitary Code was submitted to the public health council of the state department of health for approval, May 14, and this code will become effective July 1, 1920, on which date all rules and regulations formerly adopted by the state board of health or public health council are repealed. The new code consists of regulations regarding the reporting of communicable disease, naming the ailment according to its classification as a dangerous disease and stating who is responsible for the report. It includes provisions for notification of such diseases as are found in institutions and for the reporting of deaths from notifiable diseases to the state board of health. It embodies the necessary measures for the prevention and control of communicable diseases, including quarantine, isolation and disinfection. Provisions are also included for the transportation of the dead, and for the inspection and examination of school teachers, janitors and children. Essential rules have been drawn up for the operation of tuberculosis and maternity hospitals, including provisions for the record of the patients, advice as to equipment and medical supervision, and regulations as to examination and treatment.

The new code also has a section dealing with the maintenance of sanitary control of the state park sanitary district, the construction of sewage disposal plants, removal of garbage and the protection of food from flies and dust.

OREGON

Alumni Meeting.—The eighth annual meeting of the Alumni Association of the Medical School of the University of Oregon was held in Portland, May 31 to June 2. This was known as the MacKenzie Memorial meeting, and the program consisted of clinics at five hospitals and the reading of papers at the afternoon sessions. Dr. Ludvig Hektoen, Chicago, delivered the Noble Wiley Jones lectures under the auspices of the medical school on Monday and Wednesday evenings, on the subjects, "Phases of Streptococcic Infection," and "Old and New Knowledge of Immunity." On Tuesday, the annual banquet and business meeting was held, and the following officers were elected: president, Dr. Otis F. Akin, '09, Portland; vice presidents, Dr. George A. Cathey, '09, Portland; Carl J. Hoffman, '02, Woodland, Wash.; Charles L. Rybke, '09, Portland, and Christian E. Stafrin, '11, Portland; secretary, Dr. Adalbert G. Bettman, '07, Portland, and treasurer, Dr. Kitty Plummer Gray, '00, Portland.

PENNSYLVANIA

Ambulance Men Meet.—More than 500 registered for the first U. S. A. A. C. reunion of soldiers of the United States Ambulance Corps, gathered at Camp Crane on the Allentown fair grounds, June 8.

Physicians' Golf Club Organized.—The Aesculapius Golf Club has been organized at Pittsburgh with Dr. Lee V. L. Brown, Castle Shannon, president; Dr. Jesse S. Demuth, Pittsburgh, vice president, and Dr. Edward J. McCague, Pittsburgh, secretary-treasurer.

Death of Noted Chemist.—Dr. Leonard Merritt Liddle, aged 36; senior industrial fellow of the Mellon Institute of Research, Pittsburgh, since 1912, and from 1914 to 1916 head of the biochemistry department of the University of Pittsburgh School of Medicine; president of the Robert Kennedy Duncan Club; a chemist of marked ability in research; died, February 21.

Philadelphia

Physical Directors Visit Colleges.—Members of the Middle Atlantic Physical Directors' Society, in session in Philadelphia, visited Jefferson and Hahnemann medical school, June 11, and heard lectures on medical problems relating to physical education.

Personal.—Dr. Miriam Warner has been appointed physician in the bureau of charities and corrections by Director Ernest L. Tustin of the department of public welfare, and will have charge of treatment of all women at the Home for the Indigent at Holmesburg and the House of Correction. —Dr. John E. B. Buckenham, superintendent of the City Hospital for Contagious Diseases since 1914, has resigned to become librarian of the Masonic Grand Lodge of Pennsylvania.

CANADA

Doctors Increase Fees.—Hamilton, Ont., physicians are the latest to increase their fees. Hereafter daily calls will be \$3; emergency calls and night calls after 6 p. m., \$5; office visits, \$1.50, and obstetric cases, \$25.

Measles and Smallpox in Ontario.—The epidemic of measles in Ontario is growing. From a total of 3,768 cases of communicable diseases reported during May, the cases of measles numbered 2,264 with forty-five deaths. Two hundred and ninety cases of smallpox were reported with no deaths.

Director-General Resigns.—Major-Gen. John Taylor Fotheringham, C. M. G., who has for the past few years been director-general of Canadian Military Medical Services, with distinguished service overseas, has resigned and has left Ottawa to take up practice in his old home in Toronto.

Dominion Association Meeting.—The fifty-first annual meeting of the Canadian Medical Association will be held in Vancouver, B. C., June 22 to 25, under the presidency of Dr. Robert E. McKechnie, Vancouver. The address in medicine will be delivered by Dr. Charles Lyman Greene, St. Paul, Minn., on "Certain Fundamental Errors in the Diagnosis of Myocardial Insufficiency"; that in surgery, by Dr. Edward W. Archibald, Montreal, on "The Surgical Treatment of Ulcerated Intestinal Tuberculosis, as Occurring Chiefly in the Course of Pulmonary Tuberculosis"; that in orthopedics, by Dr. Virgil

P. Gibney, New York City, on "Development and Scope of Orthopedic Surgery," and that in public health, by Dr. John Amyot, Ottawa, Ont., on "The Federal Government and Public Health." Symposia will also be held on goiter, pulmonary abscess and the stomach and duodenum.

GENERAL

New Officers for Examining Board Federation.—At the annual meeting of the New England Federation of Medical Examiners held in Boston, June 1, Dr. Charles Duncan, Concord, N. H., was elected president; Dr. Michael F. Fallon, Worcester, Mass., vice president, and Dr. Samuel H. Calderwood, Boston, secretary.

Roentgenologists to Meet.—The American Roentgen-Ray Society will hold its twenty-first annual meeting in Rochester and Minneapolis, Minn., September 14 to 17, under the presidency of Dr. James T. Case, Battle Creek, Mich. The sessions of the first day of the meeting will be in Rochester and of the following three days in Minneapolis.

International Sanitary Conference.—At a recent meeting of the committee on arrangements for the Sixth International Sanitary Conference to be held in Montevideo, Uruguay, December 12 to 20, plans for the conference were formulated, and it was recommended that invitations be extended to all the countries of North and South America to assist in the conference.

Medico-Psychologists Hold Meeting.—At the annual meeting of the American Medico-Psychologic Association held in Cleveland, June 1 to 4, Boston was decided on as the next place of meeting, and the following officers were elected: president, Dr. Owen Copp, Philadelphia; vice president, Dr. Sanger Brown, Chicago, and treasurer, Dr. Harry W. Mitchell, Warren, Pa.

General Gorgas Abandons Trip.—Major-Gen. William C. Gorgas has been obliged to abandon his mission to West Africa where he was to investigate sanitary conditions under the auspices of the Rockefeller Foundation. General Gorgas recently suffered a cerebral hemorrhage, complications developed and his condition remains serious. He will probably return to the United States as soon as he is able to travel.

Disposal of Army Medical and Hospital Supplies.—The surplus property division of the office of the Quartermaster General at Washington is offering for sale large quantities of various medical and hospital supplies. A list of these supplies was published on advertising pages 38 and 39 of THE JOURNAL for April 24, 1920. Lists of articles that are still unsold are being furnished on application to Director of Sales, Munitions Building, Washington, D. C.

Rockefeller Gifts to Medical Work.—The General Education Board of the Rockefeller Institute announces a gift of \$5,000,000 to the Rochester University to be used in conjunction with a second \$5,000,000 donated by George Eastman for the founding of a school of medicine and dentistry. A second gift of £1,250,000, with additional smaller sums, is to be given the London University College and Hospital School for a building program whereby the facilities of the college are to be extensively improved for the training of personnel and the setting of standards for health work throughout the British Empire.

Venereal Disease Survey.—Surgeon-General H. S. Cumming, U. S. Public Health Service, announces that approximately 465 of the larger cities of the United States have been surveyed to determine the measures in force for combating venereal diseases. These data are to be published shortly. In four or five months another study of the same localities will be made and the results published. In order that this public health problem may be successfully handled, the cooperation and support of the members of the American Medical Association, its constituent state associations and their component county societies is solicited. The Surgeon-General is desirous of having the support both of these correlated organizations and the influence of their members as leaders in lay organizations—churches, Y. M. C. A., Y. W. C. A., fraternal bodies, rotary clubs, women's clubs and similar societies.

Republican Health Plank.—The following plank on education and health was adopted by the Republican National Convention:

We endorse the principle of federal aid to the states for the purposes of vocational and agricultural training.

Wherever federal money is devoted to education, such education must be so directed as to awaken in the youth the spirit of America and a sense of patriotic duty to the United States.

A thorough system of physical education for all children up to the age of 19, including adequate health supervision and instruction, would remedy conditions revealed by the draft and would add to the economic and industrial strength of the nation. National leadership and stimulation will be necessary to induce the states to adopt a wise system of physical training.

The public health activities of the federal government are scattered through numerous departments and bureaus, resulting in inefficiency, duplication, and extravagance. We advocate a greater centralization of the federal functions, and in addition urge the better coordination of the work of the federal, state, and local health agencies.

LATIN AMERICA

Yellow Fever in Brazil.—Our Brazilian exchanges mention that several cases of yellow fever have been reported recently at Bahia, and several deaths have occurred at different points in the Alagoas region to the northeast.

Plague in Mexico.—According to the last reports, two new cases and three suspected cases of plague have been reported at Vera Cruz, and two deaths among those previously stricken. Two cases were also reported at Tampico.

Personal.—Dr. A. Neiva, chief of the public health service of the state of S. Paulo, Brazil, has been commissioned by the authorities to study the organization of the public health service in Japan and the United States, and the prophylaxis of leprosy in Norway, the Philippines and Hawaii.

Society Election.—The Sociedad de Cirujia of Buenos Aires recently elected as president, Dr. D. J. Cranwell; vice president, Dr. E. Beláustegui; treasurer, Dr. M. Viñas; secretary, Dr. R. Pasman; director of the *Revista*, Dr. D. A. Ceballos, and other directors Dr. P. Chutro and Dr. D. F. Prando.

Election of Officers.—The officers elected for the 1920-1922 term of the Asociación Médica Argentina are Dr. P. Escudero, president; Dr. J. S. Passeron, vice president; Dr. C. Domínguez, secretary general; Dr. J. Iribarne, director of the council on publications; Dr. E. Fidanza, treasurer, and Dr. R. A. Rivarola, librarian.

New Military Hospital at S. Paulo.—The corner stone of the new military hospital was laid in 1918 and it was recently inaugurated with much ceremony by state and military authorities. It was completed in eighteen months at an expense of about \$369,000. Major Affonso Ferreira is to be the director of the new hospital.

FOREIGN

New Dermatologic Journal.—With the name *Acta dermatovenereologica* a new journal has been founded by physicians in the Scandinavian countries, to be published in the three main European languages as material accumulates. The editor-in-chief is Professor Almkvist, Sjukhuset St. Gjøran, Stockholm. Each volume is to include about 500 pages, and the subscription to the volume is 20 Swedish crowns.

Health Survey of Haiti.—Dr. John Swan, who was recently sent to the Dominican Republic and Haiti by the American Red Cross to make a survey of sanitary and health conditions, reports an urgent need for help, especially as regards modern medical treatment and sanitary housing. In his opinion, immediate steps should be taken to fight venereal disease, hookworm, malaria, and yaws, to establish antituberculosis measures and to teach personal hygiene.

Vital Statistics of Portugal.—According to figures published in the *Medicina contemporanea* the average rates for the years 1913 to 1917 per thousand inhabitants of Portugal and the Azores and Madeira islands were 6.10 marriages, 31.13 births and 20.13 deaths. The figures for Lisbon alone are 7.25 marriages, 24.29 births and 21.91 deaths. The death rate in the home country has increased during the five years from 20.52 to 21.50. The losses by emigration averaged 5.30. The population of Portugal in 1911 was 5,957,985.

Medical History of the World War.—Portugal was among the first nations to send a civilian medical unit to the front. Dr. Reynaldo dos Santos of Lisbon organized the unit and was in charge of it in France, long before Portugal entered the war. The profession in Portugal is now collecting data to compile the medical history of the war. To inaugurate this task, the *Medicina contemporanea* is publishing a list of the titles and a bibliography of articles that have appeared in Portuguese journals, society transactions or elsewhere, bearing on the war.

The Parkin Prize.—In the terms of a bequest made to the Royal College of Surgeons, Edinburgh, by the late Dr. John Parkin, a fellow of the college, a prize is offered for the best essay on "The Curative Effects of Carbonic Acid or Other Forms of Carbon in Cholera, for Different Forms of Fever and Other Diseases." The prize is 100 pounds sterling. The contest is open to competitors of all nations. Essays intended for competition must be written in the English language, must bear a motto and be accompanied by a sealed envelope bearing the motto outside and the name of the author inside, and must be received by Dr. J. S. Fowler, secretary of the college, not later than December 31.

Deaths in Other Countries

Dr. A. Suazo of Comayagua, Honduras.—Dr. J. J. Naón of Tucuman, Argentina, professor of anatomy at the university of Buenos Aires until his resignation in 1906.—Dr. F. T. Christen, a well known roentgenologist of Lausanne, was drowned recently.—Dr. Karl Toldt, professor emeritus of anatomy at the University of Vienna, aged 80.

CORRECTION

Pathological and Not Bacteriological.—In THE JOURNAL of May 1, an Alabama item stated erroneously that the Birmingham Bacteriological Society was formed on March 17 with fourteen members. The society referred to is the Birmingham Pathological Society which was organized on that day, with thirty members.

Error in Discussion of Syphilis.—Dr. G. E. Humphrey, Cambridge Springs, Pa., calls attention to the fact that in the discussion of a paper by Dr. Sanger Brown on "Syphilis," THE JOURNAL, June 5, page 1569, Dr. S. W. Lindsay of Topeka, Kan., says: "Twenty years ago I treated a young man who had syphilis, with the old time salvarsan." Dr. Humphrey calls attention to the fact that salvarsan was not introduced until about 1910.

Government Services

Army Medical School Graduation

The commencement exercises of the Army Medical School were held May 28, in the new National Museum Auditorium, Washington, D. C., Major-Gen. Merritte W. Ireland, Surgeon-General, U. S. Army, presiding. Newton D. Baker, Secretary of War, addressed the graduates and presented the diplomas. The Hoff Memorial Medal was awarded to Major Seymour C. Schwartz, M. C., U. S. Army, and was presented by Major-Gen. Merritte W. Ireland; the Sternberg Medal was awarded to Lieut. August Pacini, M. C., U. S. Army, and was presented by Col. Richard Sternberg, and the Skinner Medal was awarded to William O. Callaway, and was presented by Major John O. Skinner, M. C., U. S. Army, retired. A class of twenty-seven was graduated.

Health Conditions of the Army

Health conditions among troops in the United States continue excellent as evidenced by the decrease in the admission and noneffective rates. There were three new cases of pneumonia reported during the week from Camp Taylor, which for the last few weeks has been reporting a number of sporadic cases of measles. The number of admissions for influenza and measles show a slight increase over last week. There were fifteen new cases of influenza reported during the weeks all from the Eastern Department. The death rate for disease, 4.0, is considerably higher than last week, 2.7. Of thirteen deaths from disease reported, tuberculosis was given as the cause in four, pneumonia and scarlet fever, one each, and streptococcic meningitis three.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS
Chicago—Merrill, L. C.

LOUISIANA
New Orleans—Thomas, G. A.

MASSACHUSETTS
Boston—Meledy, J. A.
Redden, W. R.

NEW YORK
Brooklyn—Cragin, H. S.

PENNSYLVANIA
Dudley—Dovey, H. L.

TEXAS
Tyler—Pope, I., Jr.

Foreign Letters

PARIS

(From Our Regular Correspondent)

May 27, 1920.

Our Present Knowledge of Immunity

Since 1901, when Metchnikoff published his classic work on immunity, our knowledge of the phenomena of immunity has been considerably augmented, especially in the domain of serology. It is no exaggeration to state that the study of these phenomena has been raised to the status of a distinct and independent science. Unfortunately, up to the present, the fundamental literature of this new science is scattered in the special periodicals. We are in need of a general statement of the laws of immunity. No one was better qualified to make such a statement than Prof. Jules Bordet, director of the Pasteur Institute of Brussels. The works of Bordet have, in fact, played an important rôle in the progress of immunology, for it is only since 1898, with Bordet's discovery of hemolytic serums, that the question of the resistance of the organism to pathogenic agents has been able to assume an important position. Bordet's "Traité de l'immunité dans les maladies infectieuses" (just published by Masson et Cie, Paris) undoubtedly represents the most complete exposition of the problem of immunity which has yet appeared. It deserves being called to the special attention of the American medical profession, for the study of immunity has always created a lively interest in the United States. The organization of the American Association of Immunologists in itself sets a good example to the Old World.

Indications for Heliotherapy

At the congress for the promotion of mineral water, climatic, bathing and mountain health resorts, recently held at Monaco, Dr. d'Oelsnitz of Nice made an interesting report on heliotherapy as an auxiliary to climatic treatment.

In surgical tuberculosis marine heliotherapy is apparently the agent of choice. But mountain resorts should not be ignored. Less stimulating than the northern sea coast, they are still the preferable indication for certain nervous and excitable patients. Tracheobronchial tuberculosis is clearly admitted in the list of diseases amenable to treatment by sunlight. In pulmonary tuberculosis, on the other hand, despite early enthusiasm, there is a growing tendency away from this measure. Sunlight can be applied with advantage in pleural tuberculosis after disappearance of the effusion. In pulmonary tuberculosis, heliotherapy often exerts a prophylactic action by arresting the development of glandular foci. For injuries, and atonic and infected wounds, heliotherapy should be employed no matter where. This is not true of disorders of general nutrition, digestive and nervous affections; these are amenable to heliotherapy only secondarily or accidentally, and climatic treatment is always the primary indication. An exception should be noted in rickets, in which heliotherapy at the seaside is the elective treatment. In his conclusions, Dr. d'Oelsnitz insisted on the necessity of subordinating, by attentive observation of the individual reactions, the intensity of treatment to the local and general effects produced in a given case. In a word, the indications for, and the dosage and technic of heliotherapy, aside from a few approximate rules, must still be based more on the individual patient than on climatic factors.

The congress, agreeing with these conclusions, resolved that because of possible accidents and complications, heliotherapy should always be subjected to medical supervision.

Antituberculosis Campaign of Red Cross Societies

The last number of the *Bulletin de la Comité National de defense contre la tuberculose* is exclusively devoted to the antituberculosis work of Red Cross societies during and after the war. Besides giving space to the activities of each of three French Red Cross societies (Société de secours aux blessés militaires, Union des Femmes de France, and Association des Dames françaises), the *Bulletin* gives prominence to an article by Professor Letulle on the rôle of the American Red Cross in the campaign against tuberculosis in France during the war.

LONDON

(From Our Regular Correspondent)

May 29, 1920.

A Systematized Medical Service: A Revolutionary Scheme

A scheme which will revolutionize medical practice in this country and is certain to be adopted, whether in a modified form or not, has been officially brought forward. It is even more revolutionary than the national insurance act, which simply extended contract practice from a section of the working classes to the whole, making provision for illness compulsory instead of optional, and subsidizing the system. The new scheme affects the whole of medical practice and aims at bringing within the reach of every patient all the advances of science and the expensive and complicated equipment necessary for their application.

When the ministry of health was formed last year, provision was made for a consultative council, consisting of physicians, to advise the minister on medical affairs. He invited it to consider the problem of a systematized medical service. The council has now presented its report, which begins with a description of the failure of the present organization of medicine to bring the advantages of medical science within reach of the people. Medical treatment, while becoming more effective, tends to become more complex. This tendency is exemplified in the modern handling of such complaints as appendicitis and tuberculosis. As the complexity of treatment becomes greater, it grows increasingly difficult for the individual practitioner to administer the full range of treatment, requiring, as it does, access to such resources as those of bacteriology, biochemistry, radiology and electrotherapeutics, while the number of patients who can afford to pay for it diminishes. Public opinion, again, appreciates more and more that the home does not always afford the best hygienic conditions for recovery from serious illness. Any scheme of medical service must be open, though not necessarily free, to all classes of the community; it must be such as can grow and expand and adapt itself to varying local conditions, and in each locality it must comprise and provide for all the medical services, preventive and curative, necessary to the health of the people, all these agencies being brought together in close coordination under a single health authority for each area.

At the center of the medical service of the country lies the treatment which the physician gives to his patient, either at his own office or at the patient's house. This domiciliary medical service should continue, the physician attending his patients as heretofore, either at their own homes or at his office, and carrying out there such treatment as falls within his competence. All domiciliary service would, however, be brought into relation with a "primary health center" which would serve as the rallying point of all the medical services, preventive and curative, of the district.

There would be, at the primary health center, wards of varying sizes and for varying purposes, including provision for midwifery, an operating room, a roentgenography room, a laboratory for simple investigations, a dispensary, medical

baths, and a common room which would serve as a meeting place for the physicians of the district and for the storage of clinical records on an agreed and standardized basis. There would also be accommodation for communal and preventive services, such as those for prenatal care, child welfare, medical inspection and treatment of schoolchildren, physical culture, and the examination of suspected cases of tuberculosis. So far as midwives and nurses are not available in particular districts under other arrangements, their services could be provided from a center. A dental clinic with a staff of visiting dental surgeons would be another important branch of the equipment.

These primary health centers, one of which should ultimately be found in every convenient center of population, should be staffed by the physicians of the district, patients who visited them or were accommodated in them retaining the services of their own physician. The physician would be able to arrange for the transference of a patient to the primary health center where, retaining the patient still under his own care and control, he would be able to continue the treatment under more favorable circumstances and with a readier access to the resources of modern medical science than are afforded in the office or are possible within the patient's own home. The primary health center would provide the patient (on the terms described below) with food, nursing and all equipment for efficient treatment, but not with medical attendance, which would be paid for either by the patient himself (if a private patient) or through some method of insurance or by the local health authority. While the primary health center thus provided the physician with means not now generally available of offering his patient what may be described as "hospital treatment," while still keeping him under his own control, it would also serve the physician as a center of professional life, bringing him into daily contact with the other physicians of his district, and occasional contact with the consultants and specialists who would attend at fixed intervals from the "secondary health centers" with which each group of primary centers would be brought into relation.

The "secondary health centers" would be situated in a town where an adequate equipment would be possible and an efficient staff of consultants and specialists could be assembled. Each secondary health center would be within access of all the primary health centers in the area. For many secondary centers the nucleus of organization would be found in existing hospitals. Like the primary health centers, the secondary centers would bring together into one organization agencies both of preventive and curative medicine, though in the secondary center each agency would be of a more specialized character. On the curative side, for example, the services of the secondary health centers would be mainly of a consultative type. They would receive cases referred to them by the primary centers either on account of difficulties in diagnosis or because in the diagnosis or treatment of such cases a highly specialized equipment was necessary. Secondary health centers would, in fact, need a complete hospital equipment.

Patients referred for consultation or treatment from the primary health centers would attend at the outpatient clinics of the secondary center or would occupy inpatient beds. The medical staff of the secondary center would be responsible for the treatment of these patients, but physicians would have every opportunity to keep in touch with their patients while attending the center and to resume supervision over them on discharge. The duties of consultants attached to secondary centers would consist of regular attendance at fixed times in their outpatient clinics where they would see cases referred to them; periodic visits to primary health centers in the district allotted to them, and special visits of

emergency to primary health centers and, in certain circumstances, to the homes within their areas, always in consultation with the physician. The consultants would be part-time officers and would be paid on a time basis, with extra fees for special visits. Where it is geographically possible, every secondary health center should be brought into relationship with the teaching hospital. The teaching hospital of the district would be found in some large city, and to it would go cases of unusual difficulty from secondary and primary health centers, which would in turn be permeated by the academic influence and the spirit of inquiry and progress associated with a teaching hospital. While preventive services must of necessity be publicly provided, the provision of curative services free of charge at the health centers would impose a heavy burden on public funds. In the public wards of the primary and secondary health centers, standard charges should be made for treatment, though these charges might vary in different parts of the country, and they could only as a rule be a contribution to the cost of treatment, which is often in its entirety beyond the means of many citizens. Private and self-supporting wards should be a part of the provision at the health centers, though the essential services in the public and private wards would be identical.

In order to administer the scheme in each district, the council glances at the need for a new type of local health authority to bring about unity of local control of all health services, curative and preventive. On this body the council asks for due representation of the medical profession, and is of opinion that the authority should in each case be assisted by a local medical advisory council.

On the subject of a state medical service, it says: "The alternative of a whole-time salaried service for all doctors has received our careful consideration, and the council holds that by its adoption the public would be serious losers. No doubt laboratory workers and medical administrators who do not come in personal contact with the sick can with advantage be paid entirely by salary. The clinical worker, however, requires knowledge not only of the disease but of the patient: his work is more individual, and if he is to win the confidence so vital to the treatment of illness, there must be a basis not only of sound knowledge but of personal harmony. The voluntary character of the association between doctor and patient stimulates in the former the desire to excel both in skill and helpfulness. In no calling is there such a gap between perfunctory routine and the best endeavor, and the latter would not be obtained under a whole-time state salaried service, which would tend, by its machinery, to discourage initiative, to diminish the sense of responsibility, and to encourage mediocrity."

VIENNA

(From Our Regular Correspondent)

May 28, 1920.

Work of the American Red Cross

In April, the American Red Cross took up its welcome work in Vienna, and its beneficial effects are now felt in all hospitals and charitable institutions. The chief aim of the work is to assist the hospitals and convalescent homes in their special efforts, by distribution of the necessary articles of food and nursing supplies. A committee of Vienna physicians is cooperating with the Red Cross in this respect. Infants and nursing mothers are receiving special attention by distributions through the Society of Friends, which depends chiefly on the resources of the Red Cross for its humanitarian work. A large number of charitable institutions which direct their attention to the deplorable conditions of the so-called middle classes (the latter are now really worse off), receive valuable gifts in the form of food

and clothing. It is a good idea that articles of clothing, garments, linens, bed-clothes, etc., show a small label, bearing the words "Compliments, American Red Cross," with the name of the district and the town whence they are sent. Major Davis, in charge of the Department of Vienna, lays special stress on the fact that the American officers connected with the Red Cross do not interfere with commercial, political or religious affairs of the communities in which they are working. Among the most valuable articles provided by the American Red Cross are medicines and drugs which are not obtainable here. Quinin, opium, morphin, cocain and camphor are real rarities. The price for morphin, for instance, rose to 800,000 Kroner (over \$4,000) per kilogram. Surgical instruments and objects made chiefly of glass or rubber, which are needed very badly, are available at the Red Cross storehouses in great quantities; the same is true of clothing for hospital patients, shirts, gowns, robes, shoes and the like. Furthermore, 4,000 cases of emergency rations of the American Army, including cocoa, condensed milk, preserved meat, salt, sugar, tea and matches are in storage awaiting distribution. The funds and stocks of the organization are being constantly replenished, so that the activities appear to have a permanent character. This work will prove not only a most valuable help in distress, but it will impress the public with the earnestness and the humane feelings of the American people as a whole.

Dearth of Foreign Scientific Literature

As has been pointed out previously, the scientific institutes of Vienna are very much handicapped in their work by the deplorable lack of books and periodicals published abroad since the outbreak of the war. Because of the exchange rates, the institutions with their insignificant funds cannot purchase foreign journals or books, since, for instance, the annual subscription of a single leading American, English or French medical periodical consumes from 20 to 25 per cent. of the total sum available. Appeals for gifts of periodicals have been made by the University of Vienna to different foreign institutes, but to date the results are very meager. Another subject of distressing nature is the constant rise in the cost of printing and of paper, whereby the medical press of the country is seriously hampered, with the imminent danger that some of our most distinguished medical periodicals will be forced to suspend publication. Naturally, not only the students in the institutes are materially interested in the matter, but also the general practitioners. It is difficult to see how they are going to keep abreast with the scientific work of the world, and how they will succeed in publishing the results of their own investigations, if the chief means of international communication are suppressed.

The Campaign Against Prostitution and Venereal Diseases

From time to time the daily papers publish items about the fight being waged by the police sanitation committee on prostitution. However, the problem is surrounded by so many difficulties, that public discussion of this serious matter is not readily countenanced. The facts underlying the problem are as follows: It is clearly understood that the great war caused an enormous increase in the incidence of venereal diseases, while the morals of the general public have been quite lax. In all large cities of the continent, public and clandestine prostitution has been promoted to a most deplorable degree by the accumulation of soldiers, but perhaps nowhere so much as in Vienna. Here bad economic conditions have contributed with other factors to deprave the moral standard of certain classes of women. In former times the "street-walker" or the occasional clandestine prostitute hailed chiefly from such classes as waiters, unemployed

housemaids and factory girls, while today, these form only a small percentage of the grand total. Now shop girls, clerks, typewriters, and even daughters and wives from reputable families become victims of the economic misery. Not so much the desire for luxury and pleasure as sheer poverty and hunger drive them to the road of shame. The figures obtained by the police are simply appalling. The police, as a routine matter, make surprise visits to small hotels, hostels, bars and similar places, and cause all women found there without good reasons to be examined. In 1919, 7,000 women and girls were arrested under suspicion of clandestine prostitution. Of these over 1,700 suffered from manifest venereal disease, and 2,400 were dealt with by a special department of the police. Among the latter, 800 were between 18 and 21 years of age, more than 40 per cent. being venereally infected. An additional 380 were under 18 years of age, and of these 50 per cent. were diseased. Even worse conditions were found in the "surprise raids" conducted this year. Up to April 1, the police department had ordered the examination of over 800 women and girls found in suspicious surroundings. Ninety girls were between 14 and 18 years old, 60 per cent. of them diseased, and nearly 40 per cent. of all those examined were found infected. Naturally this represents only a percentage of those who actually lead such a life. The counterpart is to be found in the outpatient departments of our dermatologic clinics, where the number of men suffering from venereal diseases is constantly increasing. The government has instituted a number of so-called evening ambulatory clinics in all districts of the city, chiefly on the outskirts where the working classes are congregated. Altogether about twenty-five such ambulatory clinics are now functioning, conducted by duly qualified specialists in venereal diseases. Here, investigations are being made as to the source of infection, and it appears that about 70 per cent. of all men cohabiting with prostitutes become infected in spite of all prohibitive and prophylactic measures. Therefore the police have recommended the adoption of a law enforcing the examination, and, where necessary, the detention and treatment of the male partner in all instances of prostitution. For what does it avail to detain the women while the men are permitted to disseminate venereal diseases ad libitum? The idea has been commented on favorably by medical experts and by the government, and in the new health act, now under consideration, this point will be earnestly dealt with. It is proposed to make the wilful transmission of venereal diseases, irrespective of the sex of the culprit, a punishable offense and to enforce compulsory treatment of venereal diseases.

Marriages

CLARENCE J. MANLY, Colonel, M. C., U. S. Army, to Mrs. Mabel Graham Billingslea of Westminster, Md., at Baltimore, June 5.

WILLIAM PARKER HERBST, Rochester, Minn., to Miss Catherine Arnold of Chicago, at Lake City, Minn., June 12.

JULIUS ASHER MILLER, New York City, to Miss Pearle M. Lebowich of Dixon, Ill., May 28.

LEWIS SAMUEL BOOTH to Miss Elizabeth Willard Stead, both of New York City, June 1.

STEWART ELLSWORTH MANDEVILLE to Miss Fern Anderson, both of New York City, May 4.

LEE HOLLISTER FERGUSON to Miss Margaret A. Knapp, both of New York City, May 20.

EDWARD T. JUCHHOFF, Chicago, to Mrs. Lois E. Masters of Jacksonville, Ill., April 22.

MAX JOHN SCHROEDER to Miss Shirley Goldberg, both of New York City, June 12.

Deaths

Joseph Willis Houston, Lancaster, Pa.; Jefferson Medical College, 1857; aged 86; a member of the Medical Society of the State of Pennsylvania, assistant surgeon of Pennsylvania Volunteers during the Civil War; professor of natural sciences at Lincoln University for six years, and dean of the faculty of the medical department; surgeon of the Maryland Division of the Pennsylvania system for fifteen years; died, June 5.

Edward Herman Miller Sell, New York; Bellevue Hospital Medical College, 1866; aged 87; one of the seven organizers of the New York Academy of Medicine, and the sole survivor; editor of the *Physician and Pharmacist* from 1869 to 1880; a fellow and once vice president and treasurer of the American Academy of Medicine, who made special studies regarding liquor and drug addiction; died, June 6.

Alfred Harris Kelly, Louisville, Ky.; Louisville, Ky., Medical College 1895; aged 46; Captain, M. C., U. S. Army, and discharged on account of physical disability August 21, 1918; formerly coroner of Jefferson County, and professor of chemistry and toxicology at the University of Louisville; for more than a year medical director of Hazelwood Sanatorium; died, May 28, from cerebral hemorrhage.

Carl John Ringnell Ⓢ Minneapolis; University of Minnesota, Minneapolis, 1891; aged 55; a member and executive secretary of the State Board of Medical Examiners and a leader of the movement which resulted in the enactment of an anti fee-splitting law; one of the founders of the Swedish Hospital, Minneapolis; at one time deputy coroner of the city; died, June 2.

Henry James Millard, North Adams, Mass.; Berkshire Medical College, Pittsfield, Mass., 1864; aged 84; a member of the Massachusetts Medical Society; a member of the staff of the North Adams City Hospital; assistant surgeon of the Thirty-Fourth Massachusetts Volunteer Infantry during the Civil War; died, May 30, from heart disease.

James Sylvanus Sprague, Belleville, Ont.; Victoria University, Cobourg, Ont., 1869; Trinity Medical College, Toronto, 1890; aged 75; for several years examiner on materia medica and therapeutics of the Medical Council of Ontario, and once a member of the State Board of Medical Examiners of Iowa; died, April 23.

Isaac A. Shirley, Winchester, Ky.; University of Louisville, Ky., 1875; Bellevue Hospital Medical College, 1879; aged 71; a member and president in 1909 of the Kentucky State Medical Association; formerly vice president and president of the Clarke County Medical Society; a member of the State Board of Health; died, June 5.

Edward Dennis McGiverin, Jersey City, N. J.; University and Bellevue Hospital Medical College, 1909; aged 34; Lieutenant, M. C., U. S. Army, during the World War, and resigned on account of poor health; while on his way to California for his health, died at the Elk's Club, Salt Lake City, June 7.

William S. Jones Ⓢ Camden, N. J.; Jefferson Medical College, 1878; aged 62; for fourteen years a member of the faculty of his alma mater; superintendent of the Old Soldiers Home, Vineland, N. J., and State Medical Examiner of Institutions; died, June 8, from heart disease.

John Harrell Maxwell, Newton, Ill.; Medical College of Ohio, Cincinnati, 1878; aged 85; hospital steward of the Thirty-Eighth Illinois Volunteer Infantry during the Civil War; one of the founders of the Jasper County Medical Society; died, April 3, from cerebral hemorrhage.

Antonio Villanencio, Taal, Batangas, P. I.; Santo Tomas University, Manila, P. I., 1915; a member of the Philippine Islands Medical Society, who was taking a postgraduate course in New York; died in the Post-Graduate Hospital, New York, February 6, from lobar pneumonia.

Burl Samuel Hood, Bond, Miss.; University of Nashville, 1906; aged 39; a member of the Mississippi State Medical Association; lieutenant, M. C., U. S. Army, with service in France, and discharged July 3, 1919; was shot and instantly killed at the home of a patient, June 3.

Ferdinand Siegel Ⓢ Brooklyn; University of the City of New York, 1890; aged 53; chief of the general medical staff and associate pediatrician in Bedford Maternity Hospital; died, May 25, from a nervous breakdown.

Francis Joseph Adams Ⓢ Great Falls, Mont.; Georgetown University, Washington, D. C., 1881; aged 60; a specialist in surgery; while returning in his automobile from Belt to Great Falls, Mont., June 2, was killed by the overturning of his car.

Harry Dushane Todd Ⓢ Akron, Ohio; Eclectic Medical Institute, Cincinnati, 1898; aged 43; police surgeon of Akron for fifteen years; visiting physician to the Akron City Hospital; died, May 25, from heart disease.

Richard William Muller Ⓢ New York; University of the City of New York, 1879; aged 69; a specialist in dermatology; a member of the New York Academy of Medicine; died, June 3, from heart disease.

Nathaniel F. Lindsay, Robinson, Ill.; University of Louisville, Ky., 1878; aged 70; a member of the Illinois State Medical Society; died, March 26, from carcinoma of the pancreas.

William Henry Woodbury, Buffalo; University of Buffalo, 1888; aged 56; a member of the Medical Society of the State of New York; a specialist in diseases of the lungs; died, May 8.

Kesey Shindle Marlin, Dakota, Ill.; Pennsylvania Medical College, Philadelphia, 1854; aged 89; surgeon of U. S. Volunteers during the Civil War; died, March 2, from senile debility.

Alvah M. Davis Ⓢ Philadelphia; University of Pennsylvania, Philadelphia, 1892; aged 49; assistant to the nose, throat and ear clinic of Germantown Hospital; died, May 14.

Edith Winifred Stewart Ⓢ Hume, N. Y.; University of Buffalo, 1898; aged 45; died in the Warsaw (N. Y.) Hospital, May 16, three weeks after an operation for appendicitis.

George E. Powell, LaCrosse, Wis.; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 71; a noted scout on the plains during the Indian uprisings; died, May 17.

Guy Burrell Stall, Detroit; Detroit Homeopathic College, 1904; aged 39; a member of the Michigan State Medical Society; died, May 17, after an operation for a carbuncle.

Isham Griffin Wilson, Demopolis, Ala.; Tulane University of Louisiana, New Orleans, 1868; aged 76; died at the home of his niece in Selma, Ala., May 17, from heart disease.

William Ardrey Kellogg, Fort Adams, Miss.; Jefferson Medical College, 1897; aged 47; is reported to have been accidentally burned to death in his room, May 17.

Simon D. Shive, Bannerville, Pa.; Baltimore Medical College, 1882; aged 66; a member of the Medical Society of the State of Pennsylvania; died, March 12.

Charles O'Reilly, Toronto, Ont.; McGill University, Montreal, 1867; aged 73; for thirty years superintendent of the Toronto General Hospital; died, May 3.

Wyndon Hewitt Davis, Libertyville, Iowa; University of Iowa, Iowa City, 1920; an intern in Harper Hospital, Detroit; died in that institution, about May 19.

Joseph R. Baker, Sanders, Ky.; University of Louisville, Ky., 1908; aged 43; died in the Jewish Hospital, Louisville, May 11, after a surgical operation.

Harry Abram Cosler, Osborn, Ohio; Ohio Medical University, Columbus, 1902; aged 47; a member of the Ohio State Medical Association; died, May 13.

Clyde H. Duncan, Fairmont, W. Va.; Chicago Homeopathic Medical College, 1894; aged 47; died in the McMillan Sanitarium, Columbus, Ohio, May 12.

Samuel F. Hazlehurst, Colorado Springs, Colo.; University of Pennsylvania, Philadelphia, 1876; died in a hospital in Colorado Springs, May 13.

O. L. Kilborn, Chengtu, China; Queen's University, Kingston, Ont., 1889; a medical missionary for twenty-nine years; died in China, about April 20.

Calvin E. Parker, Los Angeles; Missouri Medical College, St. Louis, 1877; formerly a practitioner of Philo and Campaign, Ill.; died recently.

James Thomas Growdon, Akron, Ohio; Kentucky School of Medicine, Louisville, 1894; aged 52; died, May 9, from the effects of rheumatism.

J. Thompson Hume, St. Petersburg, Fla.; College of Physicians and Surgeons, Baltimore, 1887; aged 64; died, May 15.

William M. Bright, Hickman, Ky.; University of Nashville, Tenn., 1869; aged 73; died, May 11, from heart disease.

Anonymous Earl Hardin Ⓢ Fort Smith, Ark.; Louisville (Ky.) Medical College, 1875; aged 72; died, May 14.

Ⓢ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

FORMITOL TABLETS, II

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following supplementary report on Formitol Tablets.

W. A. PUCKNER, Secretary.

In the Council report (THE JOURNAL A. M. A., Oct. 4, 1919, p. 1077) on the ineffectiveness of lozenges claimed either to contain formaldehyd or to liberate formaldehyd in the mouth, the composition of Formitol Tablets of the E. L. Patch Co. was briefly discussed in the following terms:

"The A. M. A. Chemical Laboratory reported that Formitol Tablets contained formaldehyd (or paraformaldehyd), an ammonium compound, and some hexamethylenamin. It is probable that the formaldehyd (or paraformaldehyd) was produced by the decomposition of hexamethylenamin originally present in the tablets but decomposed by long contact with the acid."

At the time this report was published, the label and the advertising matter contained but vague and indefinite statements with regard to the composition of Formitol tablets. In the October, 1919, issue of *Patchwork*, the house organ of the E. L. Patch Co., it was denied that these tablets contain hexamethylenamin since none had ever been used in their manufacture. It was also claimed that the company had a "printed sheet giving the formula of these tablets."

The Council advised the E. L. Patch Co. that it desires to publish only facts about the products which it examines and that if the report on Formitol Tablets was inaccurate in any way the Council would want to correct any error it might have unintentionally made. As the Formitol advertising in the files of the Council contained no information as to the composition of the tablets, the firm was also requested to send the printed sheet giving the "formula."

When this printed "formula" came it was found to be a sheet used by the E. L. Patch Co. for the purpose of giving its salesmen information regarding Formitol tablets, to be passed on to the physician. This printed sheet conveyed the information that Formitol Tablets contain ammonium chlorid, benzoic acid, citric acid, guaiac, hyoscyamus, menthol, paraformaldehyd and tannic acid, but it gave no information in regard to the amount of any of the ingredients except that it declared that each tablet represents the equivalent of 10 minims of a 1 per cent. formaldehyd solution.

Because of the nonquantitative and therefore meaningless printed "formula" and because, also, of its complexity, it was thought desirable to make a more complete analysis of Formitol Tablets. Experience has shown that frequently the real formula of a thing is quite different from the alleged formula published by the manufacturer. The details of the laboratory's later analysis will appear in the Annual Reports of the Chemical Laboratory or may be had on request.

The result of the laboratory's additional experimental work, especially when taken in connection with investigations made elsewhere on the interaction of formaldehyd and ammonium chlorid justifies the conclusion that Formitol Tablets do contain some hexamethylenamin, even though the amount may be very small. As the E. L. Patch Co. declare that no hexamethylenamin is put into Formitol Tablets the conclusion drawn in the Council's original report to the effect that the formaldehyd probably was formed by the decomposition of hexamethylenamin was evidently an error. The hexamethylenamin present is doubtless produced by the action of the paraformaldehyd on the ammonium chlorid present.

The analysis also showed that more than 78 per cent. of the weight of Formitol Tablets was made up of sugars and about 16.5 per cent. was starch and other material, some of which was talcum or similar material. This means that about 94 per cent. of the total weight of the tablets is sugar and starch none of which are mentioned in the printed "formula." The significance of this is apparent when it is considered that there are eight ingredients listed in the "formula" for which therapeutic effects are claimed. Since a tablet weighs about 13.5 grains, the combined weight of all the claimed active ingredients is less than 1 grain per tablet!

The amount of ammonium chlorid found, as indicated by the total nitrogen, was not more than 1.0 per cent. or about $\frac{1}{8}$ grain per tablet. The amount of benzoic acid found was 0.34 per cent. or $\frac{1}{25}$ grain per tablet. Yet these two drugs are said to exert their peculiar expectorant action. (The U. S. P. lozenge of ammonium chlorid contains $1\frac{1}{2}$ grains ammonium chlorid or twelve times the amount of this drug in a Formitol tablet.)

The tannic acid contained in the tablets could not be determined with accuracy but it was much less than 1 per cent. (or $\frac{1}{8}$ grain per tablet) yet it is said to add valuable astringent qualities to Formitol Tablets! (The U. S. P. lozenge of tannic acid contains 1 grain of tannic acid.)

The quantity of guaiac (as resin) is but a fraction of 1 per cent. Yet it is said to impart to Formitol tablets

"stimulant resolvent" properties and it is intimated that there is sufficient to be of value in "cases of abscess of the throat and inflammation of the tissues."

The total acidity indicates the presence of about 2 per cent. of citric acid or $\frac{1}{4}$ grain per tablet. Yet this amount is said to be "antiseptic" and "aids in the general results."

While the presence of the drug hyoscyamus (henbane) was not positively identified by microscopic examination, alkaloids were present.

The manufacturers claim that the tablets contain menthol yet only a suggestion of menthol could be obtained from the odor. However the odor of methyl salicylate—a constituent not declared in the "formula"—predominated throughout the operations of analysis.

Formitol tablets furnish a good illustration of some well established but often ignored truths:

1. "Formulas" that are nonquantitative are valueless or worse than valueless.

2. The fact that a manufacturer puts certain drugs in a mixture, is no proof that these drugs are there when the mixture reaches the patient. The physician must be assured that they are there when he prescribes them.

3. Complex mixtures should be avoided. It is absurd to expect, as is claimed in the case of Formitol Tablets, anodyne, antiseptic, astringent, expectorant, and resolvent action all at the same time.

SANATOGEN

SANATOGEN CONSISTS OF 95% CASEIN (DRIED MILK CURD) AND 5% GLYCEROPHOSPHATES. IT IS ADVERTISED UNDER RIDICULOUSLY EXAGGERATED CLAIMS AS A "FOOD-TONIC."

WHAT \$1.00 WILL BUY IN FOOD ENERGY

Sanatogen	1 lb.
Eggs (54c. dz.)	1 lb.
Milk (16c. qt.)	1 lb.
Bread (16c. lb.)	1 lb.
Sugar (18c. lb.)	1 lb.
Rice (16c. lb.)	1 lb.
Beans (10c. lb.)	1 lb.

There is more food energy in 2 cents worth of Beans (at 10c. lb.) than in One Dollar's worth of Sanatogen.

Miniature reproduction of one of the educational posters prepared by the Propaganda Department of THE JOURNAL. The originals measure 22 by 28 inches.

Correspondence

MEASUREMENT OF RADIUM

To the Editor:—In the routine testing of hermetically sealed radium preparations, the ionization produced in a given ionization chamber by the penetrating gamma radiation proceeding from the preparation is compared with that produced under the same conditions by the similar radiation from a standard containing a known amount of radium. Mesothorium preparations also emit a penetrating gamma radiation, and consequently by a single comparison with the radium standard in the manner just indicated there is no means for distinguishing such a preparation from one containing only radium and its derivatives.

It is for this reason that the usual radium certificate issued by the National Bureau of Standards contains no statement concerning the actual amount of radium contained in the preparation, but merely a statement of its equivalent radium content. The primary object of the measurement of such preparations by the bureau is to insure the purchaser against any serious error in the radioactive measurement of the preparation.

The carnotites, from which the domestic radium is produced, are known to contain only a negligible amount of mesothorium. Tests made on radium produced from such ore gave no evidence of the presence of mesothorium, and were such as to indicate that the mesothorium present cannot exceed 0.2 per cent. of the radium content of the material. Consequently, it is quite safe to assume that the radium produced from these deposits will be practically free from mesothorium unless the latter product is deliberately added. This is a matter over which the producer has control and concerning which he can speak with confidence. It is customary for the domestic producers of radium to guarantee that their product is practically free from mesothorium, and such a guarantee might well be requested by the purchaser.

Although the examination of a hermetically sealed radium preparation for the presence of mesothorium forms no part of the routine measurement of such materials by the bureau, such examination will be made when requested under conditions that justify the work. These examinations are laborious, require the opening of the preparation and the removal of some of the salt, and involve the risk of a considerable loss of material. As in the case of all tests made by the bureau, the applicant must furnish the material used, assume the risk of loss, and pay a fee commensurate with the labor involved.

On the other hand, even without this examination the purchaser is not left entirely to the mercy of unscrupulous dealers. Repeated gamma ray comparisons, using radiations filtered through different thicknesses of lead, will in general furnish data from which it can be determined whether much of the radiation from the preparation is due to mesothorium. Such tests on sealed specimens are deliberately made from time to time, and similar but less complete data are incidentally obtained from many specimens in the routine course of the testing. In no case has such test revealed to us the presence of mesothorium in any preparation that has been submitted to this bureau as one free from mesothorium; but few imported preparations have been so tested.

Another check on the possible presence of a significant amount of mesothorium in a radium preparation is afforded by its remeasurement. If the preparation contains a significant amount of mesothorium, then a second measurement made several months after the first will reveal:

1. A growth in the intensity of its radiation if all radiothorium had been removed from the material shortly before the first measurement.

2. Little or no growth if the radiothorium was last removed two or three years before.

3. A decrease of the radiation if the radiothorium had not been removed for over three years.

It is evident that unless the two measurements are very specially related to the age of the contained mesothorium, they will reveal its presence.

In the course of its work, the bureau has to its knowledge remeasured forty-seven radium preparations after intervals varying from two weeks to four years. Preparations from three domestic producers are included in the list. Some of these preparations were resubmitted by their producers, others by their purchasers. For fifteen of the preparations, the interval between these measurements exceeded six months. In no case did the difference between the two measurements exceed the sum of the allowable uncertainties of the two measurements. Excepting a single case in which the initial determination was known to have an unusually low precision, a difference as great as 0.9 per cent. was found in only one instance. The average difference was 0.34 per cent. The second measurement usually, but not always, exceeded the first. This probably results from the fact that in many cases the radium had not fully attained its equilibrium at the time of the first measurement. Even thirty days after the radium preparation is sealed, it is 0.45 per cent. short of its maximum gamma radiation.

Whence it is seen that as yet we have found no indication that any hermetically sealed preparation offered by a domestic producer as a radium preparation contains an appreciable amount of mesothorium. Very few such specimens offered by small dealers, jobbers or importers of radioactive material have been submitted to the bureau. Consequently we are at present not prepared to express an opinion concerning the material obtained from such sources.

S. W. STRATTON, PH.D., Washington, D. C.
Director, Bureau of Standards.

A NEGLECTED AID IN DIAGNOSIS AND PROGNOSIS—THE OPHTHALMOSCOPE

To the Editor:—My object in writing is to promote the more frequent use by the general practitioner of an instrument that is far too little used, considering its value to the medical profession, namely, the ophthalmoscope. The ophthalmoscope is an aid to the diagnosis not only of diseases of the eye itself but also of general diseases. And yet it is deplorable to see what little use is made of this aid by the majority of physicians. In looking over case reports, how often do we see the records of the findings of every test known to science, except the easiest of all tests, the ophthalmoscope? Since easily manipulated electric instruments are now obtainable, a practitioner is lax indeed who does not own one along with his blood pressure apparatus. The most surprising thing of all is that the large insurance companies have not before this insisted on it as part of the examination.

On the other hand, the chief may look at an eye-ground and say nonchalantly to the resident, "There is an interesting case of so-and-so," handing the ophthalmoscope to the resident, who, looking into the eye, does not at once see the condition, but is ashamed to admit it, says that he does, and thereby learns nothing. Thus he goes all through his service, rarely seeing an eye-ground, and later, never even attempting to look at one, as it seems too intricate for him to master. Of course the only solution of this is closer cooperation in the eye department, and the only way in which this can be brought about is for the ophthalmologist to show enough interest in the intern so that he will be glad to learn, and, once having gained the knowledge, will be more likely to follow it up in later years.

By this means the whole interior of the eye is accessible; blood vessels and nerves, which in other parts of the body are exposed only by surgery, are here plainly seen in their normal positions.

From a diagnostic and prognostic standpoint it is the only reliable instrument that we have. By the use of the sphygmomanometer one can tell that the pressure is high at that particular time, but that does not show us whether it is transient or permanent. With the ophthalmoscope, when one finds the small, hard, tortuous or ruptured vessel, one knows definitely that it is a permanent affair, and what the ultimate outlook is. If physicians would use it more generally as a part of the routine examination, many vague and indefinite cases would have their diagnosis established earlier.

L. G. REDDING, M.D., Scranton, Pa.

GAIN IN WEIGHT IN SOLDIERS

To the Editor:—Many exaggerated statements have been made as to the gain in weight soldiers have acquired during the war. So says the Surgeon-General of the Army (*THE JOURNAL*, Feb 21, 1920, p. 499), and he adds that at the present time no correct statement can be made.

The following facts were observed on the personnel of Base Hospital 76, with which we were mobilized at Camp Devens in July, 1918 (first weighing), and with which we served in Vichy, Allier, France (second weighing, six months later). During the first month in the American Expeditionary Forces, 42 per cent. of our unit had so-called influenza, but otherwise suffered comparatively few food difficulties or other hardships, and may therefore be presumed to show as favorable a gain as any command.

Gain in weight was seen in 194 men, or 84 per cent. of the series of the 229 subjects studied; and in these the gain averaged 8 per cent., with a maximum of 25 per cent. above the weight at enlistment. Loss in weight was noted in 10 per cent. of the series and in these the loss averaged 5 per cent. with a maximum of 18 per cent. below the weight at Camp Devens. Constant weight was observed in 6 per cent. of the series, whereas in 94 per cent. there was some change. This variation, averaging gains and losses together, was 7 per cent. of the weight at entry into service. Age played no part, that is, gains were no greater nor more frequent among the younger men than among the older. The foregoing conclusions are derived from figures presented but not analyzed elsewhere (Gray, Horace, and Mayall, J. F.: *Body-Weight in 229 Adults*, *Arch. Int. Med.*, to be published).

HORACE GRAY, M.D., Boston, and
F. B. ALLEN, M.D., North Wales, Pa.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EXAMINATIONS FOR OFFICERS OF MEDICAL DEPARTMENT

To the Editor:—Will it be necessary for a physician who is already in the Medical Reserve Corps to take any further examination in order to enter the regular army? A. A. SIZER, M.D., Schuyler, Va.

ANSWER.—Yes. An examination will be held, July 7, 1920, for officers of the Medical Department at the following places:

Northeastern Department, Headquarters, Boston.
General Hospital No. 6, McPherson, Ga.
General Hospital No. 21, Denver.
General Hospital No. 28, Fort Sheridan, Ill.
General Hospital No. 41, Staten Island, N. Y.
Camp Pike, Little Rock, Ark.
Camp Taylor, Louisville, Ky.

Camp Funston, Manhattan, Kan.
Fort Sam Houston, San Antonio, Texas.
Letterman Hospital, San Francisco.
Walter Reed Hospital, Washington, D. C.

All physicians who served as officers of the Medical Department between April 6, 1917, and June 5, 1920, are eligible, and all grades are open within the restrictions of the law.

Applications must be in the War Department on or before June 23. Applications will be considered only from persons who since March 25 have received and replied affirmatively to inquiry from the War Department as to whether or not they desire further consideration given their application in the Regular Army; also to persons who since March 25 submitted Form 739 to the War Department, and all other eligible persons who submit Form 739 at once. Copies of this form may be obtained through the Surgeon-General's Office.

The age limit for all grades is 58 years: 48 to 58 for Colonel; 45 to 58 for Lieutenant-Colonel; 36 to 58 for Major, with no restrictions regarding captain. Appointment and grade will be determined by record of the applicant while in the service. His rank at the time of discharge will probably not be exceeded in the reappointment. The possession of a medical degree will exempt the applicant from the general educational examination, but a professional examination is required on the subjects of medicine, surgery, sanitation and administration.

FORMULA FOR MOUTHWASH

To the Editor:—Please furnish me with a formula for the best mouth wash to be used by patients after tooth extraction and for general mouth hygiene. I desire this for my private practice and for use in my clinic. A. R. W.

ANSWER.—

LIQUID DENTIFRICE

	Gm. or C.c.
Castile soap, dried and granulated	6|00
Benzosulphinid	0|20
Basic fuchsin	0|002
Oil of cassia	0|50
Oil of peppermint	0|50
Oil of cloves	1|00
Alcohol	75|00
Water	to make 100|00

A few drops added to water to be used as a mouth wash.

It will be noted that, excepting for the volatile oils present, antiseptics and disinfectants are conspicuous by their absence. As is well known, it is impossible to disinfect the mouth. Mere bacteriostatic (germ growth inhibitive) influence can be of value only as long as the agent is present; and the time that one is willing to keep the mouth full of fluid is limited.

The chief virtue of mouth wash preparations lies in their esthetic qualities: their pleasant appearance, odor and taste, which make one use them with a greater degree of pleasure and therefore more faithfully. The formula given yields a pleasant detergent.

METHOD OF SECURING MEDICAL LICENSURE IN LARGE NUMBER OF STATES

To the Editor:—I am about to enter on the practice of medicine but have no definite location in mind. By what method can I secure medical licensure in the largest number of states? Please omit my name. E. M. B.

ANSWER.—1. By taking the examination of the National Board of Medical Examiners you could obtain a certificate now recognized in twenty states. These were named in *THE JOURNAL*, April 17, 1920, p. 1100. For further information, write to Dr. John S. Rodman, secretary, 1310 Medical Arts Building, Philadelphia.

2. Take your examination in some state—such as Michigan, Indiana or Wisconsin—which has reciprocal registration with thirty or more other states. To secure reciprocal privileges, however, you will need to practice for at least one year in the state granting your original license. Full information is contained in "Laws Regulating the Practice of Medicine," which is published by the American Medical Association. A copy of this book will be forwarded on receipt of 50 cents.

SMALLPOX PITTING UNREMOVABLE

To the Editor:—Is there a remedy for treating the old lesions of the skin caused by smallpox? If so, which is the best?

HONORIO F. DELGADO, M.D., Lima, Peru.

ANSWER.—There is no way of removing the scars (pitting) of smallpox.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.

COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, July 13-14. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.

CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

INDIANA: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, Crawfordsville.

MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.

NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.

OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Waubay.

UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.

WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

George W. Hogboom, Rush Medical College..... 1919

Abraham J. Weinberg, Rush Medical College..... 1919

David M. Levy, Rush Medical College..... 1918

UNIVERSITY OF ILLINOIS FAILED

Northwestern University Medical College..... 1919

University of Illinois 1919

Jefferson Medical College..... 1919

University of Minnesota 1919

University of Nebraska 1918

Western Reserve Medical College..... 1919

PASSED AT ST. LOUIS

Anthony B. Day, Washington University Medical School..... 1919

Martha M. Eliot, Johns Hopkins 1918

Mort B. Pelz, Washington University Medical School..... 1919

Fred J. Hodges, Washington University Medical School..... 1919

George R. Herrmann, University of Michigan 1919

Mary Wright, Johns Hopkins 1918

Earl C. Padgett, Washington University Medical School..... 1918

Edward F. Studer, Rush Medical College..... 1919

John E. Elmendorf, Jr., Johns Hopkins 1918

J. P. Caffey, University of Michigan..... 1919

UNIVERSITY OF MINNESOTA FAILED

University of Iowa Medical College..... 1919

Rush Medical College 1919

University of Texas School of Medicine..... 1919

University of Iowa Medical College..... 1919

In the case of candidates from the Rush Medical School, the M.D. certificate is withheld pending the completion of the one year internship. For successful candidates who have not completed their intern year, the board's certificate is withheld pending the completion of that work.

AVERAGES OBTAINED

CHICAGO CANDIDATES

Candidates by Number	Anatomy; Value, 100	Chemistry; Value, 75	Mat. Med., Pharm. and Therapeutics; Value, 75	Obstetrics and Gynecology; Value, 75	Hygiene; Value, 50	Medicine; Value, 200	Surgery; Value, 200	Pathology; Value, 75	Bacteriology; Value, 50	Physiology; Value, 75	Medical Jurisprudence; Value, 25	Final Average
1	61	50	84	65	85	61.5	71.2	78.6	75	60	76	678.8
2	80	62.5	88	77	91	69	87	66.6	84	79	80	774.4
3	86	79	84	85	71	82	87	77.3	68	79	92	819.8
4	87	83	88	77	80	84	87.5	86.6	80	71	72	832.3
5	55	75	80	75	84	72	70.7	77.3	76	69	96	726.8
6	68	76.5	72	65	84	73	76.7	76	74	59	68	724.9
7	82	77	83	85	79	85	85.7	90.6	84	70	84	830.1
8	69	69	74	75	86	71	75	75.3	80	70	80	736.6
9	76	81	76	75	76	79	86.2	69.3	82	77	72	787.3
10	72	77.5	78	70	73	60	72	58.6	72	53	72	681.4
11	79	68	72	75	67	58	81.7	73.3	90	72	72	725.3
12	90	80	84	77	80	83	82.5	75.3	72	87	80	819.5
13	73	78	88	86	84	84.8	82.5	82.6	82	92	88	832.6
14	92	80	84	86	84	77	89	54	82	84	96	822.5
15	80	80	80	75	83	85	85.7	86.6	78	81	80	823.5
16	90	70	84	80	86	81	89	85.3	76	82	88	834.0
17	86	84	80	87	64	76	91.7	75.3	76	72	72	808.3
18	68	92	78	84	76	77	86.2	77.3	87	77	68	799.2
19	61	72	78	86	73	86	82.2	75.3	75	82	72	784.5
20	72	80	76	86	85	86.5	87.7	70.6	78	70	72	810.0
21	66	68	78	84	81	86	86.7	77.3	82	76	68	797.5
22	77	50	76	80	73	70.5	78.5	75.3	78	73	76	735.2
23	72	81	78	85	72	87.5	80.2	75.3	74	67	80	790.3
24	88	92	82	82	75	82	85	82.6	80	79	84	833.7
25	76	78	80	87	79	83	82.5	78.6	78	70	68	797.8
26	83	77	74	78	69	81.5	87.7	78.6	78	68	80	796.8
27	84	71	82	86	84	78	88.5	69.3	82	74	92	809.8
28	83	71	60	85	78	74	85.5	76	80	78	72	791.6
29	68	78	72	82	80	82	77.5	60.6	68	70	84	753.5
30	80	83	70	83	77	85	80.7	66	75	82	76	795.1
31	84	80	31	100	78	86	90	68	76	76	72	837.0
32	79	80	77	82	69	71	84	70.6	77	79	72	771.2
33	73	87	88	70	72	79	85.2	66	76	74	72	782.8
Gen'l												
Aver.	76.9	76.4	79.1	80.1	77.8	78.1	83.3	74.4	78	74.3	78	

ST. LOUIS EXAMINATION

1	84	95	89	82	85	79.5	83.5	81.3	88	88	76	842.3
2	73	73	81	75	83	82.5	85.5	80	83	92	76	808.8
3	75	95	84	80	92	90	87	84	82	89	88	850.3
4	72	69	69	80	85	58	78.2	69.3	64	76	76	707.8
5	72	98	84	90	81	80.5	84.7	86.6	93	82	72	838.5
6	78	97	80.5	75	81	89	88.2	88	91	92	66	850.7
7	74	93	82.5	68	73	77	77	81.3	81	74	66	776.3
8	59	98	78.5	77	76	87	79.7	68	76	83	80	790.3
9	81	80	89	80	80	77	76.7	75.3	83	85	66	793.2
10	73	78	80	72	79	74	69.5	61.3	77	70	68	728
11	78	48	79.2	80	73	62	71.5	60.6	80	63	66	888.5
12	71	62	88.5	78	80	87.5	85	77.3	91	85	72	814
13	70	62	81	80	82	71	83	75.3	75	67	72	751
14	48	60	71.5	77	82	66	74.2	53.3	73	60	72	668
15	69	63	83	75	82	76.5	75	78.3	74	69	68	744.6
Gen'l												
Aver.	73.1	78	81.3	77.9	80.9	77.1	79.8	74.6	80	78.3	72.2	

REPORT OF EIGHTH EXAMINATION OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

The eighth examination of the National Board of Medical Examiners was held in Chicago and St. Louis, Feb. 18-25, 1920. The written examinations were held simultaneously in the two places from 9 a. m. to 1 p. m., and the laboratory and clinical examinations in the afternoons from 2 to 5. The subjects of the examination and the relative value of each were: anatomy, 100; physiology, 75; chemistry, 75; pathology, 75; bacteriology, 50; materia medica, pharmacology, and therapeutics, 75; medicine, 200; surgery, 200; obstetrics and gynecology, 75; hygiene and sanitation, 50; medical jurisprudence, 25. A percentage of 75 was required to pass. Falling below 65 per cent. in two subjects, or below 50 in one subject, constituted a failure.

There were sixty-two applicants who applied for examination. Sixty were found to have the essential preliminary and medical qualifications. Forty-eight appeared for examination, of whom thirty-six passed and twelve failed.

PASSED AT CHICAGO

Name	College	Year of Graduation
Philip Wade Whitely, Rush Medical College.....		1919
William R. Meeker, Rush Medical College.....		1919
Franklin P. Schuster, Rush Medical College.....		1918
S. John Hathaway, University of Minnesota.....		1919
Warren E. Tupper, Rush Medical College.....		1919
B. Raymond Weston, Rush Medical College.....		1917
Eugene F. Traut, Rush Medical College.....		1918
Chester H. Williams, Rush Medical College.....		1919
John H. Gernon, Rush Medical College.....		1919
George H. Miller, University of Pennsylvania.....		1917
Henry J. Profant, Rush Medical College.....		1919
Blackburn W. Lowry, Northwestern University Medical College		1919
Norman C. Paine, Rush Medical College.....		1919
Edward C. Holmblad, Rush Medical College.....		1919
Richard Torpin, Rush Medical College.....		1917
Charles J. Eldridge, Rush Medical College.....		1919
Roger Anderson, Northwestern University Medical College....		1918
George J. Mohr, Rush Medical College.....		1918
Louis J. Petritz, Northwestern University Medical College....		1918
David O. Conly, Northwestern University Medical College....		1918
George Douglas Brand, Northwestern University Med. College		1917
Raymond C. Thompson, Rush Medical College.....		1919
Ralph J. Frackelton, University of Michigan.....		1918

ANATOMY

Examiner, Dr. Herbert^{*} Harlan, Baltimore. Associate examiners in practical anatomy: In Chicago: Drs. Roy L. Moody, Ruben Strong, S. W. Ransom, Charles F. Swift and B. S. Harvey. In St. Louis: Drs. C. H. Danforth, A. G. Pohlman, R. G. Terry and D. M. Schoe-maker.

Written Examination.—1. Describe the ankle-joint, including relations with tendons, vessels and nerves. 2. Describe the pancreas. 3. What are the chief muscles of mastication, and give attachments, action and nerve supply of each. 4. What nerves are most liable to injury in case of the following fractures: surgical neck of the humerus, internal condyle of humerus, clavicle, upper end of fibula, and state probable cause of injury in each case. 5. What is the site of election for ligation of the subclavian artery; reason therefor; and through what arteries is collateral circulation carried on after such ligation?

Oral Examination.—This was conducted with the use of specimens of the brain, osseous system and internal organs, and specially prepared dissection demonstrating the gross anatomy of joints and definite regions of the body; the identification of specimens of histology under the microscope.

CHEMISTRY

Examiner, Dr. Victor C. Vaughan. Associate examiners in laboratory chemistry: In Chicago: Drs. William H. Welker, F. C. Koch, W. D. Sansum and G. Tracy. In St. Louis: Drs. Ralph W. Hoffman and J. L. Bollman.

Written Examination.—(Physics): 1. Explain by drawings and description the structure of a compound microscope. 2. Explain the mechanism and the use of the ophthalmoscope. 3. What are induced electromotive forces, and what are some experimental ways of producing them? How may they be made of value?

(Chemistry): 1. How would you detect wood alcohol in grain alcohol? What chemical change takes place in wood alcohol in the human body? What poison is formed? 2. Give the most successful chemical methods of purifying drinking water. 3. Give the chemical changes that occur in the protein, fat and carbohydrate constituents of food as they pass through the body. 4. Define an amino-acid and give a list of those amino-acids which have been found in protein molecules. 5. What are the xanthin bases? Where are they found? What is their chemistry and their physiology? 6. What deposits may be found in urine and how may they be identified? 7. Give the chemistry of the red blood corpuscle. 8. What are the five food principles? Construct a daily ration.

Laboratory Examination.—Each candidate was given three samples of urine and required to make a qualitative examination of each for sugar. In the specimen containing the largest amount, a quantitative examination was required.

MEDICINE

Examiners, Drs. H. D. Arnold and W. L. Bierring. Associate examiners: In Chicago: Clinical medicine: Drs. Ellis K. Kerr, Charles S. Williamson, C. C. McCulloch, James G. Carr, Frederick Tice, Joseph L. Miller and Joseph A. Capps. Clinical laboratory: Drs. J. J. Moore, B. O. Raulston and Ralph W. Webster. In St. Louis: Drs. George Dock, F. N. Wilson, E. P. Buddy and J. I. Tierney. Clinical laboratory: Drs. Ralph A. Kinsella and W. P. Elmer.

Written Examination.—(Answer ten questions the first seven questions are required; select three from questions eight to twelve): 1. You are called to treat a child of 8 years who has had a sore throat for twenty-four hours. Pulse, 110; temperature, 102.5; respiration, 22. There is moderate inflammation of the pharynx and tonsils, with a few small whitish spots on each tonsil. (a) What further investigation would you make for purposes of diagnosis. (b) Describe your treatment in detail. 2. A man of 60 years, complaining of intercostal neuralgia, is found to have sugar in the urine. A twenty-four-hour specimen of the urine shows: amount, 1,200 c.c.; specific gravity, 1.029; albumin, faintest possible trace; sugar, 3.45 per cent.; diacetic acid and acetone, absent; sediment negative except for a very rare hyaline cast. His diet for the same day shows 60 gm. protein; 71 gm. fats; 180 gm. carbohydrates; 1,600 calories. (a) Comment on the degree of deficiency in the utilization of carbohydrates and the probable severity of his diabetes. (b) Outline a program of treatment. 3. (a) Describe a typical case of alcoholic cirrhosis of the liver with ascites. (b) Treatment. 4. A man, aged 53, has had for six months epigastric pain, usually two or three hours after eating; recently he has vomited occasionally, but has noticed no blood in the vomitus. He has lost weight and strength. The question of cancer of the stomach arises. Comment on the diagnostic aid that may be derived from (a) gastric analysis; (b) examination of the blood; (c) examination of the stools; (d) what other methods of examination would aid toward a diagnosis? (e) Discuss briefly the question of operation, assuming that the diagnosis of cancer of the stomach has been established to your satisfaction. 5. What physical signs would you expect to find in a patient with a sacculated aneurysm of the ascending arch of the aorta? 6. Differential diagnosis between smallpox and varicella. 7. A man, aged 65, suffers an attack of right-sided hemiplegia with aphasia. Discuss the location and probable nature of the lesion and the prognosis. 8. Tuberculosis of the kidney: (a) How may it arise? (b) What would you expect to find in the urine? (c) What evidence would warrant this diagnosis? (d) Treatment. 9. Typhus fever: (a) Discuss the etiology. (b) Differential diagnosis from typhoid fever. (c) This disease was prevalent in the recent war and still exists in certain sections of Europe. What measures should be adopted to prevent its introduction into this country? 10. How would you recognize the development of an empyema in a case of pneumonia? (b) Treatment. 11. Diagnosis, prognosis and treatment of paralysis agitans. 12. Discuss the etiology, diagnosis and treatment of Hodgkin's disease.

Clinical Laboratory (one hour).—Each candidate was required to examine specimens of urine with pathologic sediments, specimens of stool and diagnose blood slides.

Clinical Examination.—This was held in the wards of the Cook County Hospital, Chicago, and in the Barnes and St. John's Hospitals, St. Louis, each candidate being assigned to a long case and then quizzed on his findings. Following this the candidate was assigned to short cases representing some well defined condition, as pleural effusion, enlarged heart, large liver, aortic insufficiency, subacute endocarditis, severe anemia, etc.

MATERIA MEDICA AND THERAPEUTICS

Examiners, Dr. W. L. Bierring and Dr. H. D. Arnold. Associate examiners: Pharmacology: In Chicago: Drs. Hugh McGuigan, R. W.

Keeton, F. C. Becht, W. G. Lee and A. L. Tatum. In St. Louis: Drs. J. E. Thomas and Herbert S. Gasser.

Written Examination.—1. Describe one method of standardization of digitalis. In a case of heart failure with auricular fibrillation, outline the use of digitalis, giving the preparation, dosage and mode of administration. 2. Given a case of a man, aged 25, with the history of intermittent fever during the last ten days, the blood slide examination revealing the presence of the tertian type of *Plasmodium malariae*, write the directions for the medication indicated, giving the preparation, dosage and mode of administration of the drug used. Discuss the pharmacologic action of the drug in this case. 3. In a case of a girl, aged 14 years, with acute tonsillitis, in which the bacteriologic examination of a throat swab reveals the presence of *Bacillus diphtheriae* (Klebs-Loeffler), outline in detail the specific therapy indicated during the course of the illness. 4. The patient is a man, aged 36, with a macular eruption of the skin, acute lymphadenitis of the cervical, epitrochlear and inguinal lymph nodes and positive (+ + + +) Wassermann blood reaction. Outline in detail the specific medication indicated (including preparation, physical properties, dosage and mode of administration of the drugs used) during the course of treatment until the blood shows a negative Wassermann reaction. 5. Compare the analgesic value of morphin and hydrated chloral. Write a prescription containing potassium bromid and hydrated chloral for hypnotic effect, to be administered in a vehicle to disguise the disagreeable taste of the mixture, giving full directions to the patient and indicating the dose intended of each drug.

PHARMACOLOGY

1. Demonstration experiment: A dog was prepared and various drugs injected to show effect on respiration, heart rate, and blood pressure. The effects to be interpreted by the candidate with recognition of the drug used. 2. Diagnosis of a number of tracings as to the pharmacologic effect and the character of drug producing it.

PHYSIOLOGY

Examiner, Dr. W. S. Carter. Associate examiners: In Chicago: Drs. J. T. Groat, H. P. Saunders, J. M. D. Olmstead and George P. Dreyer. In St. Louis: Drs. Frank N. Wilson, R. J. Terry and Don R. Joseph.

Written Examination.—(Answer any five questions): 1. (a) What is the cause of the rhythmic contractions of the heart? (b) Where does the contraction have its origin and how is it conducted to the different parts of the mammalian heart? 2. Describe the normal movements of the stomach and the mechanism controlling the action of the pyloric sphincter. 3. Tell how the excretion of urine may be influenced: (a) By changes in the general circulation, and (b) By changes in the circulation within the kidney. 4. (a) Describe the structural changes which take place in the peripheral end of a nerve after it has been severed and united by primary suture. (b) How much time is required for the restoration of function, and what changes take place in the electrical reactions of the muscles supplied by the nerve? 5. What results (a) from destruction and (b) from the administration of extracts of different parts of the pituitary body? 6. (a) State briefly in what ways glycosuria may be produced experimentally in animals. (b) Discuss the "sugar tolerance" test or alimentary tolerance for glucose as an index of carbohydrate metabolism in man.

Practical Examination.—Determine the blood pressure in man by the auscultatory method in the recumbent and erect postures, and record the systolic, diastolic, mean and pulse pressure in each case. Explain the effect of the postural change. Explain from tracings furnished the effects produced on respiration, pulse rate and blood pressure by stimulation (1) of the central end of a divided vagus; (2) a mixed spinal nerve. Explain from tracings the effects of applying the Gaskell clamp or the ligature of Stannius to the frog's heart. Take a tracing of the arterial pulse with a sphygmograph. Describe the features of the arterial and venous pulse in tracings furnished. With a muscle preparation arranged, record the minimal and maximal simple contractions; also complete tetanus. Explain, from the blood pressure tracings furnished, the effects of stimulating the distal end of the cut splanchnic nerve; of stimulating the depressor nerve. Demonstrate the "light" and "accommodation" reflexes of the pupil, and explain the purpose of each reaction.

SURGERY

Examiners, Dr. E. Wyllys Andrews and Col. Louis A. LaGarde. Associate examiners: Operative surgery: In Chicago: Drs. D. B. Phenister, G. L. McWhorter, Linn F. McBride, A. H. Montgomery, M. Hanchett, Gatewood, Edmund Andrews, Carl B. Doris. Clinical surgery: Drs. Karl A. Meyer, R. W. Nealy, Kellogg Speed, Frederic Besley, William R. Cubbins and F. G. Dyas. Surgical specialties: Examiners: Eye, Ear, Nose and Throat: Drs. Herbert Harlan and David Strickler. Skin: Dr. Isadore Dyer. Associate examiners: In Chicago: Skin: Drs. Edward A. Oliver and T. E. Senear. Ear, nose and throat: Drs. E. K. Findlay, D. J. Holinger, E. V. L. Brown and G. W. Boat. In St. Louis: Operative surgery: Drs. A. O. Fisher, W. E. Leighton and Max W. Myer. Clinical surgery: Drs. Edwin P. Lehman, Barney Brooks and Everts A. Graham. Surgical specialties: Eye: Drs. E. T. Sensensy, W. E. Shahan, William F. Hardy and Joseph M. Keller. Ear: Drs. H. W. Lyman, J. B. Shapleigh and C. F. Fingsten. Nose and throat: Drs. Greenfield Sluder, William M. C. Bryan and M. F. Arbuckle. Skin: Drs. M. A. Engman and Joseph Grindon.

Written Examination.—(Answer first seven questions; choose three from last five): 1. Indications for decompression of the brain: (a) Subtemporal. (b) Subtemporal. 2. Discuss the surgical management of toxic goiter. 3. Surgical management of empyema: (a) Caused by *Streptococcus hemolyticus*. (b) Pneumococcus. 4. Differential diagnosis of chronic obstruction at the pylorus, ileocecal valve and sigmoid flexure. 5. Treatment of gunshot wound of the liver. 6. Give indications for and technic of the operation of cholecystectomy. 7. Discuss chronic ulcer of the stomach from the standpoint of its complications and sequelae. 8. Treatment of compound fracture of both bones of the forearm just above the wrist-joint. 9. Varieties and diagnosis of dislocations of the humerus. 10. Discuss the diagnosis, prognosis and treatment of malignant pustule. 11. Differential diagnosis between shock and internal hemorrhage. 12. Discuss advantages and disadvantages of: (a) Open method of administering anesthetics. (b) Closed method of administering anesthetics.

Operative Surgery.—Each candidate was given one operation on a dog previously killed by ether from the following list: trephine; tracheotomy; thoracotomy; lateral intestinal anastomosis; etc.

Clinical Surgery.—This was held in the wards of the Cook County Hospital, Chicago, and the City and Barnes Hospital, St. Louis. Each candidate was given at least three cases and these were chosen from the following: fracture of hip; fracture of tibia and fibula; fracture of femur; supracondylar; leg ulcers; abscess of the neck; obstructive jaundice; carcinoma of stomach; carcinoma of rectum; tuberculous peritonitis; empyema, etc.

PATHOLOGY

Examiner, Dr. Louis B. Wilson; associate examiner, Dr. Eugene L. Opie, St. Louis.

Written Examination.—(Answer the first and any other four of the following questions): 1. (a) Describe in detail necropsy technic, including methods for the preservation of tissues. (b) In how many postmortems have you taken part? (c) How many more have you observed? 2. Discuss the pathology of epidemic influenza. 3. Discuss wound healing. 4. Discuss the pathology of chronic interstitial nephritis. 5. Give the distinguishing characteristics, gross and microscopic, of benign and malignant overgrowths of the uterine mucosa in women past the climacteric. 6. Contrast in parallel columns: (a) the blood pictures; (b) the gross pathologic changes, and (c) the histologic changes in pernicious anemia and lymphatic leukemia. 7. (a) Discuss the criteria of malignancy. (b) Name five tumors, giving sites, which are malignant. (c) Name five tumors, giving sites, which are not malignant.

Laboratory Examination.—During the written examination each candidate was given gross specimens and microscopic sections chosen from the following: cancer of breast, cancer of uterus, congenital cystic kidney; amebic abscess of liver; pyemic lung; lobar pneumonia; tuberculous lung; hypertrophic heart; contracted kidneys; vegetative endocarditis (*Streptococcus viridans*); aortic aneurysm; duodenal ulcer; cancer of the pylorus involving the head of the pancreas; tuberculous ulcers of the small intestine; typhoid hyperplasia of small intestine; fat necrosis; tuberculous peritonitis; colloid goiter; infarct of spleen; osteosarcoma of tibia; Pott's spine; osteomyelitis. Microscopic: cancer of breast; cancer of lip; tuberculosis of lung; chronic nephritis; tuberculosis of bone; exophthalmic goiter; cancer of uterus.

OBSTETRICS

Examiner, Dr. Austin Flint; associate examiners: In Chicago: Drs. W. G. Lee, D. S. Hillis and W. F. Hewitt. In St. Louis: Drs. A. S. Schlossstein and Otto H. Schwarz.

Written Examination.—1. (a) From the time of conception, what are the sources from which the ovum (and subsequently the embryo) draws its nourishment? (b) What changes take place in a woman at the menopause? 2. Describe the mechanism of labor: (a) In a simple flat pelvis, moderate degree, cephalic presentation. (b) In a normal pelvis, head extended, chin anterior. 3. (a) What are the symptoms indicating low implantation of the placenta? (b) Describe the management of such a case in labor at term, membrane unruptured, vertex presentation, cervix three fingers dilated. 4. What are the indications for (a) cesarean section; (b) version with breech extraction; (c) midpelvic forceps operation? 5. Describe the treatment of: (a) Puerperal septicemia. (b) Threatened eclampsia at the thirty-sixth week of pregnancy.

GYNECOLOGY

1. In a doubtful case, how would you proceed to establish the diagnosis of gonorrhea in a woman? 2. Give the differential diagnosis between: (a) Acute septic salpingitis and tubal pregnancy threatening rupture. (b) Intraligamentous ovarian cyst and fibroid of the uterus. 3. Describe in detail an operation for the repair of a complete tear of the perineum. 4. What are the indications and contraindications for the use of vaginal tampons, ring pessaries and stem pessaries? 5. Discuss the advantages and disadvantages of removing both ovaries and tubes when doing a hysterectomy for fibroids.

Oral Tests.—During the written examination each candidate was required to make demonstrations on the manikin and to explain different obstetric operations.

BACTERIOLOGY, SEROLOGY AND PARASITOLOGY

Examiner, Admiral E. R. Stitt. Associate Examiners: In Chicago: Drs. Arthur I. Kendall and D. J. Davis. In St. Louis: Drs. M. S. Fleisher and L. S. N. Walsh.

Written Examination.—1. (a) Give a simple method of culturing anaerobes. (b) Briefly discuss the subject of botulism, giving name and characteristics of causative organism, and practical importance of the infection. (c) What do you know concerning *Bacillus fusiformis*? 2. How has the recent epidemic of influenza altered our views as to the etiology of the disease? Prepare a concise statement not exceeding three pages. 3. (a) Briefly discuss the nonpathogenic acid-fast bacteria and method of differentiation from the tubercle bacillus. (b) What are the usually recognized types of tubercle bacillus, and discuss their relation to clinical types of tuberculosis in man? (c) Name the diseases in which the question of secondary infection is of importance. 4. (a) Discuss serologic methods of separating meningococcus groups from one another and from the gram-negative organisms frequently isolated from the nasopharynx. (b) Name the diseases against which prophylactic vaccination has been of value during the World War. (c) Briefly discuss methods of desensitization. 5. (a) Name the common trematode, cestode and nematode parasites of man (give only four in each group with zoological and common name). (b) How do the sexual forms of estivo-autumnal malaria differ from the nonsexual ones? (c) What is the nature of the parasite causing African sleeping sickness?

Laboratory Examination.—The examiner is provided with tubes, plates, etc., of various standard culture mediums. The candidate is examined as to the composition, uses, technic of inoculation and study of these. There are also provided plates of plain agar, blood agar, etc., showing colonies, and the candidate is examined as to his ability to recognize and discuss colony characteristics with the unaided eye and magnifying glass. Various serologic preparations, such as Wassermann or other complement fixation tests, microscopic agglutination, precipitin reactions, etc., are provided, and interpretation of these is required. Specimens of intestinal parasites and their ova, together with stained smears of blood preparation of parasites, will be given the candidate for identification.

HYGIENE

Examiners, Surgeon-General Rupert Blue, U. S. P. H. S.; Col. W. C. Rucker, Assistant Surgeon-General, U. S. P. H. S.

Written Examination.—1. What points should be stressed in the sanitary inspection of a public restaurant? 2. What directions should a practicing physician give to prevent the familial spread of whooping-cough? 3. Briefly outline the various methods of water purification. 4. Discuss mental hygiene in the home. 5. How would you prevent the spread of smallpox in a hotel?

MEDICAL JURISPRUDENCE

Examiner, Dr. Isadore Dyer.

Written Examination.—1. State generally the causes for which a license to practice medicine can be revoked. 2. Describe the Harrison act as it applies to the practice of medicine. 3. What do you understand by vital statistics, their scope and purpose? 4. State what you understand by the term "quarantine" as applied to contagious and reportable diseases. 5. A man employed in a factory, while carrying a box of goods upstairs, falls against a loosened steam pipe and is scalded over an area about 6 inches square in the lumbar region. In claiming damages he bases the claim on the severe burn received. Examination in court is ordered one year after the accident. What condition would you expect to find in evidence? (a) If he had a burn of the first degree? (b) If he had a burn of the second degree?

Book Notices

COLLECTED STUDIES ON THE PATHOLOGY OF WAR GAS POISONING. From the Department of Pathology and Bacteriology, Medical Science Section, Chemical Warfare Service. Under the Direction of M. C. Winternitz, Major M.C., U.S.A. Published with the Consent of the Surgeon General, U. S. Army, and the Director, Chemical Warfare Service. Cloth. Price, \$20. Pp. 165, with illustrations. New Haven: Yale University Press, 1920.

This magnificently printed book contains a complete review of experimental work on the pathologic changes observed in experimental animals subjected to various war gases, during the investigations carried out with these substances at Yale University and at the American University at Washington, D. C., under the direction of the Bureau of Mines and the Chemical Warfare Service. The effects of chlorine, phosgen, chlorpicrin, superpalite, "mustard" gas, cyanogen chlorid and bromid, arsin and organic arsenic compounds are described. These studies have been carried out in great detail, with especial reference to the comparative features of poisoning with the different gases. No human material is described, thus differing from the monograph on "mustard" poisoning by Warthin and Weller, recently reviewed in these columns. The importance of the breaking down of resistance to bacterial infection from mouth organisms is especially emphasized. Particular stress is laid on what the author believes to be evidence that edema within the lungs is of itself not so important a factor in causing symptoms or death as has commonly been believed. It is stated that up to 20 c.c. of salt solution per kilogram of animal, or from 200 to 400 c.c. for an ordinary size dog, can be injected directly into the trachea without harm, although the lung is so completely filled with this salt solution that the excess begins to come back. It is also stated that as much as 3,000 c.c. of salt solution has been injected into the trachea of a dog in thirty minutes without any serious harm being observed. In these experiments the lungs are flooded with salt solution, and as the solution ceases to flow out of the trachea and mouth they are again flooded; or else a continuous small stream is allowed to flow into the lung throughout the experiment. Experiments showed that the salt solution had not simply short-circuited through the bronchi and out again but had entered the alveoli extensively. The salt solution that remains in the lung after the experiment is absorbed within three or four days. It is suggested that such irrigation of the lung might even be possible as a therapeutic method under certain conditions, since materials employed as indicators can be washed out of the lungs by this means. It is not made clear how the animal escapes drowning in such an experiment, or how it is able to carry on respiration with the respiratory passages full of fluid.

The justification for so expensive a form of reproduction of research work is certainly open to question. The selling price of this book of 165 pages is \$20, which means, of course, that its circulation will be virtually limited to distribution copies and to the files of a few libraries. The expense is chiefly from the presence of forty-one large colored

plates and a great number of black and white illustrations. Even the excellence of these plates will seem to many scarcely to justify the expense of reproducing all of them, since in most respects the information given by many of the plates can be adequately conveyed by descriptions in the text. Such simple conditions as ordinary pulmonary edema or congestion of the pulmonary capillaries are made the subjects of special colored plates.

LEHRBUCH DER AUGENHEILKUNDE. Von Dr. Paul Römer, Geh. Medizinalrat, o. ö. Professor der Augenheilkunde. Third edition. Paper. Price, 30 marks. Pp. 496, with 297 illustrations. Berlin: Urban & Schwarzenberg, 1919.

The third German edition of Roemer's textbook is an improvement on its predecessors in its reduced size and in the fact that less emphasis is placed on theoretical matters. Much of absorbing interest to the specialist, however, is found along these lines, for instance, his vigorous attack on the prevailing Leber theory of the constant formation and circulation of the aqueous humor, and Grawitz's contention that the leukocytes of corneal inflammation and repair are derived from the fixed corneal cells, and that the most constant finding in fresh glaucoma eyes is an edema of the back of the eye due to a swelling of the vascular tunic. Roemer accepts the Fuchs findings in sympathetic ophthalmia, and deals a hard blow to Elschnig's anaphylactic theory in a single short paragraph. He makes the points first, that anaphylactic phenomena are in no way concerned with the origination of inflammation, as contended by Elschnig, but represent only the expression of the protective capacity of our organism against protein products, and, second, that resorption of one's own injured uveal tissue cannot lead to oversusceptibility of one's organism, because there is no such thing as autoanaphylaxis. Among the newer things, one may note the irrigation treatment in ophthalmia, the description of "inclusion blennorrhoea" in the new form, and the use of gentian violet along with zinc in angular conjunctivitis, ethylhydrocuprein in serpentine ulcer, benzosalin in sympathetic ophthalmia, and bloodletting and chloral hydrate to control acute congestive glaucoma. He gives first place among operations to trephining in both chronic congestive and simple glaucoma. There is an excellent chapter on the Wassermann reaction and another on tuberculin in diagnosis. One is astonished, however, to find "rheumatism" still given in the etiology of iritis, and no mention of focal infections. Possibly American medicine is a bit conscious of its own achievements, nowadays, but we can see no justification for ignoring the name of Buller in connection with the shield of the other eye in gonorrheal ophthalmia; of the Ferdinand Hotz trachoma operation, or of the brilliant work of Woodyatt in reducing intra-ocular tension by means of intravenous glucose injections. The work is well supplied with colored plates, and is helped by marginal notes and short topic sentences. For the first time in any eye textbook, public health matters and measures, such as school examinations, compulsory notification of gonorrheal ophthalmia, and the prevention of trachoma and eye accidents, are given the special consideration and strong emphasis they should have.

HANDBOOK OF ANAESTHETICS. By J. Stuart Ross, M.B., Ch.B., F.R.C.S.E., Lecturer in Practical Anaesthetics, University of Edinburgh. Introduction by Hy. Alexis Thompson, C.M.G., M.D., F.R.C.S.E., Professor of Surgery, University of Edinburgh. Chapters upon Local and Spinal Anaesthesia by William Quarry Wood, M.D., F.R.C.S.E., Lately Temporary Assistant Surgeon, Edinburgh, Royal Infirmary, and upon Intratracheal Anaesthesia by H. Torrance Thomson, M.D., F.R.C.S.E., Anaesthetist to the Leith Hospital. Cloth. Price, \$2.50. Pp. 214 with illustrations. New York: William Wood & Co., 1919.

This is a convenient pocket edition on the subject, useful for students taking the course. It is well written, and good suggestions are made for recognizing, and also avoiding the danger zones of anesthesia. Ross dwells lightly on several theories of shock without giving anything new or conclusive on the subject. He is instructor in a Scottish university, and he describes at length the various forms of anesthetic apparatus used at home, while giving only passing notice of those used in America. He advocates the use of preanesthetic narcotics, which is sound in practice, and is gaining in popularity in this country.

Medicolegal

Admissibility of Evidence Touching Mental Capacity—Imbecility

(*State v. Kelsie (Vt.)*, 108 Atl. R. 391)

The Supreme Court of Vermont, in overruling exceptions in this case, in which there was a conviction of murder in the first degree, says that the defendant called a physician as a witness, and, having qualified him as an expert in mental diseases, and having shown by him the examinations, observations and tests to which the defendant was subjected, he drew from the witness the statement that as a result the witness had reached the conclusion that the defendant, who was then nearly 34 years of age, had the mental capacity of a child only 8 years old. The witness was then asked how, from a medical standpoint, an adult of that mentality is classified, and replied, "As an imbecile." On motion by the state, that answer was stricken out. The witness was then asked, "From your observations and tests, Doctor, what would you say Mr. Kelsie is?" This question was objected to by the state, and was excluded by the trial court. Assuming for the purposes of this discussion that it was sufficiently apparent that he would have answered that he regarded the defendant as an imbecile, the ruling was without error. Such an answer would have added nothing to the testimony of the physician, as given. He was allowed to give, and did give, during his examination and cross-examination a very clear, comprehensive and intelligent account of the various tests that were applied to the accused to determine his physical condition and his mental development, together with his responses and reactions, and from it all gave his conclusion that the accused was mentally and morally an 8 year old boy. The purpose of this evidence was apparent. At common law an infant under the age of 7 years was conclusively presumed to be incapable of committing a crime. Between 7 and 14, he was presumed to be incapable, but the fact might be shown otherwise. Above 14, he was presumed to be capable, but this presumption was rebuttable. So if common-law rules were to be applied, the defendant had by this evidence, if believed, raised a presumption of his incapacity, and made a jury question of it. If the witness had added that he regarded Kelsie an imbecile, the statement would have afforded the jury no additional aid in estimating the man's mentality. For the term "imbecile" has no fixed meaning in the law, and would require definition by the witness to ascertain the meaning which he ascribed to it. There are grades of imbecility, just as there are grades in insanity, and in the matter of criminal responsibility, the law makes no distinction between imbecility and insanity. The test of the law in all cases is, Did the accused, as applied to the act in question, have the mental capacity to understand the character, consequences and quality of such act, and successfully to resist the impulse to do it?

Another physician was a witness for the defense, and testified that when the defendant was a child he treated him for epilepsy. When the physician mentioned first was under cross-examination by the state's attorney, he was asked if in his examinations of the defendant he discovered any signs of epilepsy, and subject to exception he replied that he did not. The only objection made to this question and answer was that the defendant did not examine this witness regarding epilepsy. But the rule that the cross-examination is circumscribed by the direct examination does not mean that a cross-examiner is limited to the specific inquiries of the examiner. A witness may be cross-examined in respect of his examination in chief in all its bearings, and as to anything that tends to explain, characterize or modify what he has therein stated. The mental and physical symptoms and conditions of the defendant were the most prominent features of the direct testimony of this witness. Anything germane to those subjects and pertinent to the questions involved in the trial was a proper matter of inquiry in cross-examination. Specific reference to epilepsy in the examination in chief was not necessary to make proper in cross-examination the question objected to; and this ruling, too, was without error.

Care Required in Selecting and Retaining Physician*(Woody v. Carolina Spruce Co. (N. C.), 101 S. E. R. 258)*

The Supreme Court of North Carolina, on the third appearance before it of this case, affirms a judgment in favor of the plaintiff, who sued the defendant company for damages which he alleged that he had sustained through the negligence and malpractice of a physician employed by the defendant but compensated by sums collected monthly from its employees, of whom the plaintiff was one when he was injured and required the services of the physician. The court said before that the defendant was under no legal obligation to employ a physician to treat its employees, but when it assumed to do so and to deduct a monthly sum from their wages for medical attention, it was under obligation to exercise due care in selecting the physician and in continuing him in its service. To the same effect the court now holds that there was no error in instructing the jury in substance that if it found by the greater weight of the evidence that the defendant engaged the physician in question to treat the plaintiff and other employees, and after it had notice of his incompetence and unskilfulness, it continued him in its employment, the jury should find the defendant negligent in so continuing him in its employment. The defendant owed the duty to the plaintiff, after it had undertaken to secure a physician for him, to secure one of reasonable skill and ability. There was no other physician, so far as it appeared, immediately at hand, and the plaintiff had paid his assessments for the employment of the company's physician, and, though he may have had doubts as to his competence, when the president of the company assured him that the fracture was simple and that he and the physician could set the fracture as well as any one, the plaintiff was not guilty of contributory negligence, nor did he assume the risk, by trusting to the assurance of the president, under the circumstances of the case. The reply of the president was equivalent to telling the plaintiff that the company would not employ any other physician, and that the plaintiff had to take the service offered to him or go without medical treatment.

Who Must Make Required Inquiry Before Corpses May Be Used for Dissection*(Burke et al. v. New York University (N. Y.), 179 N. Y. Supp. 626)*

The Supreme Court of New York, Special Term, New York County, in sustaining a demurrer to the complaint, with leave to the plaintiffs to serve an amended complaint, says that the action was brought by the children of a man who had died in a hospital, to recover damages for injury to their feelings due to the act of the defendant, through its medical department, in dissecting the body of their deceased parent. After the father's death his body had been taken to the morgue, which delivered it to the defendant. Now Section 316 of the Public Health Law of New York not only permits, but in certain cases requires, morgues and other institutions and persons named to deliver any corpse in their possession not placed there by relatives or friends for keeping or burial to medical institutions like the defendant. The statute prohibits such delivery or receipt, however, of the corpse of any person "known to have relatives or friends, without the assent of such relatives or friends." The court takes it that these words necessarily mean known to the institution charged with the wrongful receiving of a corpse, or, what is equivalent to knowledge, lack of reasonable inquiry. But the statute seems to place on the persons having control of the institutions mentioned and having possession of such corpses the duty of ascertaining whether any particular corpse is one "which may be delivered . . . under this section." The persons so in control in this case were those who had charge of the morgue, and the statute would appear to have placed on them the duty of making inquiry to ascertain whether the particular corpse was that of a person "known to have relatives or friends." Since it was their duty to make such inquiry, it is not apparent that any useful purpose would be accomplished by requiring the defendant to make the same inquiry over again, and, in the absence of plain language to that effect, the statute should not be held to have intended duplication of inquiry.

Society Proceedings**COMING MEETINGS**

Canadian Medical Association, Vancouver, B. C., June 22-25.
Maine Medical Association, Augusta, June 29-30.
Montana State Medical Association, Helena, July 14-15.
Nevada State Medical Association, Lake Tahoe, June 25-26.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., May 3, 1920

(Continued from page 1669)

Clinical and Electrocardiographic Observations on Inversion and Other Anomalies of the P Wave

DR. WALKER W. HAMBURG, Chicago: Eighteen cases of inversion of the P wave (migration of the pacemaker) are reported: twelve cases with normal rhythm and six cases with arrhythmia (auricular extrasystoles). Inversion of the P wave is most frequent in Lead 3; five cases showed inversion in Leads 2 and 3, and one case, Leads 1, 2 and 3; five cases showed a diphasic P; four cases, bifurcated P. Analysis of these cases discloses that the majority of them suffer with varying degrees of myocardial insufficiency and are associated with acute or chronic infectious processes. In addition, evidence of vagal influence is frequent, as shown by disturbances in respiration, effect of atropin, occurrence in vagotonic individuals, etc. Electrocardiographic study of cases showing inverted P, or of cases occurring in suspect vagotonic individuals should include the effect of (a) deep breathing, (b) change of posture, (c) atropin and (d) the effort test.

Results of Antemortem Lung Punctures in Lobar Pneumonia; Their Bearing on the Mechanism of Crisis

DRS. HENRY M. THOMAS, JR., and FREDERIC PARKER, JR., Boston: Study of lung puncture performed to hasten or confirm bacteriologic diagnosis of lobar pneumonia yields interesting facts. Incidentally, the procedure of puncturing solid lung was entirely innocuous. It was found that the mortality of patients yielding viable organisms by lung punctures after the fifth day of disease was 56 per cent., whereas patients yielding no organisms by lung puncture, no matter what day of the disease, with two exceptions, recovered. Positive lung punctures were obtained, however, just before, during and just after crisis in a few cases. These facts seem to indicate that destruction of the organisms is the first step toward recovery, but also that crisis may occur before the organisms have been entirely killed, or several days after. That definite antibacterial properties are developed in the blood has been shown by many investigators; but that these properties are in any way efficacious in combating the toxic manifestations of lobar pneumonia has not been claimed. We offer our results as further evidence that two mechanisms—antibacterial and detoxifying—act, in a measure, independently. That the second mechanism may be brought about by a sudden change in ferment-antiferment balance seems quite likely, but the possibility of true toxin-antitoxin reaction has not been definitely ruled out.

DR. FREDERICK T. LORD, Boston: There are certain considerations which suggest, as Dr. Thomas has mentioned, that a dual mechanism may be responsible for recovery from lobar pneumonia. The demonstration in small amount of protective substances in the blood at about the time of the crisis and the presence of agglutinins and bacteriotropic substances, operative against the homologous organism, suggest that humoral immunity is of importance in recovery and may serve to check the septicemia and limit the spread of the local lesion. There are, however, certain observations in conflict with the humoral theory as an entirely satisfactory and complete explanation of recovery. The humoral factors are, for example, less constantly and strikingly demonstrable than might be expected were they the sole explanation of so

decisive an event as the crisis. Blake and Cecil's observation that monkeys with experimental pneumonia may die with septicemia and the local lesion be found at necropsy to be undergoing resolution may have a bearing on this matter. In such cases it is suggestive that humoral immunity may fail, while certain local factors influencing recovery may succeed. In human cases the successive pneumonic invasion of different lobes may be observed during life, with recession of the earlier lesions coincident with the spread of the later processes. At necropsy it is not uncommon to find in the same subject several pneumonic areas in different stages of development. At times a consolidated area previously recognized during life may be found at necropsy to have undergone almost complete resolution, while one or more areas are in a stage of earlier development. Recovery from lobar pneumonia fails to confer any considerable or lasting protection against subsequent attacks. A repetition of pneumonia in certain persons is so common as to suggest that the duration of humoral immunity is short, and may actually give place to a condition of increased susceptibility. Relapsing pneumonia within a few days of crisis or lysis is uncommon; but during the last few years we have had one case of Type I, another of Type II and a third of Type III pneumonia with apparent recovery, followed by a second attack due to the same organism after an afebrile interval of only a few days. The occurrence, reported to me by Dr. Benjamin White, in three horses, highly immunized against Type I pneumococcus, of a fatal Type I pneumonia indicates that even a high degree of acquired immunity does not prevent the development and progress of a local lesion. In such cases one may assume that the local factors influencing recovery failed.

In seeking an explanation of the local factors that may influence recovery, our attention has been directed to the chemistry of the pneumonic exudate. From evidence in favor of partial isolation of the pneumonic lung, an increase in the local H ion concentration and the short viability and rapid dissolution of the pneumococcus at an equal degree of acidity, we have been led to believe that local biochemical changes may be of importance in recovery.

Catalase Content of the Blood in Different Types of Anemia

DRS. E. B. KRUMBHAAR and JOHN H. MUSSER, JR., Philadelphia: The catalase content of the blood was compared with the erythrocyte count in nine cases of pernicious anemia, eleven cases of other primary and secondary anemia, and nine normal controls. Contrary to Van Thienen's observation that the catalase content was always relatively high in pernicious anemia, we found that it was as low in this disease as in other anemias, and always lower than in nonanemic persons. The variations in different persons were roughly proportional to the differences in erythrocyte counts, so that the "catalase index" (obtained by dividing the number of cubic centimeters of oxygen liberated by 0.1 c.c. of blood during fifteen minutes by the erythrocyte count expressed in millions) gave very close averages for the three groups (pernicious anemias, 28.6; other anemias, 28; normal cases, 32.7). In anemia following experimental splenectomy the catalase content of the blood fell; when the blood picture improved after removal of a diseased spleen, the catalase content increased; but in both cases the index remained approximately unchanged.

Effect of Small Doses of Roentgen-Ray on Lymphoid Deposits

DR. JAMES B. MURPHY, New York: It is a matter of common observation that lymphoid tissue is more vulnerable to infections than are other tissues; also it is well known that in these tissues infections tend to persist and are less amenable to treatment than in other tissues. Since such a state is peculiarly characteristic to this tissue, it would seem that the lymphoid elements constitute an important contributing factor, and, if this is true, a reduction of these elements in infected lymphoid tissue might so alter the course of infection that its tendency to persist would be diminished. The utilization of the roentgen ray affords a method of approach to such an experimental investigation, since through the selective action of the roentgen ray for the lymphoid ele-

ments it may be hoped to effect a considerable reduction of them and at the same time do no injury to other tissue elements.

Infected tonsils seemed to offer suitable material to which this method of investigation might be applied, and preliminary observations on results obtained were most satisfactory. A number of patients with infected tonsils have been selected from various clinics by those in charge of the clinics and sent to us for treatment and observation. These have included types of hypertrophied and atrophic infected tonsils, with characteristic involvement of the surrounding tissues, associated with constitutional disturbances. After noting the general condition of tonsils and neighboring tissues, cultures on blood agar have been prepared from material obtained by passing a sterile platinum loop into the crypts of the tonsils, and from the postnasal vault. Immediately following this procedure, crossfire treatments of filtered roentgen ray have been given. These patients have then returned at weekly intervals for further observation, at each visit additional notes have been made and cultures again made. The original cultures from all individuals showed either hemolytic streptococci or hemolytic staphylococci.

The results following the roentgen-ray treatment are striking. After the first week the injection of the surrounding tissues has disappeared, as also has excess lymphoid tissue previously noted along the margins of the pillars; and where accumulations of tissue had been noted in the postpharynx, it is seen to be definitely lessened in amount. By the third week and after, cultures are free from the hemolytic cocci previously recovered in abundance. When tonsils were at the beginning hypertrophied, they are seen to be much diminished in size. It would seem in the light of the results briefly stated that with the elimination of the lymphoid elements from infected lymphoid tissue the course of the infection has been arrested, since no other treatment than the roentgen-ray exposure has been used. While it is yet too soon to form any opinion regarding more remote effects, from a clinical point of view the present observations form a basis for further development and present a possible method of treatment of infected tonsils other than surgical interference.

Chemical Difference Between the Young Erythrocytes from the Blood of Pernicious Anemia Cases and Normal Individuals

DRS. EDWIN LOCKE and T. E. HACKMAN, Boston: Blood specimens from six cases of pernicious anemia showing from 5 to 12 per cent. of reticulated cells, four cases of hemorrhagic (acute) anemia showing from 5 to 12 per cent. of reticulated cells, one case of acquired hemolytic jaundice with 16 per cent. of reticulated cells, two cases of pernicious anemia and four normal cases with less than 1 per cent. of reticulated cells were studied with respect to (1) the resistance of the cells to hypotonic salt solutions; (2) the oxygen consumption of the cells, and (3) proteolysis (loss of amino acid nitrogen) and creatin consumption during incubation at body temperature. The cells from the cases of pernicious anemia with an increased number of reticulated cells showed uniformly less oxygen consumption than the cells from the hemorrhagic cases, and always a marked proteolysis and loss of creatin. The cells from the hemorrhagic cases and the case of hemolytic jaundice showed no proteolysis and from slight to marked gains, but never loss, of creatin. Cells from normal individuals and from cases of pernicious anemia with less than 1 per cent. of reticulated cells showed insignificant variations with respect to oxygen consumption, proteolysis and creatin consumption (or loss). All the cases of pernicious anemia with increased numbers of reticulated cells showed a greater percentage of these cells in the lower than in the higher dilutions of hypotonic salt solutions. The reverse was true in the case of acquired hemolytic jaundice. The findings in the hemorrhagic cases were, in this respect, not constant. These observations suggest that the young erythrocytes seen in pernicious anemia are atypical and biologically less hardy than the "normal" reticulated cells found after acute hemorrhage.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

April, 1920, 76, No. 4

- *Psychosis Associated with Tetany. A. M. Barrett, Ann Arbor, Mich.—p. 373.
- *Nature of Substance Causing Colloidal Gold Reaction. P. G. Weston, Warren, Pa.—p. 393.
- Anticipation of Paresis and Tabes in Syphilitics. S. Brown, Kenilworth, Ill.—p. 397.
- Thymic Reactions in Differentiation of Neurotic from Psychotic Conditions. D. Gregg, Wellesley, Mass.—p. 403.
- Classification of Industrial Applicants. A. W. Stearns.—p. 409.
- Nervous and Mental Disorders of Soldiers. S. Brown.—p. 419.
- Amnesias in War Cases. D. A. Thom and N. Fenton.—p. 437.
- *Neurosyphilis Investigation of Massachusetts Commission on Mental Diseases. O. J. Raeder, Boston.—p. 449.
- Dissociated Personality: Analysis of its Psychologic Problems. E. E. Mayer, Pittsburgh.—p. 465.

Psychosis Associated with Tetany.—From an analysis of cases, Barrett is convinced that there is no specific tetany psychosis, but that the neuromuscular disturbances and the psychosis are both the result of a toxic process affecting the central nervous system. In two cases reported by him this disturbance seems to have had some relationship to disease of the pituitary body.

Nature of Colloidal Gold Precipitating Substance.—According to Weston the colloidal gold precipitating substance in the spinal fluid of paretics is a globulin. It is not the Wassermann reacting substance and can be separated from the latter quantitatively. This explains why there may be a paretic curve in the gold test with either a positive or negative Wassermann reaction.

Neurosyphilis.—A complete recovery mental, physical, and laboratory, after less than five years or ten years or even before death Raeder says may be questioned. An apparently recovered neurosyphilitic may show none of the above signs or findings, yet at necropsy following intercurrent disease of senility, a focus of inactive treponemas may be found to occupy a circumscribed area somewhere in the brain, just as is commonly found an area of fibrosis or calcification in the lungs, the scar of a healed tuberculosis. In 428 cases of neurosyphilis treated during a period of four years, 129 cases or practically 30 per cent. showed definite benefit. One hundred twenty-five patients are under treatment in hospitals of which a certain percentage can be expected to show similar improvement. The relatives (spouses, parents, offspring) of syphilitics and neurosyphilitics form a most important group in which not only syphilis but the earliest degrees of neurosyphilis, in the presymptomatic, often entirely unsuspected, stages, are brought to light by lumbar puncture and sero-analysis. It is in these types that by far the most benefit can be expected.

American Journal of Public Health, Boston

April, 1920, 10, No. 4

- American Public Health Association, Present, Past, and Future. W. S. Rankin, Raleigh, N. C.—p. 297.
- Protective Value of Typhoid Vaccination as Shown by Experience of American Troops in War. G. A. Soper, New York.—p. 301.
- Importance of Confirmatory Colon Bacillus Tests in Fairly Safe Drinking Water. N. Novick, East Norfolk, Mass.—p. 305.
- *Bacteriologic Examination of Soft Drinks. W. R. Stokes, Baltimore.—p. 308.
- Treatment of Beet Sugar Plant Sewage. L. Pearse and S. A. Greeley, Chicago.—p. 312.
- *What Should be the Basis of the Control of Dehydrated Foods? S. C. Prescott, Cambridge, Mass.—p. 324.
- Sociologic Aspects of Housing. I. S. Wile, New York.—p. 327.
- Traffic Regulation as a Means of Preventing Injury and Death from Street Vehicles. S. J. Byrne, Brooklyn.—p. 331.
- Diphtheria Bacillus Stains; Description of a "New" One. H. Albert, Iowa City, Iowa.—p. 334.
- Infant Mortality in Registration Area for Births. W. H. Davis, Washington, D. C.—p. 338.
- Purification of Oysters as Conservation Measure. W. F. Wells, Albany.—p. 342.
- Studies on Viability of Tubercle Bacillus. J. B. Rogers, Cincinnati.—p. 345.

Excessive Mortality from Influenzal Pneumonia Among Bituminous Coal Miners of Ohio in 1918. E. B. Starr, Columbus.—p. 348.

Early School of Public Health at Lyons, France. W. T. Sedgwick, Cambridge, Mass.—p. 352.

Bacteriology of Soft Drinks.—In his examination of about one dozen well known soft drinks Stokes only sought specially for the colon bacillus, but many soft drinks contain variable numbers of bacteria and this large bacterial content may be explained partially by the improper sterilization of bottles. A few bacteria remaining in the bottles may increase in the small quantity of water often left in the bottle after sterilization. Dust organisms getting into the bottles may also resist sterilization even if the bottles are dried properly. This matter may be of some importance in relation to the possibility of intestinal infection, since the organisms which produce so-called food poisoning often find a favorable culture medium in the carbohydrates of these soft drinks.

Use of Dehydrated Vegetables.—From the practical standpoint, Prescott says the use of dehydrated vegetables is to be commended, providing they can be prepared from the best quality of raw material and by methods which conserve the food values to the highest possible degree. The great advantages of dehydration in making possible the utilization of materials which now goes to waste, in reducing the cost of carriage, in their easy transportability to all parts of the world, in the saving of expensive containers and in the stabilization of agriculture and the price of materials, seem incontrovertible and argue strongly for the development of this industry.

American Journal of Roentgenology, New York

April, 1920, 7, No. 4

- Oil Immersed Roentgen Ray Generating Outfits. W. D. Coolidge, Schenectady, N. Y.—p. 181.
- Radium Treatment of Enlarged Thymus Glands in Infants. A. C. Heublein, Hartford, Conn.—p. 191.
- Tests of Roentgen-Ray Intensifying Screens. R. B. Wilsye, Rochester, N. Y.—p. 196.
- Radium in Treatment of Carcinoma of Cervix and Uterus. R. H. Boggs, Pittsburgh.—p. 202.
- Roentgenotherapy in Malignant Disease Within the Abdomen; Reports of Cases. G. E. Pfahler, Philadelphia.—p. 210.

Annals of Otology, Rhinology and Laryngology, St. Louis

December, 1919, 28, No. 4

- Case of Influenza, Followed by Pneumonia, Laryngitis, Otitis Media Suppurativa Acuta, Right Side; Tonsillitis, Hypertrophic; Chronic Bilateral Streptococcus Type. J. H. Bryan, Washington, D. C.—p. 1009.
- Value of Laboratory Examinations in Diagnosis and Prognosis in Oto-Laryngology. S. Oppenheimer and H. J. Spencer, New York.—p. 1012.
- Angiomas of Larynx: Report of Three Cases. G. B. New and C. M. Clark, Rochester, Minn.—p. 1025.
- An Ethmoid Operation. J. A. Pratt, Minneapolis.—p. 1051.
- Maleruption into Nose of Lateral Deciduous Incisor. V. B. Fischer, Boulder, Colo.—p. 1067.
- Case of Otitis Media Suppurative, Chronic, Right, Mastoiditis; Operation followed by Meningitis; Abscess in Temporo-sphenoidal Lobe of Brain. J. H. Bryan, Washington, D. C.—p. 1083.
- Reports for 1918 from Ear and Throat Department of Royal Infirmary, Edinburgh. J. S. Fraser and W. T. Garretson, Salem, Iowa.—p. 1091.
- Conservative Surgery of Lateral Sinus. C. C. Jones, Cincinnati.—p. 1164.

Archives of Diagnosis, New York City

January, 1920, 12, No. 3

- Education and Recreation in the Army. W. G. Haan, U. S. Army.—p. 121.
- Practical Value and Utilization of Wassermann Test in General Practice. R. A. Kilduffe.—p. 125.

Archives of Neurology and Psychiatry, Chicago

May, 1920, 3, No. 5

- An Account of Witch Craze in Salem, with Reference to Some Modern Witch Crazes. C. S. Potts, Philadelphia.—p. 465.
- *Lethargic Encephalitis: Report of Cases and Analysis of Literature. M. E. Alexander and H. E. Allen, Waterbury, Conn.—p. 485.
- *Neurosyphilis and Psychoses. L. G. Lowrey, Boston.—p. 500.
- *Heredity in Exophthalmic Goiter. Report of Two Juvenile Cases. H. Climenko, New York.—p. 530.
- *Curative Influence of Influenza in a Case of Specific Meningomyelitis with Cystitis. C. W. Burr, Philadelphia.—p. 536.

Brain in Lethargic Encephalitis.—One of the cases reported by Alexander and Allen terminated in death. Examination of the brain revealed congestion of the meninges with considerable dilatation of the veins. Over the parietal region there appeared, here and there in the pia arachnoid, a small exudate, following the course of sulci. At the base there was intense congestion with a graying yellow exudate of moderate degree in the region of the optic chiasm. Cultures taken from the exudate and from the cortex of the brain showed no growth. Smears showed red blood cells, lymphocytes, mononuclear cells and an occasional polynuclear cell. No organisms were found with methylene blue and acid fast stains. On section of the formaldehyd hardened brain, the ventricles appeared slightly dilated, but the ependyma and choroid plexuses were normal. Sections from the cortex (parietal and occipital lobes) showed in each instance considerable involvement of the meninges. The blood vessels were dilated and there was an accumulation of inflammatory cells in the pia arachnoid consisting chiefly of lymphocytes and mononuclear cells. The cortical gray and subcortical white matter showed dilated vessels, and here and there capillaries surrounded by a few lymphocytes. Sections of the base of the brain showed most marked involvement in the region of the optic thalamus. Here no hemorrhages were evident, but the capillaries were distended with blood. There was marked perivascular infiltration with lymphocytes and mononuclear cells. In places underneath the pia anachroid and in the substance of the brain an accumulation of lymphoid cells was present. In other places there was a heaping up of endothelial cells of the pia directly in contact with the brain substance. In the pons the vessels were congested, but the perivascular infiltration was less marked. In the medulla, at the floor of the fourth ventricle, the congestion was much more apparent. There were several hemorrhagic areas, the vessels and capillaries were dilated and surrounded by a perivascular infiltration of lymphocytes and mononuclear cells.

Neurosyphilis and Psychoses.—Nineteen cases are presented by Lowrey of which fourteen were undoubted cases of neurosyphilis, one case of pseudoparesis and four had negative physical and equivocal serologic findings. Of the fourteen undoubted cases only four presented clinical evidence from which a diagnosis of neurosyphilis could be made. Since neurosyphilis may exist in association with any type of mental symptoms, and since such states may exist in the absence of any of the usual signs and symptoms of neurosyphilis, Lowrey urges that lumbar puncture should be done at least in all cases which present any atypical features. It is equally important to puncture in cases with any clinical signs of neurosyphilis, since the signs may be misleading.

Hereditary Exophthalmic Goiter.—Climenko's patients were related: mother, two daughters and children of each of these—a boy, in one case and a girl in the other. The transmission was a direct one and along the female line. It is emphasized that the occurrence of exophthalmic goiter in a boy, aged 10, and in a girl, aged 6, is in itself an extremely rare condition.

Curative Effect of Influenza.—Burr's case is an example of the favorable influence exerted by an acute infection—influenza—on an illness of many months' duration, enabling a bedridden woman suffering from an old meningomyelitis, with severe cystitis, to recover sufficiently to do housework.

Boston Medical and Surgical Journal

May 27, 1920, 182, No. 22

John Hunter at Oxford. H. Viets, Boston.—p. 545.

Fracture of Posterior Tubercle of Astragalus vs. Inconstant Os Trigonum. F. W. O'Brien, Boston.—p. 548.

Urological Cases. W. C. Quinby, Boston.—p. 551.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

February, 1920, 12, No. 5

Argument in Favor of Establishment of Medical Newspaper Comparable to Trade Journal of Other Walks of Life. B. M. Bernheim, Baltimore.—p. 81.

Colorado Medicine, Denver

April, 1920, 17, No. 4

Artificial Menopause Induced by the Roentgen Ray. C. E. Giffin, Boulder.—p. 84.

Personal Reminiscences of Earlier Years of Sir William Osler. E. J. A. Rogers, Denver.—p. 88.

Hernias in Children. L. J. Weldon, Denver.—p. 95.

Complete Epispadias; Review of Literature. L. I. Miller, Denver.—p. 97.

Florida Medical Association Journal, St. Augustine and Jacksonville

March, 1920, 6, No. 9

Care and Individuality in Obstetrics. J. H. Bickerstaff, Pensacola.—p. 168.

Motor Insufficiency and Dilation of Stomach with Therapeutic Suggestions. G. M. Niles, Atlanta, Ga.—p. 170.

Georgia Medical Association Journal, Atlanta

April, 1920, 9, No. 12

Essential Factors in Public Defense Against Venereal Disease. R. L. DeSaussure, Rome.—p. 85.

What We Have Done in Georgia to Aid in Control of Venereal Diseases. J. P. Bowdoin, Atlanta.—p. 88.

Economic Value of Early Diagnosis and Treatment in Hand Infections. R. H. Wicker, Rome.—p. 91.

Toxic Tonsils. W. C. Lyle, Atlanta.—p. 93.

Radium Therapy for Uterine Hemorrhages. O. D. Hall, Atlanta.—p. 95.

Iowa State Medical Society Journal, Des Moines

April 15, 1920, 10, No. 4.

Rest in Tuberculosis. H. V. Scarborough, Oakdale.—p. 98.

Roentgenology in Diagnosis of Incipient Tuberculosis. A. W. Erskine, Cedar Rapids.—p. 104.

Nerve Injuries of War. A. B. Phillips, Clear Lake.—p. 106.

Relation of Day Schools for Deaf to State Institution. H. G. Langworthy, Dubuque.—p. 108.

Instruction of Deaf. H. W. Rothert, Council Bluffs.—p. 109.

Medical Education in Iowa. D. S. Fairchild, Clinton.—p. 113.

Brief History of Mobile Hospital No. 1. D. Macrae, Jr., Council Bluffs.—p. 118.

May 15, 1920, 10, No. 5

Value of Military Surgery in Civilian Practice. G. W. Crile, Cleveland.—p. 137.

Surgical Management of Gastric and Duodenal Ulcer. J. E. O'Keefe, Waterloo.—p. 142.

Epilepsy. E. M. Williams, Sioux City.—p. 149.

Journal of Orthopedic Surgery, Lincoln, Neb.

May, 1920, 2, No. 5

*Habitual Dislocation of Shoulder Joint. R. Ollerenshaw, Manchester, England.—p. 255.

*Syphilitic and Tuberculous Joints. P. W. Roberts, New York.—p. 265.

*An Unusual Abnormality of Elbow Joint. L. T. Brown.—p. 268.

Birth Paralysis. H. Platt, Manchester, England.—p. 272.

Habitual Dislocation of Shoulder.—In Ollerenshaw's opinion the deltoid muscle flap operation offers the best means of overcoming the tendency to dislocation because it provides, first, a good sling bracing up the head and neck of the humerus and, second, a muscular sling which contracts when the rest of the deltoid is in action, that is to say, in abduction of the arm, in which position the dislocation occurs.

Syphilitic and Tuberculous Joints.—Roberts has observed more than 200 cases of chronic destructive joint disease with symptoms usually ascribed to tuberculosis which, from their behavior under mercury and potassium iodid, their suggestive family histories, and the presence in many of the patients of dental stigmata, it is reasonable to believe were syphilitic.

Abnormal Spur at Elbow Joint.—In Brown's case a spur formation was present on the inner side of the ulna at the joint line. The spur was so large that it overlapped and curved around the internal side of the trochlea surface of the humerus. At the tip of this spur was a small bony mass which was not connected by bone trabeculae to the spur. There was also a slight amount of hypertrophic arthritis at other parts of the joint. Flexion and extension were limited in degree.

Kansas Medical Society Journal, Topeka

April, 1920, 20, No. 4

Empyema Complicating Influenza. T. J. Carter, Wichita.—p. 89.

Treatment of War Amputated. T. G. Orr, Kansas City.—p. 92.

Protein Therapy in Hodgkin's Disease. W. E. McVey, Topeka, and D. D. Wilson, Nortonville.—p. 96.

May, 1920, 20, No. 5

Myocardial Diseases and Cholelithiasis. M. T. Sudler, Rosedale.—p. 119.

Child Welfare in Kansas. L. A. DeVilbiss, Ottawa.—p. 120.

Nasal Accessory Sinusitis. L. B. Spake, Kansas City.—p. 123.

Kentucky Medical Journal, Bowling Green

May, 1920, 18, No. 5

Auricular Flutter and Use of Electrocardiograph. L. K. Baldauf, Louisville.—p. 151.

Auricular Fibrillation and Auricular Flutter. F. C. Askenstedt, Louisville.—p. 155.

*Appendiceal Abscess Rupturing Through Back. C. B. Spalding, Louisville.—p. 159.

Suffocative Pneumothorax in a Child Aged Five Years. E. F. Katzmann, Louisville.—p. 160.

Two Cases of Pernicious Anemia. C. G. Lucas, Louisville.—p. 161.

Treatment of Rectal Carcinoma. G. S. Hanes, Louisville.—p. 163.

Few Conditions Treated by Means of Neosalvarsan Other than Syphilis Dating from 1914 to Date. S. J. Rose, Winchester.—p. 169.

Influenza as I Saw It. T. H. Hardesty, St. Mary.—p. 170.

Influenza. G. R. Keen, Scottsville.—p. 172.

Treatment of Influenza. S. S. McReynolds, Russellville.—p. 174.

Report of Case. Z. A. Thompson, Pikeville.—p. 175.

Surgery in Rural Districts. C. C. Howard, Glasgow.—p. 176.

Trachoma. J. N. Bailey, Paducah.—p. 177.

Imperforate Anus; Case Report. C. Skinner, Louisville.—p. 178.

Rupture of Appendiceal Abscess Through Back.—In Spalding's case an abscess had formed seventeen years previously half way between the vertebrae and the crest of the ileum on the right side posteriorly, which was opened without the use of anesthesia. A large quantity of pus drained at the time, and the sinus continued to discharge for nine months. At the age of 17 the sinus reopened and discharged for one month. Her health then remained fairly good until an attack of supposed "rheumatism" for which she was treated more than a year, and which culminated in an abscess opening on the outer side of the right thigh at the junction of the middle and lower third, July 1, 1918. The area continued to drain until Spalding saw the patient. At the operation it was found that a ruptured appendix had been the cause of the original abscess.

Maine Medical Association Journal, Portland

April, 1920, 10, No. 9

Medical Defense. J. A. Spalding, Portland.—p. 263.

Medical Record, New York

May 29, 1920, 97, No. 22

Diagnosis of Chronic Gallbladder Pathologies. A. Bassler, New York.—p. 899.

Surgery of Gallbladder. J. F. Erdmann, New York.—p. 901.

*Diagnosis of Spinal Cord Tumors. H. Climenko, New York.—p. 903.

Management of Certain Mental and Nervous Cases; A. Medicolegal Aspect. D. E. Hoag, New York.—p. 910.

Stammering; Underlying Causes and Method of Correction. F. Martin, New York.—p. 914.

*Deficient Thyroid Secretion as Etiologic Factor in Gastric and Duodenal Ulcers and Hyperacid Conditions. J. Katz, Brooklyn.—p. 916.

Cooperation of Physician and Dentist Necessary for Success in Treatment of Systemic Diseases. R. R. Reed, Bay City.—p. 916.

Diagnosis of Spinal Cord Tumors.—Pain was a common factor in the three cases cited by Climenko. It expressed itself differently, however, in each case. In two cases of extramedullary tumors, it was an early symptom. In one case of intramedullary tumor, it was of later development. In one case the pain was more like the type of paresthesia at the beginning, and only later did it assume the sharp, lancinating character. In the other two cases it began as a severe sharp, cutting pain, and continued all through the course of the disease. This subjective symptom, pain, is a very valuable guide when properly interpreted. In eliciting this symptom, Climenko says, the patient's psyche must be taken into consideration. The best way is to watch the patient's facial expression when the right question is put and the proper answer is given. The facial expression is particularly valuable in testing for tenderness. An essential point in diagnosis, to which Climenko calls attention, is, that in one case after lumbar puncture the patient became suddenly more paralyzed and the Brown-Séquardian syndrome became more pronounced. This is due to the fact that after a sudden withdrawal of the fluid the tumor pressed more on

the cord and produced the given syndrome. Such occurrence, Climenko believes, should be considered as pathognomonic of spinal cord tumors where vertebral disease can be excluded.

Deficient Thyroid Secretion in Gastric Ucer.—Having observed clinically that hyperacidity may be caused by faulty thyroid secretion, and cured or relieved by the administration of thyroid extract, Katz decided to try the use of thyroid extract in the treatment of ulcers of the stomach and obtained good results.

Mental Hygiene, New York

April, 1920, 4, No. 2

Childhood: Golden Period for Mental Hygiene. W. A. White, Washington, D. C.—p. 257.

Essentials of an Education. S. Paton, Princeton, N. J.—p. 268.

Trade Unionism and Temperament. E. E. Southard, Boston.—p. 281.

Applicability of Findings of Neuropsychiatric Examinations in Army to Civil Problems. P. Bailey, New York.—p. 301.

Experience of Child: How They Affect Character and Behavior. C. M. Campbell, Baltimore.—p. 312.

Program for Mental Hygiene in Public Schools. E. S. Abbot, Philadelphia.—p. 321.

Some Adaptive Difficulties Found in School Children. E. L. Richards, Baltimore.—p. 331.

Mental Disorder in Adolescence. M. A. Harrington, New York.—p. 364.

Mental Deficiency in New York State. W. C. Sandy, New York.—p. 380.

Does There Exist a Need for a Program of Education in Mental Hygiene. D. A. Laird, Iowa City, Iowa.—p. 393.

Nervous and Mental Disorders of Soldiers. S. Brown, Washington, D. C.—p. 404.

What Can Be Done for the Maladjusted? Anne T. Bingham, Baltimore.—p. 422.

Michigan State Med. Society Journal, Grand Rapids

May, 1920, 19, No. 5

Urterer Stone. G. Kolischer and J. S. Eisenstaedt, Chicago.—p. 190.

Medical Service in Community Hospital. J. G. R. Manwaring, Flint.—p. 191.

Certain Aspects of Hysteria. G. K. Pratt, Flint.—p. 192.

Drainage of Uterus After Labor, Abortion or Menstruation and Its Relation to Septic Infection. G. H. Judd, Detroit.—p. 196.

Errors in Surgical Diagnosis. S. Levin, Lake Linden.—p. 197.

Roads. E. H. Foust, Ithaca.—p. 200.

Missouri State Medical Ass'n Journal, St. Louis

May, 1920, 17, No. 5

Neuritis. G. W. Robinson, Kansas City, Mo.—p. 184.

Surgical Treatment of Goiter. W. Bartlett, St. Louis.—p. 190.

Prevention of Complications in Pregnancy and Labor. G. D. Royston, St. Louis.—p. 196.

New York Medical Journal

May 29, 1920, 111, No. 22

Sex Disproportion and Its Consequences. R. M. Leslie, London.—p. 925.

*Secondary Nephrectomy. A. L. Chute, Boston.—p. 931.

Deaf Child in Relation to Parents, Teacher and Physician. E. Amberg, Detroit.—p. 936.

Year's Observation in Orthopedic Surgery. E. Adams, New York.—p. 938.

Frost-Lang Operation. H. F. Hansell, Philadelphia.—p. 943.

Relation of Neurology to General Medicine. J. W. McConnell, Philadelphia.—p. 944.

Roentgen-Ray Diagnosis. J. W. Shuman, Sioux City, Iowa.—p. 946.

Spinal Subcutaneous Injections. S. Block, Brooklyn.—p. 949.

Secondary Nephrectomy.—Of twenty cases in which Chute did a secondary nephrectomy, nine were cases in which a primary nephrectomy had been done to lessen the danger to life from a subsequent nephrectomy. Seven of these nine patients presented a pyonephrosis; three due to renal stone; two of tuberculous origin and accompanied by perirenal abscess, and two nontuberculous; one of these patients also had a perinephritis abscess. There were also two large, acute hydronephroses, both in children, one the result of trauma, mildly infected, the other apparently of congenital origin. Of the nine patients subjected to secondary nephrectomy only one died. This was one of the tuberculous cases with a perirenal collection of pus, and as death did not take place until about six weeks after the secondary nephrectomy, it probably cannot be charged directly against the operation; there was no necropsy but death was supposed to have been due to a more or less generalized tuberculosis. Chute feels sure that had a primary nephrectomy been carried out on these nine patients the mortality would have been much greater than it

was; that the operation of secondary nephrectomy, in spite of its increased technical difficulties was really a conservative procedure for these patients. The remaining eleven cases represent a group in which Chute did not plan to do secondary nephrectomy but was forced to do it. Four of the patients in this group had had stones removed from their kidneys. Each had a urinary sinus in his loin that had existed for periods that varied from seven months to twenty years. Three additional cases in this group illustrate errors in diagnosis in connection with renal stones that led finally to secondary nephrectomies. Only one patient in this group died, a man with hypernephroma, on whom an unsuccessful attempt at removal had been made some months before.

Ohio State Medical Journal, Columbus

May 1, 1920, 16, No. 5

- Prevention and Treatment of Industrial and Traumatic Deformities. W. G. Stern, Cleveland.—p. 325.
Relative Value of Dry, Wet and Ointment Dressings for Wounds. C. T. Souther, Cincinnati.—p. 333.
Birth of Large Children. M. A. Tate, Cincinnati.—p. 336.
Coloboma and So-Called Congenital Dislocation of Lens. C. F. Clark, Columbus.—p. 338.
Cases Presenting Indications for Bronchoscopy; Complications Incident to Operation. T. Hubbard, Toledo.—p. 343.
*Sarcoma of Cerebellum; Report of Case. P. J. Steuber, Lima.—p. 349.
Intermediary Operation After Childbirth and Its Technic. J. L. Bubis, Cleveland.—p. 354.
Some Phases of Rural Health Problems. J. C. Larkin, Hillsboro.—p. 356.
Venereal Diseases as Problem of Preventive Medicine. J. M. Shapiro, Haifa, Palestine.—p. 358.

Sarcoma of Cerebellum.—Steuber's patient was only 8 years of age. He was under observation for one year. At the necropsy the cerebellum presented on section a sharply circumscribed, necrotic, caseated mass, replacing practically all the entire vermis, and extending well out into the cerebellar hemispheres, leaving only a small capsule of cerebellar structure varying in width from a few millimeters to 2 centimeters. The pathologic diagnosis was small round cell sarcoma.

Psychobiology, Baltimore

April, 1920, 2, No. 2

- Relative Stimulating Efficiency of Continuous and Intermittent Light in Vanessa Antiope. W. L. Dolley, Jr., Ashland, Va.—p. 137.
Relation of Phototropism to Swarming in Honey Bee, Apis Mellifera. L. D. E. Minnich, Cambridge, Mass.—p. 177.

Public Health Journal, Toronto

April, 1920, 11, No. 4

- Peace-Time Program of Red Cross Society. J. G. Fitzgerald, Toronto.—p. 149.
Syphilis and Gonorrhoea from Public Health Point of View. R. R. McClenahan, Toronto.—p. 177.
Plan for More Effective Federal and State Health Administration. F. L. Hoffmann, Newark, N. J.—p. 181.

Rhode Island Medical Journal, Providence

April 1, 1920, 3, No. 4

- Clinical Neuropathology; Value in General Practice. F. J. Farnell, Providence.—p. 64.
Need of Mental Hygiene in Rhode Island. A. H. Ruggles, Providence.—p. 68.
Education and Recreation in the Army. W. G. Haan, U. S. Army.—p. 71.

May, 1920, 3, No. 5

- Analysis of One Hundred Deaths from Diphtheria. D. L. Richardson, Providence.—p. 87.
Posterior Positions of Occiput. H. G. Partridge, Providence.—p. 93.

South Carolina Medical Ass'n Journal, Greenville

April, 1920, 16, No. 4

- Gallbladder Surgery. A. E. Baker, Charleston.—p. 95.
Hyperthyroidism. C. M. Rakestraw, Chester.—p. 97.

May, 1920, 16, No. 5

- Basal Metabolism in Hyperthyroidism. S. McGuire, Richmond.—p. 107.
Federal and State Program for Control of Venereal Diseases. C. V. Akin, Washington, D. C.—p. 120.

Southern Medical Journal, Birmingham, Ala.

May, 1920, 13, No. 5

- Comparison of Tests of Renal Function. C. W. Dowden, Louisville.—p. 305.
Acute Ascites. J. B. Guthrie, New Orleans.—p. 313.

- Sippy Treatment of Peptic Ulcer. J. Friedenwald and T. H. Morrison, Baltimore.—p. 318.
Prognosis of General Paralysis of Insane. E. W. Fell, Cincinnati.—p. 326.
Acute Infections of Childhood. R. M. Pollitzer, Charleston, S. C.—p. 329.
Work of Public Health Service in Care and Treatment of Sick and Disabled Persons Discharged from Military Service. C. H. Lavinder, Washington, D. C.—p. 335.
Malaria Control Through Application of Antimosquito Measures: Results Obtained in Southeast Arkansas. H. A. Taylor, Mound, La.—p. 339.
*Malignant Moles. H. H. Hazen, Washington, D. C.—p. 345.
Pre-Cancerous Lesions of Breast with Special Reference to Chronic Cystic Mastitis. J. S. Rodman, Philadelphia.—p. 348.
Benign Tumors of Breast. J. S. Horsley, Richmond, Va.—p. 356.
*Importance of Early Diagnosis in Circulatory Disturbances of Extremities. B. M. Bernheim, Baltimore.—p. 365.
Operative Treatment of Pelvic Inflammation. C. R. Robins, Richmond, Va.—p. 368.
Report of Eye Cases. H. H. Martin, Savannah, Ga.—p. 373.
Unusual Eye Cases. T. McDavitt, St. Paul.—p. 377.
Trend of Modern Medical Education. W. W. Herrick, New York.—p. 381.

Malignant Moles.—This paper was abstracted in THE JOURNAL, Dec. 6, 1919, p. 1796.

Early Diagnosis of Circulatory Changes in Extremities.—Bernheim suggests that physicians might well direct a little more attention to a study of circulatory changes in the extremities. If a patient complains of cold feet, pain in the feet, especially if the pain is sufficient to keep him awake at night, the state of the circulation ought to be investigated, instead of dismissing the subject with a snap diagnosis of neuritis. Neuritis it is, of course. There is most likely an inflammatory process going on in the nerves, but it is of the degenerative type and due to a lack of blood supply, an ischemia. It is an ischemic pain, a pain that is cumulative in its effect and one that is most difficult to relieve. Indeed, the pain is but the outward expression, the earliest perhaps, of blood vessel changes which become more and more profound as time goes on, until finally there is a collapse from which recovery is not possible.

Southwest Journal of Med. and Surg., El Reno, Okla.

March, 1920, 28, No. 3

- Effectiveness of Neurosurgical Procedures. E. Sachs, St. Louis.—p. 50.
Trachoma. L. H. Buxton, Oklahoma City.—p. 56.
Bone Transplantation. B. Brooks, St. Louis.—p. 59.

Southwestern Medicine, El Paso, Texas

April, 1920, 4, No. 4

- Eggleston Method of Digitalis Therapy; Case Report. D. N. Shulman, Tucson, Ariz.—p. 1.
Blastomycetes. Report of Case. G. Werley, El Paso, Texas.—p. 4.
Nitrous Oxid and Oxygen Anesthesia in General Surgery. F. O. Barrett, El Paso, Texas.—p. 9.

Tennessee State Medical Ass'n Journal, Nashville

April, 1920, 12, No. 12

- Surgery and Roentgen Rays in Malignancy. W. A. Bryan, Nashville.—p. 433.
Vacuum Frontal Sinusitis. L. Levy, Memphis.—p. 435.
Post War Physician. H. R. Fairfax, Bristol.—p. 436.
Birth and Death Registration. H. L. Baugh, Nashville.—p. 439.
Educating Patient in Treatment of Gastro-Intestinal Diseases. S. Harris, Birmingham.—p. 440.
Municipal Narcotic Dispensaries. S. D. Hubbard, New York.—p. 445.
Lethargic Encephalitis. S. S. Crockett, Nashville.—p. 447.

Virginia Medical Monthly, Richmond

April, 1920, 47, No. 1

- Roentgen Rays in Treatment of Menstrual Disorders. J. W. Hunter, Norfolk.—p. 1.
Treatment of Menorrhagia with Radium. S. W. Budd, Richmond.—p. 5.
Symptoms and Signs Suggesting Possibility of Syphilis, Observed in Routine Examinations. J. D. Willis, Roanoke.—p. 9.
Importance of Routine Bacteriologic Studies in Eye Diseases. E. Hill, Richmond.—p. 12.
Traumatic Rupture of Diaphragm with Hernia of Stomach, Spleen and Transverse Colon into Left Pleural Cavity, and Communicated Fracture of Fourth Lumbar Vertebra. S. S. Gale, Roanoke.—p. 16.
Chronic Knee Strains. H. P. Mauck, Richmond.—p. 18.
Spontaneous Rupture of Uterus. Case Report. M. P. Rucker, Richmond.—p. 21.
Hyperthyroidism. C. M. Rakestraw, Chester.—p. 24.
Removal of Morbid Fears and Similar Besetments: Illustrative Cases. T. A. Williams, Washington, D. C.—p. 25.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

**Annals of Tropical Medicine and Parasitology,
Liverpool**

March 15, 1920, 13, No. 4

- Mechanism of Spontaneous Elimination of Yellow Fever from Endemic Centers. H. R. Carper.—p. 299.
- *Metabolism of White Races Living in Tropics. Influence of External Temperature and Rate of Cooling on Respiratory Metabolism. W. J. Young.—p. 313.
- Hypopus of *Carpoglyphus Anonymus*, Haller. H. M. Morris.—p. 339.
- *Xerophthalmia in Native of Gold Coast. J. W. S. Macfie.—p. 343.
- *Effect of Malaria in Leukemia. J. W. S. Macfie.—p. 347.
- Tropical Australia and Its Settlement. A. Breinl and W. J. Young.—p. 351.
- *Experimental Infection in England of *Anopheles Plumbeus*, Stephens, and *Anopheles Bifurcatus*, L., with *Plasmodium Vivax*. B. Blacklock and H. F. Carter.—p. 413.
- Anopheles (Coelodiazesis) Plumbeus*, Stephens; Its Breeding-Places, Occurrence in Liverpool District, and Possible Connection with Spread of Malaria. B. Blacklock and H. F. Carter.—p. 421.
- Description of Male Genital Armatures of British Anopheline Mosquitoes. H. F. Carter.—p. 453.
- Human Trypanosomiasis in Peru (*T. Escomeli*). W. Yorke.—p. 459.

Metabolism of White Races in Tropics.—During the hot season of the year a greater metabolism was observed by Young than in the cooler season, excepting on certain days in the latter, when the rate of cooling was sufficiently great to cause the subject to shiver. This greater metabolism is attributed to the effects of the ordinary activities of everyday life which had preceded the actual experiment, which in the hot, moist weather produce a greater increase in body temperature, and consequently in the metabolism, than in the cool season. These effects also are reduced much more slowly during the hot season, when the cooling power of the atmosphere is low, than during the cool weather when the cooling power is much greater. The effects of such conditions prior to the actual measurement have thus a larger influence on the level of metabolism in the hot season. With tropical heat the metabolism is at a high level on account of the increase in body temperature produced by even slight exertion, and which decreases only very gradually after the exertion has ceased. Cold may also increase the metabolism but by producing shivering and so increasing the muscular activity.

Xerophthalmia.—Attempts to reproduce the disease in animals, by means of the bacillus obtained from a case of this disease, were unsuccessful.

Effect of Malaria in Leukemia.—In myelogenous leukemia as in lymphatic leukemia, a notable reduction in the number of leukocytes coincides with the appearance in the blood of malaria parasites. This reduction is not permanent, and is rapidly effaced by treatment with quinin.

Experimental Anopheles Infection.—Blacklock and Carter have been able to infect laboratory-bred *Anopheles plumbeus* with *Plasmodium vivax*. At 28 C. infections of the gut and salivary glands were obtained; at room temperature (maximum 26 C., minimum 17 C.) gut infection only was obtained. They have also produced infection of the gut with *P. vivax* in the case of *A. bifurcatus* at 28 C. This is the first experimental evidence produced that *A. plumbeus* is capable of becoming infected with a malaria parasite.

Bristol Medico-Chirurgical Journal

March, 1920, 37, No. 138

- Queen Elizabeth's Academy. L. M. Griffiths.—p. 1.
- Applications of Physiology to Medicine. G. A. Buckmaster.—p. 7.
- Modern Treatment of Tuberculosis of Spine. A. Rendle Short.—p. 19.
- Cases of Lethargic Encephalitis in Bristol. D. S. Davies, J. O. Symes, F. H. Edeworth, I. Walker Hall and J. A. Nixon.—p. 25

British Journal of Tuberculosis, London

April, 1920, 14, No. 2

- *Care of Tuberculous Children: Treatment at Treloar Cripples' Hospital, Alton. H. Gauvain.—p. 49.
- Infection and Predisposition in Tuberculosis: Summary of Some Views Held During Last Hundred Years. S. Delépine.—p. 60.
- Criticism of London Scheme for Prevention of Tuberculosis. G. H. Dart.—p. 64.
- Discharged Soldier and Sanatorium Treatment. G. B. Dixon.—p. 67.

Treatment of Tuberculosis.—The chemotherapeutic treatment of Ellis consisting of the use of an unstable brass compound, combined with picric acid, has been tested clinically at Alton with promising results in suitably selected cases. Hitherto its value has been most apparent in certain types of lupus, particularly when heliotherapy has been simultaneously applied. Further investigation is proceeding. Gauvain does not attach the importance to the sun cure ascribed to it by Rollier and other enthusiasts although it is a useful aid to treatment in many cases, and its psychological effect is remarkable.

Predisposition in Tuberculosis.—In Delépine's opinion it is better to attach too little than too much importance to the determining influence of predisposition. Tuberculosis can be controlled permanently only by taking comprehensive and thorough measures against infection, but in doing so one must keep in mind that there are predisposing circumstances which call for special measures. It is also important to distinguish between latent or occult and manifest disease. Finally, it must always be remembered that, accidentally or not, several factors generally act concurrently, and that their relative importance varies according to circumstances.

British Medical Journal, London

May 15, 1920, No. 3098

- *Nutrition of Articular Cartilage. T. S. P. Strangeways.—p. 661.
- Use of Polarized Light in Detection and Investigation of Suture Materials Embedded in Tissues. M. J. Stewart.—p. 663.
- Gall Stones. R. P. Rowlands.—p. 665.
- Air-Way Infections. T. H. C. Benians.—p. 668.
- *Loewi's Epinephrin Mydriasis as Sign of Pancreatic Insufficiency. W. L. Cockcroft.—p. 669.
- Vagasthenia. J. A. W. Watts.—p. 669.
- Acute Suffocative Catarrh. J. A. Smyth.—p. 670.

Nutrition of Articular Cartilage.—Strangeway's studies show that the articular cartilage of the joints may derive some, if not the greater part, of its nourishment from the synovial fluid. If this hypothesis is true, then the changes which are found in the degenerative types of arthritis can also be explained. The primary cause of these degenerative types will be found not in the cartilage or bone, but in changes in the nutritive value of the synovial fluid. There is evidence that changes in the nutritive value of the synovial fluid may be due to changes in the vessels of the capsule of the affected joints.

Loewi's Test in Pancreatic Disease.—In one case reported by Cockcroft this sign was negative on three occasions; 2 drops of the adrenalin chlorid brand of epinephrin solution (1:1,000) were dropped into one eye. After one hour there was no reaction, the pupils remaining exactly equal. The jaundice was found to be due to carcinoma of the bile ducts with secondary growths in the liver. Suppurative cholangitis was also present. The pancreas was nowhere invaded by the growth, nor were there any secondary deposits in it, the gland itself being quite healthy. In a second case the test was positive; marked dilatation of the pupil appeared after one hour. At the postmortem examination, there was found to be malignant disease of the head of the pancreas, which invaded the duodenum and common bile duct. There were metastases in the liver, and obstruction and dilatation of the common bile duct and bile passages. The growth in the pancreas caused stenosis of the duodenum, with secondary dilatation and hypertrophy of the stomach and upper part of the duodenum.

China Medical Journal, Shanghai

March, 1920, 34, No. 2

- Study of Thirty-five Cases of Typhoid and Paratyphoid. H. J. Smyly.—p. 109.
- *Unusual Pathologic Conditions of Intestines. R. H. Mole.—p. 115.
- *Cancer in Hainan: Statistical Study of 131 Operations. N. Bercovitz.—p. 119.
- Cases of General Paresis in China. J. L. Harvey.—p. 123.
- Surgical Gleanings from War Experience. E. W. Kirk.—p. 131.
- Dystrophia Adiposa Genitalis: Report of Case. G. D. Whyte.—p. 139.
- Case of Cretinism. W. G. Lennox.—p. 140.
- Surgical Hints to Young Medical Missionaries. C. C. Elliott.—p. 144.

Intestinal Cases.—The cases cited by Mole were as follows:
(1) Almost complete obstruction of the rectum, due to

dysentery; (2) a ringed ulceration of the ileum, 2 inches from the ileocecal junction, causing complete intestinal obstruction; (3) extensive ulceration of the large intestine in a case of pulmonary phthisis; (4) extensive thrombosis of the mesenteric veins in a case of cholera.

Cancer in Hainan.—It appears from Bercovitz's study that cancer in Hainan is as much a disease of the early decades of life as of the later, for which no reason can be assigned. Cancer of the penis and glands of the neck is unusually frequent; for the former an old primary sore may be the etiologic factor; for the latter no reason can be assigned. Cancer of the exposed surface of the body is very common. Inasmuch as in most cases these people wear a scanty amount of clothing, the arms, trunk and legs of men who work the fields being bare, the rays of the sun may be a contributing factor. But it is rather more likely that large ulcers, treated in the native fashion, and the sores resulting from counter irritation as practiced by the Chinese, are the etiological factors. This is all the more probable in view of the tendency to keloid formation and the universal infection of wounds. Cancer of the stomach is infrequent. The absence of certain virulent streptococcic infections which are responsible for gastric ulcer may have something to do with this; or it may be that in this case, as in cancer of the uterus, the surgeon has not seen the cases. Cancer of the uterus is infrequent. It may be that these cases have not been seen by the physician, but it seems rather suggestive that the virulent infections of the female generative organs seem to be infrequent here.

Indian Medical Gazette, Calcutta

March, 1920, 55, No. 3

- Epidemic Encephalitis. L. P. Stephen and K. M. Bulchandani.—p. 81.
Actual Weight of Cataractous Lens; Clinical Notes on Cataract. A. E. J. Lister.—p. 84.
Kala-Azar In Europeans in Nowgong District of Assam. J. Dodds.—p. 87.
Influenza in Sambhu Nath Pundit Hospital, Calcutta. D. N. Sen.—p. 89.
Work of Meiktila Vaccine Depot. J. Entrican.—p. 92.
Basrah Oil Fuel Refuse Destructor. G. R. Oberai.—p. 97.

Kitasato Archives of Experimental Medicine, Tokyo

December, 1919, 3, No. 3

- Study of Spirochaeta Morsus-Muris in Nippon Field Vole (*Microtus Mon'ebelli*). R. Kobayashi and M. Kodama.—p. 199.
*Spirochete-Like Bodies Appearing in Culture of Certain Species of Bacteria. G. Koga and I. Otsubo.—p. 207.
Origin of D-Lactic Acid in Animal Organism. K. Taguchi.—p. 223.
*Early Treatment of Tuberculosis by Protective Immunization. K. Shiga.—p. 239.

Studies on Bacillus Mallei.—Koga and Otsubo have proved by cultivation that *Bacillus mallei* has flagella and produces spiral bodies. These spirochete-like bodies seem to be an abnormal development of either bacillary bodies or, more probably, the flagella in a certain condition. They bear close resemblance to the involuted form of *Treponema macrodentium* described by Noguchi.

Vaccine Therapy of Tuberculosis.—The results obtained by Shiga from the use of his T. B. serovaccine as an immunizing agent in the treatment of 300 cases of pulmonary tuberculosis have been very gratifying to him. Nutrition was improved markedly, the patient gained in weight and the symptoms of slight fever and lung sounds disappeared completely. Patients seen four years after cessation of treatment were still well. This vaccine was also used after the cessation of a pleurisy, following extirpation of tuberculous kidneys and testes. Dilutions of from 1:20 to 1:5,000 were used in doses varying from 0.1 to 0.8 c.c.

Lancet, London

May 15, 1920, 1, No. 5046

- Ambulatory Treatment of Fracture of Limbs; Tuberculous and Arthritic Disease of Joints. C. A. Hoefftke.—p. 1042.
Rev. John Ward and Medicine. D'Arcy Power.—p. 1043.
Bone Grafting in Treatment of Fractures? E. W. H. Groves.—p. 1048.
Resection of Tibia with Grafting. L. E. B. Ward.—p. 1055.
*Infections of Hand. H. W. L. Molesworth.—p. 1055.
Specificity and Evolution in Disease. W. J. Collins.—p. 1059.
*Gastrocolic Fistula. D. Firth.—p. 1061.

Infections of Hand.—Analysis of 168 cases by Molesworth showed that hand infections in working people are too fre-

quently the cause of grave disability. The time to treat these conditions efficiently is in their early stages. When tendon sheaths, etc., have become infected the hope of a useful finger is a thing of the past; the object of treatment then becomes to save whole hands, forearms and even lives. The outlook of the profession toward hands is much the same as it was toward the appendix twenty years ago. If localized tenderness became the danger signal in the hand, as it has become in the abdomen, and if suppuration in the hand, however small the area involved, were regarded as an indication for immediate operation, Molesworth says the morbidity of infected hands would fall in much the same way as the mortality of infected appendices has fallen.

Gastrocolic Fistula.—In the case recorded by Firth, a correct diagnosis was not made. The past history was indefinite, the patient had undergone no operation, and two of the most characteristic symptoms, diarrhea and vomiting, subsided on admission to hospital, so that no opportunity occurred to investigate their nature. The patient died. Firth discusses in detail a combination of symptoms which should arouse a suspicion of the existence of a gastrocolic fistula.

Medical Journal of Australia, Sydney

April 3, 1920, 1, No. 14

- Fracture-Dislocation of Cervical Spine in a Child. J. G. Edwards.—p. 311.
Case of Suppurating Hydatid of Liver with Multiple Abscesses: Recovery. C. Gordon Shaw.—p. 311.

April 10, 1920, 1, No. 15

- Surgical Shock. V. Hurley.—p. 331.
Plea for Standard of Cure in Cases of Gonorrhoeal Urethritis in the Male. V. N. B. Willis.—p. 336.
Cholecystitis in a Patient with Transposition of Viscera. G. Bell and R. C. Winn.—p. 339.

Practitioner, London

April, 1920, 104, No. 4

- Medicolegal Notes. J. Collie.—p. 241.
Medical Notes. T. Horder.—p. 246.
Recent Public Health Work. J. Priestley.—p. 249.
Therapeutic Measures in Influenza. G. E. Beaumont.—p. 263.
*Splenomegaly and Jaundice; Splenectomy. A. A. McConnell.—p. 278.
Lethargic Encephalitis. A. Howell.—p. 290.
*Syringing Ears. T. B. Layton.—p. 299.
Maladies and Medicines. A. Campbell.—p. 305.
Ascaris Lumbricoides as Cause of Urgent Symptoms in Disease Among Children. C. Pentland.—p. 313.

Splenectomy in Splenomegaly and Jaundice.—In a case of Hanot's cirrhosis without enlargement of the liver, McConnell did a splenectomy. He says that if there is any evidence that the liver is involved secondarily to the spleen, or if the spleen is a factor in the causation or an adjuvant to the course of hepatic cirrhosis, splenectomy is indicated. His patient did very well for thirty-six hours, when she suddenly vomited a large amount of blood. Her pulse became imperceptible. Twelve hours later she vomited more blood, and died shortly afterward. The postmortem report showed that the stomach and duodenum were full of blood without any lesion whatever of their walls. This gastric hemorrhage was undoubtedly the cause of death and was in all probability due to the advanced cirrhotic state of the liver.

Syringing Ears.—Two rules are laid down by Layton: First, that water at the body temperature must be used; second, that for wax the syringing must be done hard, and for pus it must be done gently. To each of these rules there is an exception: to the first when the observer wishes to produce giddiness to test the function of the vestibular nerve; to the second when the patient has earache, and may have an acute otitis media, or other painful lesion, beneath the plug of wax.

Tubercle, London

April, 1920, 1, No. 7

- Thoracoplasty in Treatment of Pulmonary Tuberculosis. C. Saugman.—p. 305.
Tuberculosis Care Work. Z. P. Fernandez.—p. 317.

May, 1920, 2, No. 8

- *Traumatic Pulmonary Tuberculosis. J. B. McDougall.—p. 353.
Von Pirquet Investigations in a Parish without a Notified Death from Tuberculosis. E. Bjorn-Hansen.—p. 359.

Traumatic Pulmonary Tuberculosis.—In only two cases among 139 cases of gunshot wounds of the chest investigated by McDougall was there a history of former pleurisy or tuberculosis of the lungs. In the severe types of wound seen four or five days after infliction of the injury, it was scarcely possible to make a positive diagnosis of tuberculosis from the physical signs present. In four cases a tuberculous infiltration was suspected clinically, and was corroborated by the roentgen ray. Tubercle bacilli were not found in the sputum in any cases.

Annales de Médecine, Paris

January, 1920, 6, No. 6

- *Tumor of Spinal Meninges. C. Roubier and P. Brette.—p. 433.
- *General Paresis Among Arabs. A. Porot and N. Sengès.—p. 444.
- *Sequelae of Rachitis in Adults. A. Léri and T. Beck.—p. 449.
- *Gland Extracts in Differential Diagnosis. R. Porak.—p. 469.

Tumor of Spinal Meninges.—The woman of 48 complained for six or seven months of pains in the neck and left arm. Then came spastic paraplegia and amyotrophic paresis of the smaller muscles of the hands, predominant on the left. Finally sphincter and trophic disturbances ushered in the terminal phase. The pains throughout the whole year's course were so severe that morphin was required almost daily. Nothing but compression from a tumor could explain the sequence of events, and necropsy revealed a small subdural myxosarcoma, not adherent to cord or meninges, but its anterior position would have rendered access to it extremely difficult.

General Paresis Among Arabs.—The total absence of general paresis among Arab syphilitics has long attracted attention. Not even the stress of years of service at the front brought any tendency to general paresis among the Arab troops. Porot and Sengès relate that in their experience at Alger, notwithstanding the extreme prevalence of syphilis, they have never encountered but one instance of general paresis, and this was of such a mild form that the Arab officer was able to serve for more than three years at the front, and the necropsy findings were meager.

Rachitic Adults.—Léri and Beck draw the composite picture of what they call *les petits rachitiques* from study of twenty-two such cases and forty suspects. In ordinary life there is nothing to suggest that they are not normal except that the legs are rather short, with tendency to genu varum; the teeth are irregular; the root of the nose is somewhat sunken; the nostrils wide and the mentality is backward. Under physical or mental strain their bones soon begin to ache and they whine and complain, and are listless and inert, striving to avoid every effort, even the effort of speaking clearly. This inertia during military service brought some of these men up for discipline, as they simply refused to get up when ordered, wishing to be left alone, while their statements as to their bones aching were so vague that they were not believed. This pathologic type is usually misunderstood. Such persons need peace and quiet, and they should be advised to live in the country, although even here they are liable to break down during periods of extra work, harvesting, etc. Ordinary treatment for rheumatism is of no benefit; rest is what they need until they can reassemble their forces enough for tranquil living.

Gland Extracts for Differential Diagnosis.—Porak has been studying for some years the response to thyroid, pituitary and other gland extracts in health and in disease. The difference in the reaction is often so marked as to aid in differential diagnosis. Suprarenal extract and thyroid extract in the healthy display an immediate pressure reducing and pulse slowing action, but with myxedema nothing of the kind occurs, or it is very slight, or the effect may be the reverse, the pulse becoming accelerated. In one girl of 10 with a white swelling of the knee and tendency to obesity, no effect was apparent from test administration of thyroid extract. This confirmed the suspicion of myxedema, and under regular and continuous thyroid treatment improvement was soon observed; in ten days the weight dropped from 34.3 kg. to 30. Pituitary extract accelerates the pulse in myxedema and slows it in the normal, while it causes the pulse to grow slower from the oculocardiac reflex in myxedema. The test

is made with intramuscular injection of 0.5 to 2 c.c. of thyroid extract or pituitary extract. In seven tests with suprarenal extract the blood pressure was not raised as high or as long in myxedema as in the healthy except when the myxedematous were taking thyroid treatment, in which case the response was about the same as in the healthy.

Archives de Médecine des Enfants, Paris

May, 1920, 23, No. 5

- Congenital Deformity of Bones. E. Apert and Cambessédès.—p. 265.
- Physical and Mental Condition of the Schoolchildren in the Evacuated Districts. G. Heuyer.—p. 273.
- Permanent Congenital Cyanosis; Four Cases. Variot and Bouquier.—p. 292.
- *Meningococcus Arthritis. P. Nobécourt and J. Paraf.—p. 297.
- *Nodding Spasm in Children. J. Comby.—p. 303.

Meningococcus Arthritis in Infant.—Nobécourt and Paraf warn that arthritis in an infant should suggest the meningococcus. In the case reported the left ankle was the only joint involved. The child had been having slight fever for four days. There were no symptoms of meningitis but lumbar puncture was done nevertheless, and meningococci were found in the fluid. No improvement followed vigorous antiserum and vaccine treatment, which included injection of the antiserum directly into the ventricle. Necropsy disclosed an abscess deep in the brain, communicating with the ventricle by a minute opening.

Head Shaking in Children.—Comby compares recent works on nodding spasm with Herrman's report of sixty-four cases of what he calls head shaking with nystagmus in infants. The treatment, Comby reiterates, should be by hygiene alone, avoidance of every kind of nervous excitement and of sedatives such as bromids, belladonna and arsenic. Children with a tendency to rachitis should be given phosphorus and cod liver oil.

Bulletin de l'Académie de Médecine, Paris

April 20, 1920, 83, No. 16

- *The Contents of the Fasting Stomach. L. Pron.—p. 361.
- *The Murderous Capacity of Heavy Artillery. R. Mercier.—p. 363.
- *Virus of Epidemic Encephalitis. C. Levaditi and P. Harvier.—p. 365.
- *Congenital Dislocation of the Hip Joint. Calot.—p. 367.

Analysis of the Fasting Stomach Content.—Pron declares that sometimes analysis of the content of the fasting stomach is the only means to distinguish between ulcer and simple hyperchlorhydria, to detect the secondary nature of certain stomach disturbances with liver disease, and to diagnose catarrh. He was impressed with the infrequency of retention of food in the fasting stomach; this was evident only in 7 per cent. of his 500 cases, and it could be detected only with the microscope in 14 of these 35 cases. He first tests for the splashing sound, and found frank acid catarrh in 64 per cent.; acid catarrh without free hydrochloric acid but considerable fermentation acids in 85 cases; pure mucous catarrh, without free hydrochloric acid and blood in 29, and a catarrhal condition with transudation of serum and chlorids from the blood in 5. In 24 cases pure bile was found.

The Virus of Epidemic Encephalitis.—Levaditi and Harvier report the successful inoculation of a rabbit with virus from the cortex, midbrain and medulla of a patient with lethargic encephalitis. The rabbit showed similar lesions in the nervous system and they could be reproduced in other rabbits by inoculation in the sciatic nerve or anterior chamber of the eye. Virus from the clinical case did not prove pathogenic for the monkey and guinea-pig until after passage through the rabbit. The virus is filtrable and can be kept in glycerin or desiccated, and can be refound in the spinal cord of animals inoculated in the brain. Convalescents' serum has no neutralizing action on it.

Treatment of Congenital Luxation of the Hip Joint.—Calot declares that roentgenologic study of several thousand cases of congenital luxation of the hip joint has shown that some of the prevailing conceptions are erroneous. Treatment based on the information thus derived has amply demonstrated, he says, the importance of the new data thus learned. The primitive acetabulum in very young children belongs more to the ischium than to the ilium, and the head and neck of

the femur should be kept in a horizontal instead of a slanting position during the entire treatment. The thigh should be flexed to the extreme in the first cast. By these means we can obtain a large and stout horizontal cavity which will retain the head of the femur in this rediscovered primitive acetabulum. To prevent any adhesion between the head and its bed, he applies three plaster casts instead of leaving one on for the entire eight or twelve months. The flexion is slightly modified in the three casts, from $1\frac{1}{2}$ right angle in the first to 1 in the second and $\frac{1}{2}$ right angle in the third.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 12, 1920, 44, No. 10

Sex as Factor in Certain Infectious Diseases. J. Comby.—p. 353.

Epidemic Encephalitis. J. Comby and others.—p. 355, 357, 359, 382, 384.

*Spastic or Mental Torticollis. P. Marie and A. Léri.—p. 359.

*Congenital and Familial Ophthalmoplegia. Crouzon and Béhague.—p. 372.

Curable Meningeal Episodes in the Course of Chronic Pulmonary Tuberculosis. de Massary and Léchelle.—p. 377.

Adequate Doses of Diphtheria Antitoxin. P. F. Armand-Delille.—p. 380.

Vertebral Lesions and Torticollis.—Marie and Léri give the details of seven cases of what is called mental torticollis as the head can be passively straightened. In each case stereoscopic roentgenograms showed irregular outlines of the vertebrae in the neck, excrescences and hooks like those seen in chronic rheumatism of the spine.

Congenital and Familial Ophthalmoplegia.—Crouzon and Béhague describe a family in which there were from one to three members with pronounced ophthalmoplegia in each of three generations.

Paris Médical, Paris

April 10, 1920, 10, No. 15

*Surgical Intervention in Dysentery. J. Leveuf and Heuyer.—p. 301.

Neuropathic Lethargic Pseudo-Encephalitis. Roger and Chaix.—p. 308.

Fracture of Ulna with Luxation of Radius. Dujarier and Mathieu.—p. 311.

Surgical Intervention in Grave Forms of Dysentery.—Leveuf and Heuyer observed in Albania, in 1917 and 1918, 700 cases of dysentery that came directly from the front. Among these there were 49 deaths, or 7 per cent. This percentage might be larger if the deaths of soldiers after evacuation from the service could be included. In Prussia in 1917 there were 7,076 deaths in 58,196 cases, a mortality rate of 12 per cent. Their success with cecostomy in saving 6 in 10 extremely severe cases with tender colon and rapid aggravation of the general condition should encourage, they say, earlier operative intervention in both acute and chronic dysentery. By opening up the cecum amply, the feces are diverted away from the diseased mucosa, while it allows direct medication of the intestine walls. They operated between the eighteenth and the twenty-fifth days and found the cecostomy a comparatively mild intervention while it protected against hemorrhage and perforation, and allowed the patients to be amply fed.

Presse Médicale, Paris

April 28, 1920, 28, No. 26

*Pathogenesis of Migraine. P. Pagniez and A. Nast.—p. 253.

*Circulation of the Cerebrospinal Fluid. V. Stepleanu-Horbatsky (Bucharest).—p. 254.

Nature and Cure of Migraine.—Pagniez and Nast report further experiences which confirm the alimentary anaphylactic nature of migraine, and how it can be warded off by a small dose of peptone before meals, to desensitize. After concluding a course of peptone, one man who had been subject to migraine since childhood, could take chocolate with impunity for a certain time, but then a smaller amount brought on the migraine. It was preceded by certain changes in the blood, the *crise hémoclasique*. Repeated blood counts showed normal leukocytosis after ingestion of the chocolate in five tests at three or four days' intervals. The sixth test showed total absence of the digestive leukocytosis, and in a few hours the leukocytes dropped from 6,000 to 3,700, with other signs

of the phase of hemolysis characteristic of anaphylaxis. Prophylactic treatment with the peptone is not always effectual in these alimentary anaphylactic reactions, but it should be given a trial, at least, as it often is temporarily and sometimes is permanently successful.

Circulation of the Cerebrospinal Fluid.—Four children from 9 months to 11 years old with grave gastro-enteritis or tuberculous meningitis were given an intraspinal injection of 1 c.c. of methylene blue in a 1:20 solution. The spread of the stain corresponded to our conceptions of the action of anesthetics injected intraspinally. The nerve roots were intensely stained but the spinal cord only on the surface. The stain evidently spread to the general circulation by way of the lymphatic glands. It reached the base of the brain and even the ventricles, and the presence of the stain in the jugular vein, cranial sinuses and venous plexuses of the skull testifies to the direct communication between the subarachnoid space and the venous system. The fluid is thus constantly and slowly passing from the center to the periphery, but there is no actual cycle of circulation.

Progrès Médical, Paris

April 17, 1920, 35, No. 16

*Metastatic Cancer of Douglas Pouch and Rectum. A. Cade and C. Roubier.—p. 171.

Serofibrinous Pleurisy in Children. Hutinel.—p. 174.

Metastatic Cancer of Douglas' Pouch and Rectum.—Cade and Roubier report three cases of metastasis in the Douglas pouch and the rectum. The recognition of such metastases they regard of great diagnostic and prognostic importance. In the cases in which the primary cancer has not been recognized, the examination by palpation and rectoscopy will aid in excluding primary rectal cancer. As emphasized by Bensaude, if examination reveals the existence of an infiltration of the walls of the rectum, with no ulcerations of the mucosa nor proliferation, metastatic cancer of the rectum should be suspected, and the primary tumor should be sought for in the stomach. When the primary neoplasm has been diagnosed, the finding of the metastatic tumor will signify to the clinician that peritoneal generalization has taken place, while the surgeon will know that he must confine himself to a purely palliative operation or refrain from any intervention whatsoever.

Schweizerische medizinische Wochenschrift, Basel

April 15, 1920, 50, No. 16

*Drainage of Congenital Hydrocephalus. E. Wieland.—p. 301.

Danger of Blindness after Loss of One Eye. E. Hegg.—p. 304.

*Rhizomelic Spondylosis in Girl. K. Schnyder.—p. 306.

Action of Drugs on the Intestines by Oral and by Parenteral Administration. F. Uhlmann and K. Zwick.—p. 308. Conc'n.

Spontaneous Drainage of Hydrocephalus.—Wieland relates that a 9 weeks' infant with congenital internal hydrocephalus of unknown origin suddenly developed polyuria; the weight dropped rapidly and the symptoms of pressure on the brain rapidly subsided. The fluid had forced its way through the brain substance which had been flattened out into a very thin layer at the top of the skull. The skull bones sank until the edges of the anterior fontanel overlapped. The fluid collected again soon, and after an attempt to trephine, the roentgenogram showed hydropneumocephalus, the cerebrum above as thin as paper. He compares the conditions with those of Goltz' decerebrated dog. The child drank vigorously from its bottle, cried and developed further, but is a spastic imbecile and blind. At the third month the parietal bones overlapped the frontal.

Rhizomelic Spondylosis.—Schnyder's case is unusual from the first appearance of the disease at the age of 9 or earlier in the girl, the involvement of the peripheral joints and the long failure to recognize the true nature of the disturbances. The girl is now 14.

Policlinico, Rome

April 5, 1920, 27, No. 14

Cultivated Atropa Belladonna. G. Gaglio.—p. 403.

Extraperitoneal Appendicular Hernia. G. Mafera.—p. 404.

*Heliotherapy as Adjuvant to Quinin. G. Viale.—p. 406.

Kidney Disease and Accident Insurance. G. Dragotti.—p. 406.

Heliotherapy in Malaria.—Viale comments on the rapid improvement in six cases of long rebellious malaria when each time, after taking the dose of quinin, the nude trunk was exposed to the sunlight for several hours. This treatment was suggested, he says, by the reflection that quinin and methylene blue, the two drugs most effectual in malaria, are both fluorescent substances.

Riforma Medica, Naples

March 27, 1920, 36, No. 13

- Italian Mineral Waters in Dysentery. C. Fedeli.—p. 317.
Pathologic Anatomy of Lethargic Encephalitis. G. Tarozzi.—p. 320.
Psoriasis with Amenorrhea; Recovery Under Ovarian Treatment. G. Verrotti.—p. 321.
Acute Myoclonic Encephalitis and Dubini's Disease. A. Litvak.—p. 322.
Placenta Implants. G. Romano.—p. 324.
Present Status of Colchicin. A. Jappelli.—p. 325.

Placenta Implants.—Romano implanted the whole placenta or a suspension of mashed placenta tissue in the peritoneal cavity of rats. The suspension was used in ten of the tests, and in all these rats some of the placenta elements invaded the lungs of the animals and multiplied there indefinitely, substituting the parenchyma of the lung, the animals dying sooner or later from asphyxia.

Rivista di Clinica Pediatrica, Florence

March, 1920, 18, No. 3

- Mediastinal Tumors in Children. A. Lorenzini.—p. 129.
Tumors of the Mesentery in Children. C. L. Rusca.—p. 159.
Recent Literature on Extrasystoles in Children. P. Busacchi.—p. 178.

Mediastinal Tumors in Children.—Lorenzini reports the case of a girl of 6 who for a month had presented symptoms suggesting left pleurisy with large effusion, but the left arm soon showed edema and the displacement of the heart toward the right was not modified by thoracentesis. About 8,000 c.c. of fluid were released by puncture repeated nine times in the course of the following six weeks before the child succumbed to asphyxia from the lymphosarcoma found in the mediastinum. The pains almost throughout had been restricted to the upper left abdomen. A dry spasmodic cough had been the first and for some time the only symptom. The temperature was constantly febrile. A systolic murmur was heard in the right hemithorax evidently due to compression of the pulmonary artery. In Siccardi's case, in an adult, 34,900 c.c. of fluid were evacuated by thoracentesis repeated seventeen times in one month. A list of references to articles on mediastinal tumors and pleural eosinophilia is appended.

Tumors of the Mesentery in Children.—Rusca's patient was a girl of 6 with signs of an abdominal tumor, not tender, and dubious response to the skin tuberculin test. There was eosinophilia of 14 per cent. but the stools were free from parasites, and there was no fever, no pain, and the general condition was constantly good. The tumor was in the mesentery of one of the first loops of the small intestine and segment of the intestine with the mesentery involved were resected, with prompt recovery. It proved to be an echinococcus cyst and it might have been spontaneously absorbed later, but there would have been danger of rupture of the cyst and toxic action from its contents. Devé and Penna have reported fatalities from this cause.

Rivista Critica di Clinica Medica, Florence

Feb. 5, 1920, 21, No. 4

- Protein Therapy in Colitis. A. Furno.—p. 37. Conc'n.

Dysenteriform Hemorrhagic Colitis.—In Furno's five cases there was evidently mild mixed infection, the colon bacillus predominating. From some unknown cause, possibly chilling, the virulence becomes exalted and treatment should aim to reinforce the natural defensive forces. For this he has used Nolf's proteose therapy remarkably effectual, that is, intravenous injections of 10 or 12 c.c. of 10 per cent. solution of peptone on alternate days. (Nolf described his method THE JOURNAL, June 28, 1919, page 1901, and Nov. 22, 1919, page 1579.) Furno emphasizes that by prompt resort to protein therapy the colitis is arrested before it reaches the ulcerative

stage which may be as grave a condition as in typhoid. Vaccine therapy may answer the same purpose. The reaction to the peptone is sometimes intense but is harmless if properly managed.

Archivos Latino-Amer. de Pediatría, Buenos Aires

January-February, 1920, 14, No. 1

- *Acute Meningitis. L. Morquio.—p. 1.
*Psoitis from Inherited Syphilis. Martagao Gesteira.—p. 20.
The Cerebrospinal Fluid in Differential Diagnosis of Meningitis and Meningo-Encephalic Reactions. G. Araújo Alfaro.—p. 28.
Organization of Bureau of Infant Hygiene in New York Health Department. Alicia Armand Ugón.—p. 55.

Acute Meningitis.—Morquio relates that in a recent two weeks he encountered 12 cases of tuberculous meningitis in children, 2 of pneumococcus and 4 of meningococcus meningitis, 2 following influenza and 1 otitis, and 1 with clear spinal fluid during life but necropsy revealed pus, a total of 22 cases in two weeks. With serotherapy the prognosis is losing its extreme gravity in other than tuberculous forms. Pneumococcus meningitis has usually a stormier and graver onset. One boy of 5 died in twelve hours. He has had cases in which everything seemed to indicate primary tuberculous meningitis but the progressive improvement and recovery eliminated this. This was particularly marked in some cases of meningitis following mumps, but in a case reported by Pelfort, two months after the mumps meningitis, actual tuberculous meningitis developed. Meningitis with poliomyelitis was always mild and promptly subsided in his experience. A syphilitic meningitis does not affect the general health so much; it may assume a chronic form with or without functional reactions; differentiation is particularly important with inherited syphilis. In the graver cases, he always found tuberculous meningitis superposed. Seicht was able to compile only 6 cases of acute syphilitic meningitis, and the diagnosis was made during life only in one of them. In one child an acute primary meningitis with slight leukocyte reaction, polynuclears predominating, subsided completely in less than ten days, but bacteriologic examination was constantly negative.

Syphilitic Psoitis.—Martagao calls attention to two children about 5 years old who both complained of pain and tenderness in the right flank, suggesting appendicitis plus coxitis. The right leg was drawn up, abducted and rotated outward. There was no fever and the rapid onset seemed to exclude a tuberculous process. By exclusion, psoitis seemed the probable explanation of the symptoms and under specific treatment they promptly subsided.

Revista Española de Medicina y Cirugía, Barcelona

January, 1920, 3, No. 19

- Operations on the Eyes. M. Márquez.—p. 1.
*Test for Formaldehyd in Milk. A. Gallego.—p. 10.
Disturbances in the Digestive Apparatus in the Tuberculous. F. Gallart y Monés.—p. 13. Conc'n.

Fuchsin Test for Formaldehyd in Milk.—Gallego recalls that formaldehyd modifies fuchsin, transforming its red to a violet and rendering it less soluble in water and alcohol. This property of formaldehyd is proving useful in histologic examinations, and the addition of ten drops of fuchsin to 10 c.c. of milk turns the milk pink and the tint deepens to violet in case the milk contains any formaldehyd even in the dilution of 1:100,000. This test is much simpler than Denigès' technic which is based on the recoloration of previously decolorized fuchsin.

Revista Española de Obstet. y Ginecología, Madrid

January, 1920, 5, No. 49

- *Surgical Treatment of Prolapse of the Uterus. F. Botín.—p. 1.
Pneumonia in Advanced Pregnancy. J. Torre y Blanco.—p. 7.
Occipito-Posterior Presentation. Macías de Torres.—p. 11.

Prolapse of the Uterus.—Botín explains how insufficiency of any one of the different factors involved in sustaining the uterus modifies the indications for correction of prolapse, so that no one method of correction can be applied to all. But he has been quite successful with ventral fixation of the uterus by the Delbet method, and declares that the mishaps

with it that have been reported and repeated by the detractors of this technic seem to be more numerous than they really are, and in many cases the abortion, etc., would have occurred without the fixation. He refers to a number of his personal cases in which pregnancy later developed without complications, but he advises such patients to keep in bed for twenty-five or thirty days after delivery, taking small doses of ergot daily, and, after the tenth day, hot irrigation and gentle massage of the uterus to promote involution without detaching the uterus from its artificial attachment. Recurrence of the prolapse seems to be much less frequent than with other methods, he says.

Revista Médica del Uruguay, Montevideo

March, 1920, 23, No. 3

*Gonococcus Arthritis. Aquiles di Lorenzo.—p. 121.

*Factitious Eruptive Disease. P. E. Duprat.—p. 123.

Influenza and its Prophylaxis. F. Paladino.—p. 130.

Bacteriology of Influenza. A. Prunell.—p. 141.

Gonococcus Arthritis.—The temporomaxillary articulation was the only one involved in the young woman. The arthritis was refractory to the usual local and vaginal treatment but improved under three weeks of vaccine therapy.

Factitious Eruptive Disease.—The puzzling "epidemic" that broke out in the penitentiary can only be explained, Duprat thinks, by some visitor having left some croton oil.

Mitteilungen a. d. med. Fak. d. kais. Univ., Tokyo

Aug. 28, 1919, 22, No. 1. German Edition.

*Pathogenesis of Epitheliomas. IV. K. Yamagiwa and K. Ichikawa.—p. 1.

*The Interstitial Cells. M. Ishibasi.—p. 39.

*Fate of Morphin in Animal Body. I. K. Tamura.—p. 121.

Artificial Cancers.—THE JOURNAL has mentioned from time to time the success of Yamagiwa and Ichikawa in inducing the production of epitheliomas by painting the rabbit ear with tar. They here report similar research on the mammary gland. In 6 per cent. of 47 cases, repeated application of a tar-lanolin mixture was followed by changes in the tissues, as they show in ten handsome plates, which are of an unmistakable adenocarcinoid or carcinoma type. Their research is being continued with the aid of the Japanese Cancer Research Society and a special grant from the government. They say that they have never learned of an instance of spontaneous mammary cancer in rabbits. They injected subcutaneously 1 c.c. of the mixture of lanolin and an aqueous extract of tar, twice a month and later once a month, or the injection was made with 0.3 c.c. of pure tar directly into the mammary gland once a month. The rabbit with the adenocarcinoid cast four litters during the 463 days of the experiments.

The Interstitial Cells.—Ishibasi concludes his long study of the nature and purposes of the interstitial cells of the testicles with the statement that he was unable to detect any connection between the proportions of epithelial cells and the degree of development of the external sexual characteristics. The plates show the microscopic findings in these cells at different ages and in the rat under vital staining.

Fate of Morphin.—Tamura's research was mainly on the oxidation products of morphin and their action. The data presented seem to indicate that the paralyzing action of morphin is the work of the alkaloid itself, while the second phase, the stage of excitement, is the work of some product of its disintegration.

Berliner klinische Wochenschrift, Berlin

Dec. 29, 1919, 56, No. 52

Sensitiveness of the Cornea. Goldscheider and Brückner.—p. 1225.

Street Car Fracture of the Humerus. Pawel.—p. 1231.

*Immunotherapy of Cancer. C. Lewin.—p. 1233.

*Effect of Digitalis on Diuresis. A. Jarisch.—p. 1235.

Autoserotherapy of Cancer.—Lewin relates his experience with autoserotherapy in the treatment of a woman, aged 44, who had been suffering for three years with various complications from cancer of the breast. In April, 1916, the right mamma had been amputated for carcinoma simplex. In 1917

a second operation was required, followed by roentgen-ray treatment. In April, 1918, when reexamined, vision of the right eye was almost gone, doubtless owing to cancerous metastases in the right orbit. From May 3 to May 15, 1918, the patient was given intensive roentgen-ray treatment, whereupon vision in the right eye improved and some of the nodules on the breast disappeared. In November, 1918, the nodules adjacent to the operation scar had returned, with ascites. Jan. 11, 1919, 3 liters of clear serous fluid were withdrawn from the abdominal cavity. In May, 1919, as the ascites was gradually increasing, treatment by autoserotherapy was begun. He aspirated 10 to 20 cm. of fluid from the abdominal cavity, and reinjected it under the abdominal skin. June 23, 1919, she was readmitted to the hospital, and received two or three injections of the fluid from the abdomen per week, from 15 to 20 cm. each, and at the same sitting the nodules were given roentgen-ray treatment. The nodules, in sharp contrast to their behavior following the preceding series of exposures, began to show a marked tendency to retrogress. July 15, 1919, 3½ liters were withdrawn from the abdominal cavity, part of the fluid being left in order to continue the autoserotherapy. After the puncture, several abdominal tumors, some as large as a fist, could be palpated. The patient continued to receive two injections weekly into September. The nodules gradually receded more and more, and the ascites showed no tendency to develop again. Gradually all symptoms disappeared. Nov. 26, 1919, the nodules on the breast and back had entirely retrogressed, leaving merely pigmented spots. The ascites had disappeared by October, and the tumors in the abdominal cavity had likewise completely receded. The right eye still protrudes, and is quite blind. No clinical trace of a carcinomatous disease process could be discovered then, and the appetite and general health were good as compared with the former condition. He has previously published a case of the kind in which the results were equally good from this autovaccination, and no roentgen exposures had been made.

Inhibitive Effect of Digitalis on Diuresis.—Jarisch reports two cases of syphilis of the aorta with insufficiency of the semilunar valves in the uncompensated stage, in which diuresis was inhibited by therapeutic doses of digitalis but was increased by very small doses. He thinks that owing to the increased excitability of the blood vessels of the kidney, the threshold for both the vasoconstricting and vasodilating effect of digitalis was reduced. As both patients had incipient contracted kidney, the conclusion may perhaps be drawn that overexcitability of the blood vessels of the kidney is characteristic of contracted kidney in the incipient stage. A second conclusion would be that in the presence of contracted kidney great caution should be observed in fixing doses of digitalis, and that small doses are to be preferred. In heart patients the same caution is required if the low specific gravity of the urine points to renal sclerosis.

Medizinische Klinik, Berlin

March 14, 1920, 16, No. 11

*Operative Treatment of Duodenal Ulcer. Haberer.—p. 275.

Effect of Epinephrin on Blood. P. Schenk.—p. 279. To be cont'd.

*Sequels of Enterogenous Cholangitis. A. Albu.—p. 282.

Rheumatoid Conditions with Eye Affections. Junius.—p. 283.

Relations Between the Vestibule and the Posterior Cranial Fossa. O. Fleischmann.—p. 288.

Operative Treatment of Duodenal Ulcer.—On the basis of 205 cases of duodenal ulcer observed during the course of his practice, Haberer gives his conclusions in regard to indications for operation. It is his experience that gastro-enterostomy does not give very satisfactory results; several times after exclusion of the pylorus he was obliged to operate for peptic jejunal ulcer, so that he has come to regard this as a bad postoperative complication. Of late years he has been more and more inclined to resection of the duodenum, as with increasing experience and an improved technic the danger has been reduced to a minimum. He has performed 105 resections, 55 exclusions of the pylorus and 45 gastro-enterostomies for the relief of duodenal ulcer. In his first series, reported in 1918, he had 4 fatal cases out of 46 resections, a mortality rate of 8 per cent. In his second

series of 59 resections he has had only one fatal case, a mortality of under 2 per cent.

Sequels of Enterogenous Cholangitis.—Albu states that cholecystitis in children and others under 20 years of age is not so rare as is commonly supposed, as he has had seventeen cases during the past five years. He therefore recommends that if children have protracted, severe pains in the stomach, especially if they suggest colic, even though no icterus is present, a possible pathologic condition of the gallbladder should be considered, as in order to prevent the development of chronic cholelithiasis in children the first attack of cholecystitis should be recognized and given proper treatment. One girl of 11 had a typical gallstone colic, with pains mainly in the liver region but spreading to stomach and back. After vigorous purging she voided a soft calculus, weighing 2 gm., which consisted entirely of cholesterol. She had complained for a few weeks of slight stomach disturbance, but has been entirely well since passage of the calculus.

Münchener medizinische Wochenschrift, Munich

March 19, 1920, 67, No. 12

- *Adiposis Dolorosa. E. Grafe.—p. 339.
- *Collargol by the Vein in Chronic Arthritis. A. Böttner.—p. 341.
- *The Relative Size of the Heart. R. Geigel.—p. 343.
- *Effect of Ultraviolet Rays on the Blood. K. Traugott.—p. 344.
- *Meat from Tuberculous Cattle. M. Müller.—p. 349.
- *Improved Technic for Levaditi Silver Stain. J. Saphier.—p. 352.
- *Abortive Course in Case of Lethargic Encephalitis after Intralumbal Injection of Influenza Antiserum. Fendel.—p. 353.

Atypical Adiposis Dolorosa.—Grafe reports a case in which the onset of the disease at the early age of 14 was unusual, as there is only one other case of record (White) in which the disease appeared at an earlier age than 30. The symptoms were also unusual. Ordinarily the deposits of fat are tender and spontaneous pains (commonly of a neuralgic or rheumatic order) are slight, and only appear occasionally; in Grafe's case there was scarcely any pain on pressure, and spontaneous burning sensations and an inner feeling of great tension characterized the subjective aspect of the case. In other reported cases the periodicity of the pains and the fact of their appearing just before the beginning of new bunches have been ascribed to new deposits of fat infiltration, but Grafe thinks that the cause of the intermittent pains in his patient was accumulation of water in the fatty tissue, and perhaps in the musculature also. This alone would explain the intermittent swelling up of the deposits of fat and their subsidence at certain times. Bernoulli has published a case suggesting this in some respects. He called it a case of "false obesity from retention of fluid."

Formula for Determining the Relative Size of the Heart.—Geigel thinks that the main question from the clinical standpoint is not "How many cubic centimeters does the heart measure?" but "How many cubic centimeters of heart muscle are there to the kilogram of body weight?" As a rough formula for determining this ratio, he measures the size of the heart orthodiagram shadow (S) in square centimeters, multiplies this figure by $\frac{3}{2}$, divides the product by the weight (naked) in kilograms (W). The formula is thus $\frac{S\frac{3}{2}}{W}$. He

has been using this formula for five years and has found it reasonably accurate and of great clinical value. He calls it the reduced heart quotient.

Effect of Ultraviolet Rays on the Blood.—Traugott states, as the result of his investigation, that ultraviolet rays do not affect the number of red blood corpuscles in man. Under normal conditions the same number of leukocytes are found in the capillary blood and in the venous blood stream. A uniform increase in the leukocytes takes place usually following raying with ultraviolet rays provided the sitting is continued long enough (from ten to fifteen minutes); if the exposure is of shorter duration, there will be a difference between the number of leukocytes in the capillary and in the venous blood. The increase caused by the raying affects leukocytes and lymphocytes alike. Another effect on the blood from the influence of the ultraviolet rays is that it coagulates sooner. The number of blood platelets is likewise increased.

Meat of Tuberculous Cattle.—Müller opposes the idea that the basis of judging tuberculous food-producing animals should rest on whether there is a blood infection or a lymph gland infection. He thinks the criterion should be the degree of pathologic changes. In the presence of a high degree of emaciation, the carcass should be condemned as totally unfit for human consumption; otherwise, if only certain organs are affected, it may be used subject to certain restrictions.

Wiener klinische Wochenschrift, Vienna

April 8, 1920, 33, No. 15

- Diagnostic Significance of Examination of Vestibule of Internal Ear. S. Gatscher.—p. 305.
- *Early Treatment of Corrosive Esophagitis. H. Salzer.—p. 307.
- Friedmann Treatment for Tuberculosis. M. Weiss.—p. 307.
- Pelvic Abscess After Gunshot Wounds. W. Sacken.—p. 310.
- Latent Syphilis and Changes in the Spinal Fluid. J. Kyrie.—p. 313.
- Conc'n.

Early Treatment of Corrosive Esophagitis.—Salzer waits only from two to six days, that is, until the first severe symptoms from swallowing the caustic have subsided, before he begins preventive treatment by introducing a weighted bougie to ward off the development of a stricture. His twelve patients thus treated all recovered and showed no trace of stenosis when dismissed from the hospital. According to Hacker, a well known authority on the subject, more than 50 per cent. of the patients who survive the swallowing of caustic alkalis, have a severe stricture of the esophagus, and the rest, with few exceptions, mild strictures, and 33 per cent. of those who have strictures succumb from the effects. Salzer finds that by the old waiting policy, patients suffer great pain and often become greatly emaciated, whereas if early intervention is practiced it is not difficult to keep up nutrition, and the pain suffered is very slight.

Zentralblatt für Chirurgie, Leipzig

April 3, 1920, 47, No. 14

- Ten Years of Arthroplasty. E. Payr.—p. 313.
- *Habitual Luxation of the Shoulder. F. Loeffler.—p. 324.
- *End-Results in Primary Joint Injuries. P. Erlacher.—p. 327.
- Two Crossed Safety Pins as Improvised Wound Clip. Hofmann.—p. 331.

Correction of Habitual Dislocation of the Shoulder.—Loeffler prevents the luxation by fastening the humerus to the acromion without opening the joint. Through a vertical incision on the outer aspect of the arm, from two finger-breadths above the acromion to the middle of the deltoid muscle, he separates the fibers of the deltoid and holds them apart with retractors. The arm is then rotated to bring the greater tuberosity into prominence, and a tunnel is made in this with an electric drill and a corresponding single hole is drilled in the acromion above. The holes are enlarged and a strip of fascia, 2 by 10 cm., taken from the thigh, is passed through the tunnel in the tuberosity and one end through the acromion, the ends being brought together over the acromion and sutured, end to end. The arm in the case described can be lifted to 85 degrees and rotated, and further functional improvement may be anticipated.

Zentralblatt für Gynäkologie, Leipzig

April 3, 1920, 44, No. 14

- *Puerperal Inversion of the Uterus. F. Engelmann.—p. 337.
- Intraperitoneal, Cervical Cesarean Section. Lichtenstein.—p. 343.
- *Ascaris Lumbricoides in Fallopian Tube. P. Nacken.—p. 346.

Puerperal Inversion of the Uterus.—Engelmann states that inversion of the uterus seems to be getting more common than published statistics would indicate. On the basis of observations of three cases he holds the view that the Credé method, which seems to be universally used in cases of hemorrhage from atony of the uterus, may easily lead to inversion of the uterus. He therefore suggests that the maneuver be done with both hands and outstretched fingers, which he finds minimizes the danger. Unless there is pronounced shock, he recommends immediate reduction of the inverted uterus under ether narcosis.

Ascaris in Fallopian Tube.—Nacken reports a case in which a dead ascaris, 25 cm. long, was found in the suppurating fallopian tube.

Zentralblatt für innere Medizin, LeipzigApril 3, 1920, **41**, No. 14

Gurgling Sound with Suppuration in the Thoracic Cavity. W. Stepp and Bennighof.—p. 250.

April 10, 1920, **41**, No. 15

*Sweating Procedures and Secretion of Urine. H. Brütt.—p. 266.

Effect of Sweating Procedures on the Quantity of Urine and on Its Specific Gravity.—Brütt has been experimenting with the view to so modifying the Volhard test for the concentration activity of the kidney that in place of the dry-food diet that the test requires a sweating procedure may be substituted. He found that all healthy subjects did not react alike to the various sweating procedures. In some a maximal concentration of the urine was produced; in others a marked polyuria with very low specific gravity occurred, while in others, again, no appreciable effect was noted. While it was evident that a sweating procedure could not in all cases be substituted for the Volhard test, the experiments showed that in applying sweating procedures to kidney patients if a specific gravity of 1.030 for the urine could be shown, we are justified in assuming that the concentration activity is satisfactory. But if there is no increase of the specific gravity, or if there is a decrease, either with or without an increase in the quantity of the urine, no definite conclusions can be drawn in regard to the functional capacity of the kidney. Only the positive result is decisive—and it is only in a small proportion of these cases that such a result is secured.

Acta Medica Scandinavica, StockholmMay 6, 1920, **53**, No. 3

*Xanthochromia in Cerebrospinal Fluid. A. Wallgren.—p. 303.

*Etiology and Pathogenesis of Sciatica. F. Lindstedt.—p. 318.

Xanthochromia in Spinal Fluid.—Wallgren regards the hemorrhagic tendency of epidemic meningitis as one explanation of the xanthochromia observed in the cerebrospinal fluid. Or the xanthochromia may come from stagnation of the spinal fluid from obstruction of communication with the cranial subarachnoid space. In 103 cases of epidemic meningitis at the Upsala hospital in the last five years the mortality after the first twenty-four hours was 19.6 per cent., but it was only 14.8 per cent. among the 74 without xanthochromia while it was 39 per cent. among those with xanthochromia. The total mortality in these groups was respectively 28.3 per cent. 25, and 42.1 per cent., testifying to the gravity of the cases in which xanthochromia is observed. It forms part of what he calls the syndrome of Froin, that is, the spinal fluid is frankly yellow, with abundance of albumin, coagulates *en masse*, and contains numerous mononuclears. It not only throws light on the prognosis, but warns of the necessity for intraventricular injection of the antiserum if the condition is not improving under spinal injections. More attention should be paid to serotherapy by the vein in these cases, as epidemic meningitis is a general septicemic condition, not confined to the meninges. The details of six cases are described to sustain these conclusions and two pages of bibliography are appended. The article is in French.

Sciatica.—Lindstedt declares that it is impossible to draw the line between neuritic, myitic and neuralgic symptoms in sciatica, and states that in practically all of his 100 cases he found abnormal conditions of traumatic, inflammatory, neoplastic or varicose nature in the bones, joints, or soft parts of the legs, back or pelvis, usually near the course of the sciatic nerve, or else deformity of some kind or static anomalies. The nature, the localization, the chronology and the frequency of changes of these kinds in his cases of sciatica testified to a causal connection, the irritation from these abnormal conditions entailing in time a functional overexertion of that part of the central sensory nervous system involved, until it gets the "neuralgia habit" from the constantly recurring irritations from the periphery. This conception of sciatica opens new horizons for treatment of both sciatica and lumbago, and explains the benefit from empiric measures and also the neurotic or psychic factor prominent in certain cases. The article is in German.

Finska Läkaresällskapets Handlingar, HelsingforsMarch-April, 1920, **62**, No. 3-4

*Hematogenous Nephritis. B. Runeberg.—p. 165.

Hairs in Supernumerary Nipples. Y. Kajava.—p. 210.

*Postdiphtheric Stenosis. H. Bardy.—p. 223.

Heterochromia of the Iris. J. G. Lindberg.—p. 231.

Bothriocephalus Latus and Digestive Symptoms. G. Becker.—p. 240.

Aseptic Renal Pyuria.—Runeberg was surprised to find that in only 33 per cent. of his 56 cases of aseptic renal pyuria was tuberculosis responsible. In 12.5 per cent. a calculus was a factor. An individual predisposition rather than any special causal agent is involved in this hematogenous pyelitis persisting interminably. The staphylococcus was most often responsible in his cases. The pyelitis is abacterial only because it does not reach us in the florid stage; sections of the kidney usually reveal the bacteria. His histologic and clinical experience has demonstrated, he says, that the blood borne infection induces first a glomerular nephritis, sometimes too mild to induce appreciable symptoms; then elimination of bacterial and waste products entails foci in the kidney tissue and an elimination pyelitis. Interstitial nephritis develops gradually from this, with subcapsular foci and possibly complicating thrombotic and embolic processes. It seems to conflict with this theory, he admits, that 17 per cent. of the 23 men in the 30 operative cases had prostatitis, but we know that urinary disease is a disease of an apparatus not of a single organ. Examining the pus in the urine of 10 tuberculous and 10 of nontuberculous abacterial pyuria and a large number of other pathologic conditions in the urinary passages, Runeberg found striking and characteristic changes in the leukocytes only in the tuberculous cases. The leukocytes showed uneven, polyhedral, gnawed edges, and they took the stain badly, while with other infections they were usually round and stained normally. With tuberculosis, the nuclei may drop out and vacuoles appear. Acute onset and alternation of symptoms and free intervals testify further against tuberculosis, but if the unilateral pyuria is sapping the patient's vitality, nephrectomy is indicated as the kidney will usually be found malformed or otherwise congenitally inferior. This was manifest in 3 of his 10 nephrectomy cases. His experience has confirmed the prompt subsidence of the symptoms of cystitis after nephrectomy for blood borne pyelitis, proving anew the integrity of the bladder. In 2 cases an abacterial pyelitis flared up and bacteria appeared in the urine under the provocative influence of operative measures elsewhere. This secondary flaring up of this elimination pyelitis might prove misleading in some cases.

Treatment of Postdiphtheric Stenosis.—Bardy reviews his experience with stenosis of larynx or trachea rendering it impossible to discard the tube. From five to fifteen months was required for the progressive dilatation, and any method will succeed, he says, if perseveringly applied. The tracheotomy tube has to be worn during the whole period of dilating as acute edema is liable to develop otherwise. He found Schmiegelow's translaryngeal permanent drain method difficult to apply to small children and liable to set up inflammation. The diphtheria in itself, without intubation, may induce necrotic processes responsible for stenosis, as in one of his cases, but as a rule the stenosis develops at the end of a tube. The mucosa in diphtheria seems to be exceptionally sensitive to mechanical irritation.

Hospitalstidende, CopenhagenMarch 24, 1920, **63**, No. 12

*Nail Extension for Old Fractures. E. Nielsen.—p. 177.

Action of Light on Vitiligo. C. With.—p. 182.

Nail Extension for Old Fractures.—Nielsen cut away the callus and reduced the overlapping stumps in two cases of fracture of the femur which had healed three or four years before with a shortening of 6.5 to 7 cm. He then applied weight extension from nails driven into the bone, and the deformity was corrected, the shortening being reduced to 1 and 1.5 cm. Except for a little pressure necrosis, there were no mishaps; the nails were removed the twenty-first day. The only inconvenience from the method was from the counter pressure in the perineum and axillae. The counter pressure was aided by raising the foot of the bed.

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THE FUTURE OF PEDIATRICS*

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BOSTON

I have chosen the "Future of Pediatrics" as the subject of this address because I desire to emphasize the fact that our specialty is no longer one in which a group of physicians have problems which are of interest only to themselves, for these problems are intimately connected with the welfare of the community and the nation. Since thoughtful people, both in and out of the profession, are bound to give pediatrics even greater consideration in the future, it is well that we should consider the possibilities of future development in the advancement of our own knowledge, and especially in the improvement of the general welfare.

Although this subject can be considered from many equally important angles, there is not sufficient time to discuss them all. Let me, therefore, outline the whole and then consider in detail the most important problems which present themselves to the specialist in the diseases of children. These problems should be considered from the point of view of (1) the medical schools, (2) the practitioner and (3) the public.

Research into the nature, cause and prevention of disease is assuming an importance not recognized a decade ago. It has added knowledge which has made it possible to cure many diseases which were often fatal. Such advances have been made in our knowledge that our conception of many diseases have been entirely changed. Our knowledge of what normally takes place in the body has been so enlarged that we now have a better standard with which to compare pathologic physiology. As a result of this new knowledge we are now able to treat and prevent disease more efficiently than ever before. The returns from effort and painstaking research in the laboratory, and in the field, have been so great that they have more than justified the money spent in this manner, and have made it possible to expand the work tremendously. The accomplishments of those medical schools which already have well endowed departments of pediatrics will undoubtedly stimulate expansion in other schools. We may expect the future to give still more generous support to our young men, and, as a result, to see America assume the world's leadership in pediatrics. Research, therefore, plays an important part in the study of the nature and cause of disease, and it also plays an equally important part in the study of the prevention of disease.

Preventive pediatrics, which in the past was the object of many studies, received great impetus during

the war. The annual meetings of the American Child Hygiene Association have been devoted to preventive pediatrics. The object of the campaigns and propaganda of the "Children's Year" was to increase the interest in preventive pediatrics in every home in the United States. Finally, the conference of the League of Red Cross Societies, which met in Cannes, France, April 1, 1919, brought together men interested in public health from France, Great Britain, Italy, Japan and the United States. Child welfare, or preventive pediatrics, next to stopping the epidemic of typhus fever then prevalent, was given the place of greatest importance by this group of scientists. The tendency of the present, therefore, is to emphasize the importance of the child as the citizen of the future. The part which preventive pediatrics will hereafter play will undoubtedly be so great that medical schools as well as physicians will be compelled to adapt themselves to their changed relations to the public.

Any effort to improve the welfare of children should bring results which will yield far greater returns than efforts directed toward improving the welfare of adults; the establishment of correct habits in a healthy child ought to insure a healthy adult life. This may be accomplished in two ways: either by training the individual child, or by training groups of children as in public child welfare clinics. It is especially important that this work be done during childhood, because it is now believed that many, if not most of the diseases of adult life originated in childhood. Think how much indigestion in the adult could be prevented if proper dietetic habits had been learned during childhood. Think of the deafness, the blindness and the other crippling diseases which could have been prevented if treated skilfully during the age of life which comes under the charge of the obstetrician and the pediatrician. There is much evidence that tuberculosis and endocarditis first gain entrance to the body in childhood. How much easier it would be to cure these diseases at their inception than to cure them after the various organs have been invaded and damaged by them.

The magnificent work done in preventing malaria, yellow fever and typhoid shows what a great saving in life and national efficiency can be accomplished by preventive work. Such examples should be sufficient to emphasize the importance of preventive pediatrics, from the further advances of which results, even beyond our dreams, may be expected.

Advances may be expected from medical schools, practitioners, public health officers, public health nurses, social workers, and the public itself. The public was awakened to its responsibility to the child by the recent campaign of the Children's Year and the terrible sufferings among the children of devastated countries during the war, and we must be prepared to

* Chairman's address, read before the Section on Diseases of Children at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

meet the new demands with sane and balanced judgment.

The problems should be worked out in those educational centers in which the medical school forms the nucleus. The advances can first be made by those medical schools in which the proper methods can be worked out, and taught to students who later graduate and devote their lives to their application. In most medical schools the teaching of preventive medicine as applied to child life is almost entirely lacking. In the few that give it any attention whatsoever, so little time is allotted that the student hardly becomes interested. It is only when this student graduates that he appreciates how woefully lacking is his education in a phase of medicine that makes up so large a part of his work with children.

The physician is often called in to advise the mother as to how to nurse her baby. How many young graduates have not been taught this but have been obliged to learn it by experiment on their patients? Too often they find it easier to wean the baby than to go through the trouble of straightening out the mother. How many babies' lives could have been saved if the physician understood the physiology of lactation and had had experience in the art of handling the nursing mother. There are more opportunities to use such knowledge than to recognize and treat rickets. If, however, the student acquired and used such knowledge successfully he should have little or no rickets among his own patients to treat. If this medical student is multiplied by the thousands that graduate each year, it should not be long before a marked diminution in the number of cases of rickets throughout the country would be seen.

We are all called on to regulate the artificial feeding of infants. In fact, almost the first thing we are called on to do in practice is to regulate the feeding of a normal infant. Of my first thousand cases seen in private practice 264, or more than one quarter, were for the regulation of their feeding. Although five or ten years ago this may have been true only of the specialist in pediatrics, today it is becoming equally true of all general practitioners. These general practitioners are always anxious to have papers read to them on infant feeding, and it is evident that the public is demanding of them greater knowledge of this art.

A century ago, Underwood¹ said that "a very principal cause of the above mentioned neglect has arisen from an ancient idea, for a long time too generally entertained, that, as medical people can have but a very imperfect knowledge of the complaints of infants, from the inability of children to give any account of them, it is safer to trust the management of them to old women and nurses; who at least are not likely to do mischief by violent remedies, though they may sometimes make use of improper and inadequate ones." This applies all too commonly today. The feeding of normal infants is a subject the teaching of which is woefully lacking in our medical schools. In some schools, as a requirement for the degree, the student must deliver twelve infants. I believe that he should also be required to regulate the feeding of twenty infants during at least a six months' period so that he will be familiar with the feeding of both naturally and artificially fed infants. This work should be done under competent supervision, and would give the prospective practitioner that familiarity with the

subject which can never be obtained in lectures or books. If he were also given suitable training in the normal physiology and care of the infant and young child (and experience in their care), there would be less need for the knowledge of those diseases which now results because of the lack of this training. It is much easier to keep a healthy baby well than to cure one of infantile atrophy.

This improved instruction and training could be best accomplished by making the child welfare and baby hygiene stations an integral part of the medical school. Such well-baby clinics and clinics for the runabout child could be manned by the staff of the medical school and used in teaching.

Much of the teaching in medical schools today is on subjects which have less and less practical importance. When I was a house officer from 1905 to 1907, there were always several patients in the hospital with typhoid fever, often including one or two unfortunate nurses or house officers. With the advent of preventive inoculation, and the more advanced practice of the principles of public hygiene and sanitation, typhoid fever (in my community at least) is becoming almost as much of a medical curiosity as is smallpox.

Several years ago, a successful practitioner in a summer resort told me that the previous summer he had had 120 patients with infectious diarrhea, of whom several died. The next summer, with the establishment in that community of a certified milk dairy, he had less than a dozen cases. This experience is not unique because the wards in my hospital which used to be full to overflowing with infectious diarrhea now receive only five or six cases each summer.

Since the character and incidence of disease is changing, the type of teaching should be modified to conform with our increasing understanding of the factors responsible for this change. If many diseases are fast becoming extinct, could not that time which is now being spent in teaching the methods of their treatment be used to greater advantage in teaching the methods of their prevention? The greater part of the teaching in medical schools today is directed toward the diagnosis and treatment of disease. I doubt whether one fiftieth of it is directed toward the prevention of disease among children. I believe that at least one quarter and probably more of the time should be spent in teaching the normal physiologic processes during growth, and that adequate instruction should be given in the personal and public hygiene of children. Such a program could be carried out efficiently only by the close cooperation of all departments of the medical school. The relative importance of all the subjects in the students' curriculum should be carefully weighed and balanced, and adjustments made to meet the changing times.

Although the medical supervision of the infant has been emphasized above, there is much that is lacking in the supervision of the child. Many diseases do not find a foothold in the body if the child lives in proper surroundings, has a suitable diet, and learns good and regular habits. This applies both to the home and to the school. If the physician is taught what is normal for the healthy growing child he can influence both the home and the school life. A thorough understanding of all the factors which make up a healthy home life cannot be had unless the "social" elements involved are studied and understood. A generation ago this

1. Underwood: *A Treatise on the Diseases of Children; with Directions for the Management of Infants from the Birth* 1: xxii, 1811.

understanding formed an essential part of the art of medicine as intuitively practiced by the "family doctor." In hospitals and in our own highly organized and specialized lives, it was almost a lost art until "social service" made it not only an art but also a science. The social element of medicine could well be taught along with the scientific aspects of medicine at the bedside, and thus revive that element in our professional life in which we should have a just pride.

The department of pediatrics cannot isolate itself from the other departments in teaching preventive work but, on the contrary, should cooperate with them all. The department of obstetrics could well introduce the whole subject by teaching in lectures and practice the theory and practice of prenatal care. It would be ideal if the same student could oversee the prenatal care, deliver the baby, and supervise its feeding, during the first five or six months. In this manner he would gain experience in what later he must do in actual practice. (There should also be cooperation between the department of pediatrics and the department of preventive medicine, and consideration should be given to school hygiene.)

After graduation, every practitioner should apply the principles of the prevention of disease. In those communities in which he is a pioneer, he should organize child welfare stations so that the poor as well as the rich will profit by his knowledge. The public is already prepared for such work and will welcome it, and perhaps even demand it. The practitioner need not fear that the application of these principles will decrease his income. On the contrary, although he will treat fewer sick children, he will have an increasing stream of children coming to his doors to be kept well. He will have the satisfaction of knowing that he has played a small part in diminishing suffering, in increasing efficiency, and in preparing the manhood and womanhood of our country for any emergency which the future may have in store for us.

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OBSTRUCTION OF THE HEPATIC VEINS *

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My interest in this subject was aroused by a patient who entered Lakeside Hospital, Nov. 22, 1918:

CASE 1.—The history which the man gave at the time of entrance was that he had been ill for about two weeks prior to entrance to the hospital. His essential complaint was severe pain, which started about the suprasternal notch and followed in the midline to the epigastrium. The pain was accompanied by cough and a choking sensation, and he also discovered that slight exercise caused marked air hunger. The temperature on entrance had an evening rise of 101.5, and morning remissions to 100 and 99. The pulse rate varied between 100 and 120, and the respiratory rate was between 20 and 30 a minute. The physical signs at the time of entrance revealed pericarditis with moderate accumulation of fluid in the pericardial sac. In addition to this, there was some dulness and impairment of excursion at the base of the right thorax, which was accounted for in the personal history by an attack of pleurisy one year before

admission to the hospital. On that occasion about 1 pint of clear fluid was removed from the right pleural cavity. On entrance to the hospital, the patient's liver occupied a position in the nipple line 5 cm. below the costal margin. The edge of the liver was not accessible, and as there was symmetrical inspiratory narrowing of the subcostal angle, the interpretation at this time was that the liver was displaced downward by an enlargement of the pericardial sac. There was not a sufficient amount of fluid in the pericardial sac to compress the left lung in the infrascapular region.

Within ten days after admission, the evidences of pericarditis were subsiding, the inspiratory narrowing of the subcostal angle had disappeared; and by the third week all evidences of pericarditis and effusion in the pericardial sac had vanished. December 6, the patient passed two intestinal parasites, which proved to be *Taenia saginata*. The temperature varied between 99.5 and 102. The leukocyte count was 1,200; the red cell count about 4,800,000, and hemoglobin, 65 (Tallqvist). Blood cultures were made from venous puncture and proved to be negative.

About ten weeks after entrance to the hospital, the only physical sign that the patient presented was an enlargement of the liver. There was no cause for displacement of the liver, but it still extended well below the costal margin. There was no icterus or intestinal hypocholia. The blood was centrifuged and the serum found to contain no bilirubin. Therefore cholemia, choluria and intestinal hypocholia were all excluded. Although he still had moderate elevation in temperature, the only physical signs that could be associated with infection were the evidences of enlarged liver. Unfortunately, it is not accurately known just how much the lower border of the liver rose directly after recovery from effusion in the pericardial sac. That the liver dulness lessened during this period of recovery from the pericardial effusion is definitely known, but the amount is not accurately recorded.

February 8, about the end of the thirteenth week of hospital residence, the patient developed violent pain across the upper abdomen. There was no rise of temperature, and the cardiorespiratory functions were normal. The patient's pain was intense, and required the use of morphin. The following day the liver had greatly enlarged; it had become much more resistant and was very sensitive to pressure, and the lower border occupied a position about six finger breadths below the costal margin. Within twenty-four hours after the onset of this very acute pain, which was accompanied by a rapid and painful enlargement of the liver, there was also an accumulation of free fluid in the abdominal cavity, and moderate edema of the left leg and ankle. The second day after the onset of this attack of acute pain, puncture of the abdominal cavity was performed and 20 c.c. of opalescent fluid, slightly blood-tinged, was removed. The cellular contents showed about 9,000 red and 1,000 white cells per cubic millimeter. The white cells were about equally divided among the large mononuclear, small mononuclear and polymorphonuclear cells.

The acute pain and tenderness subsided in the course of several days, but the ascitic fluid continued to accumulate, until about three weeks after the acute attack of pain, when 4,100 c.c. of fluid were removed from the abdominal cavity. The fluid was slightly turbid and opalescent; did not coagulate on standing; the specific gravity was 1.014, and there were 10,000 cells per cubic millimeter, 160 of which were white blood cells. Nine days later 5,300 c.c. were again removed, with the same character as the first.

The abdomen has been tapped twenty-seven times in the last year. The character of the fluid has always been the same; but the fluid has been accumulating at much longer intervals during the last five months. The man's physical condition has steadily improved, and now the only evidences of disease are ascites and the slight elevation in temperature associated with a hepatic enlargement. The liver is no longer sensitive. There are no irregularities on the edge or on the surface of the liver. The edge is slightly rounded. On entrance to the hospital the spleen was not enlarged, but within a few weeks after the first attack of pain with acute hepatic enlargement, the spleen became enlarged and remains now palpable at the costal margin.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

In reviewing this case we can say that the man, one year before entrance to the hospital, had pleurisy with effusion of the right side, from which he made a prompt recovery, and then a few weeks before entrance to the hospital, there developed a pericarditis with effusion. As the pericarditis subsided, there suddenly developed an acute painful enlargement of the liver, which was unassociated with any new evidence of infection or any evidence of disease of the hepatic parenchyma or peritoneum. There was no evidence of disturbed production or excretion of bile. This was at a time when the heart's function was perfectly competent.

The only manner in which this collection of phenomena could be explained would be by some obstruction to the passage of blood through the liver. The enlargement was due to blood stasis within the hepatic and portal veins. If the rise in pressure within the radicles of the portal vein had been due to obstruction within the trunks of the portal vein, there would have been no acute enlargement of the liver. One cannot conceive, in fact, of the blood stasis originating elsewhere than in the large trunks of the hepatic vein. Obstruction of the hepatic veins offers the only satisfactory explanation for such an acute and pronounced enlargement of the liver, accompanied by stasis in the radicles of the portal vein and without disease of the hepatic parenchyma. Although the logic of the clinical evidence was inescapable, the diagnosis was made at the time with many misgivings on account of want of knowledge of the subject.

CASE 2.—A man, aged 31, admitted to the hospital, Aug. 21, 1919, up to the onset of his present illness had always been vigorous and strong. In March, 1914, he had an acute infection with a rise in temperature to 104. He was confined to his bed only four days. With the exception of lethargy and drowsiness, which persisted throughout the entire summer, he cannot recall any very distinct symptoms. How long his fever lasted is not known. We know only that during the acute period his temperature rose as high as 104. During the winter of 1914-1915, he was able to work, although he suffered from air hunger with moderate exertion, and a sense of constriction about the epigastrium, which was relieved in a short time by rest. In the spring of 1915, he was feeling depressed and sick, and was quite surprised when, after moderate exertion, he suddenly vomited all the contents of his stomach without the slightest premonition of nausea. The vomiting was projectile in character, and proved very embarrassing to him by occurring in street cars and public places, and attended vigorous exercise or unusual efforts in laughing or coughing. The vomiting originated purely through nervous excitation in the vicinity of the diaphragm, and was brought on by unusual phrenic activity.

In the winter of 1915-1916, he worked very little and his strength gradually improved. In March, 1917, he was put on the police force. He was quite vigorous and was able to handle recalcitrant prisoners, but even during this period the projectile vomiting would occasionally occur. In February, 1918, he found he could not continue his work. Medical examination at that time revealed an enlarged heart and a large liver. In June, 1918, he gave up his work on account of dyspnea with slight exertion, swelling about the epigastrium and fulness in the precordial region. His feet and legs and abdomen, and at times his chest and neck, were edematous. There was no cyanosis.

In January, 1919, he apparently received very much benefit from mercuric therapy, which was given on the assumption that he had had a syphilitic infection. He says that at that time the liver became smaller. In March, 1919, he was well enough to be about. His edema had disappeared and he was comparatively comfortable. In June, 1919, he went to work as a shop policeman. Then the upper half of the abdomen

swelled; he became short of breath, and the medicine which previously had benefited him failed to give relief. He then entered Lakeside Hospital. He says there was no jaundice at any time during his illness, and he thinks he had no fever except in 1914, and he has had no nocturnal dyspnea at any time.

When he entered Lakeside Hospital, he had marked edema of the lower extremities and the abdominal wall. The liver dulness was 22 cm. in the right nipple line. The surface of the liver was perfectly smooth. The edge was not palpable; it was somewhat rounded, although the consistency was quite like that of hepatic cirrhosis. The enlargement of the liver was uniform. The spleen was palpable at the costal margin; it was firm and plump. On admission there was an abundance of free fluid in the abdominal cavity, and there was some fluid in the right pleural cavity. In October there was no fluid in the left pleural cavity, but the right pleural cavity was tapped, and 1,100 c.c. were removed. It was pale straw-colored, did not clot, and was very clear. It contained only 630 cells per cubic millimeter, only 20 of which were white cells, and the specific gravity was 1.008. There were only 2 gm. of albumin per liter by the Esbach test. Although the evidences of thickened pleura were pronounced and pleural frictions were abundant, after the removal of the fluid there was no pain. Although there were evidences of thickening of the pleura of the left side, no fluid was ever obtained.

About 5,300 c.c. were removed from the abdominal cavity, and it was identical in character with that removed from the pleural cavity. So the fluid from both serous cavities was decidedly that of a transudate, although there were never evidences from the kidney or from the heart which would account for retention of body fluids. There were marked evidences of anastomotic dilatation of the radicles of the veins of the upper thorax and the superficial epigastric veins, and from the first it seemed evident that the accumulation of fluid in both pleural and peritoneal cavities was the result of stasis in the radicles of the azygos and portal veins.

Since his residence in the hospital, repeated employment of antisyphilitic treatment and large doses of digitalis have failed to modify the accumulation of ascitic fluid, although there has been no return of the fluid in the pleural cavity. The abdomen has been tapped thirty times, and there never has been evidence in the fluid to indicate peritoneal inflammation. The blood plasma has failed to show any bilirubin, and there has been no urobilin in the urine. The general edema has entirely disappeared. The patient's heart is of normal size, with no evidence of any myocardial incompetence. The great enlargement of the liver and the persisting stasis in the portal vein unaccompanied by any evidence of disease of the hepatic parenchyma, together with the evidences of stasis in the inferior cava, which has gradually been compensated for by anastomosis, justify the diagnosis of obstruction of the inferior cava with obstruction of the hepatic veins.

It is not difficult to understand why medical literature is very meager on the subject of the hepatic veins. They are not examined as a routine at necropsy, and when they have been studied it has been usually in histologic sections. The gross appearance of the intrahepatic portion of the cava and the opening of the hepatic veins are not studied at necropsy. The literature on the subject contains about thirty cases, and teaches that obstruction of the hepatic veins may be caused in several ways. The cases which have been studied show that the large hepatic trunks may be invaded by active inflammatory processes in the liver, such as metastatic abscesses; also, inflammation of the peritoneum and pericardium may invade the cava and ostia of the hepatic trunks; it may result from primary inflammatory processes in the cava and trunks of the hepatic veins; obstruction of the hepatic trunks may also occur from primary thrombotic

processes within the veins, and this may occur when there is no evidence of any primary inflammatory process in the cava or hepatic veins or the peritoneum or Glisson's capsule,

LITERATURE

The first case reported was by Budd,¹ who reported two instances of obstruction of the hepatic veins which attended hepatic abscess, and one case of obstruction of the hepatic veins which was associated with synechia cordis, perihepatitis and peritonitis.

About the same time Frerichs² reported what he described as phlebitis hepatica adhesiva. He says: "This is on the whole a rare form of inflammation and in most cases results from inflammation of the capsule of the liver and coriaceous covering of the diaphragm at the posterior margin of the liver, which is projected into the vein. The wall of the vein becomes thickened, whilst gelatinous deposits and occasional valvular projections, narrowing the channel of the vessels and sometimes completely obliterating some of the branches, will develop on the internal surface. This condition is attended by symptoms of obstruction similar to those which result from occlusion of the portal vein, with the addition of extravasations of blood into the hepatic tissue. Thrombi are liable to develop in the portal vein on account of obstructed circulation."

Frerichs concluded his necropsy observations on this case with the statement that clinical differentiation between obliteration of the hepatic veins and obstruction of the portal vein is impossible.

A case of complete obliteration of the mouths of the hepatic veins has been reported.³ A child, aged 17 months, three months before death showed evidences of a painful swelling of the abdomen. There was no jaundice and no hemorrhage. When the child was 16 months old, two months after the onset of illness and one month before death, the abdomen was tapped and 12 ounces of greenish serum were withdrawn which had a specific gravity of 1.011. Nineteen days after the first tapping, the second tapping was done and 2 pints of fluid withdrawn. Death occurred in five days after the second tapping. Although there is a statement that there was no peritoneal inflammation and that the liver, which weighed 16¾ ounces, was probably smaller than it should be and increased in density with rounded edges, nevertheless the capsule of the liver was everywhere thickened, especially about the suspensory ligament and half of the left lobe, and Glisson's capsule was much thickened in the portal fissure. Section revealed a nutmeg character to the liver. The hepatic lobules had a dark center, surrounded by a fatty zone. Tracing the hepatic veins toward the vena cava, they were found to end abruptly just short of entering the cava, and were cut off from the cava by a thin membrane. The lining of the cava was perfectly smooth and normal. Where the mouths of the hepatic veins should have been, there were shallow dimples, which had not at all the look of scars. Many of the large branches of the hepatic veins were filled by colorless adherent thrombi.

Eppinger⁴ reported a case of obstruction of the intrahepatic portion of the cava with thrombosis of the hepatic veins and diffuse interstitial hepatitis, which was interpreted as syphilitic.

From Quincke's clinic at Kiel, 1886, William Lange reported a case.

From the same clinic in 1899, J. H. Thran reported the case of a woman, aged 32, who entered the Frauenklinik in August, 1897, where an exploratory incision was made. The liver was not enlarged, but the spleen was slightly enlarged and there was a large ascitic accumulation. Four months later she entered the medical clinic on account of an enormous ascites. It was there observed that the right lobe of the liver was not enlarged but was hard and granular. The left lobe of the liver was, however, increased in size, and the spleen was at the costal border. At necropsy the

liver weighed 1,760 gm. and the spleen weighed 550. There was thrombosis of the cava just below the entrance of the hepatic veins. The large trunks of the hepatic veins were obstructed by fresh thrombi. The portal vein and hepatic artery were normal.

Churton⁵ reported the case of a man, aged 26, who died after a short residence in the hospital. The case was interpreted as hydatid cyst, but turned out at necropsy to be due to serous fluid, which was fixed between the liver and the diaphragm. In the center of a cirrhotic liver was found a hepatic vein with an organized thrombus. Churton says the histologic appearance suggested that fibrous tissue had invaded the hepatic vein from the outside. There were no evidences of involvement of the cava.

In 1899 Chiari⁶ of Prague reported three cases under the title of "Obliterating Phlebitis of the Large Trunks of the Hepatic Veins as a Cause of Death." In reviewing older literature, Chiari makes the statement that obliterating phlebitis of the large hepatic veins had been interpreted as evidence of a process of contiguity, and supposedly originated from inflammatory processes in the vicinity of the hepatic veins. But he reports three cases in which the necropsy revealed a primary obliterating phlebitis of the hepatic veins.

The first case, seen in 1885, concerned a woman, aged 28, who was serving as a wet nurse. The patient died at the end of a three days' illness, which began with very stormy symptoms of abdominal pain, nausea and vomiting. The sudden onset of the illness and the obscurity of the symptoms led to a medicolegal investigation on account of the suspicion of poisoning. The severe symptoms in this patient lasted only fourteen hours before death occurred.

The interpretation of this case was that the patient had a moderate amount of stasis due to syphilitic phlebitis, which had existed for a long time; but the acute symptoms which developed a few days before death were due to complete occlusion of the hepatic veins by the formation of fresh thrombi.

Chiari's second case came to necropsy in 1893. The patient was ill for several months and developed the clinical signs of ascites attended with pain which suggested peritonitis. Three and five-tenths liters of bloody serum were found in the peritoneal cavity. There was an aneurysm of the left ventricle of the heart the size of a hen's egg, which was traceable to an obliterating arteritis of the left coronary artery. The liver was slightly enlarged; the capsule was not thickened; the veins were full of blood and there were thrombi in the portal vein. At the openings of the hepatic veins into the cava there was scar tissue which completely obstructed the lumen of the veins.

Chiari's third patient, a man, aged 29, was examined at necropsy in 1895. This patient showed symptoms for three months prior to his death. There was rapid enlargement of the liver, enlargement of the spleen, and ascites. Six liters were withdrawn from the abdomen shortly after entering the hospital. Two days later another paracentesis was performed, and 10 liters were withdrawn. Five days later the patient died. The patient gave the history of gonococcus infection, but denied syphilis, and prior to his terminal illness had never been sick. A clinical diagnosis was made of hepatic cirrhosis, ascites and hydrothorax. When the abdomen was opened at necropsy, 10 liters of hemorrhagic serum were removed. The left pleural cavity contained about 50 c.c. of hemorrhagic serum. Following the hepatic veins to their ostia, it was found that their walls were greatly thickened. At the point where they opened into the cava, the lumina were so narrow that an anatomic sound could scarcely be passed.

Hess⁷ reports the case of a girl, aged 16, who at 12 years of age was admitted to the Prague hospital with ascites, from which she recovered and lived four years before the ascites returned. After the return of ascites, death followed very rapidly. Hess says this was clearly due to a growth of the intima of the cava encroaching on the intima of the hepatic veins at their ostia. The cava and hepatic veins

1. Budd: *Diseases of the Liver*, 1857, p. 195.

2. Frerichs: *Disease of the Liver*, Sydenham translation 2: 432, 1861.

3. St. Bartholomews Hosp. Rep. 7: 144.

4. Eppinger: *Prag. med. Wchnschr.* 1: 725, 1876.

5. Churton, T.: *Tr. Path. Soc. London* 50: 145, 1899.

6. Chiari: *Beitr. f. Anat. u. Physiol.* 26: 1, 1899.

7. Hess, A. F.: *Am. J. M. Sc.* 130: 986, 1905.

were both involved. There was no evidence of syphilis, nor was there any evidence of the process being secondary to perihepatitis.

Umbreit⁸ reports a case in which he found no primary phlebitis but a chronic thrombotic process in the radicles of the large hepatic veins, and these thrombi gradually extended to the large branches of the hepatic veins. This was a purely intrahepatic disease, and could not be well accounted for by syphilis, as the process was purely thrombotic and not phlebitic.

Sternberg⁹ reports a case in which the patient had a history of illness for six months prior to death. There was stenosis of the cava in its intrahepatic portion, and thrombi of the hepatic veins. The hepatic veins at their ostia, however, were intact. The cava process and the hepatic vein process seemed to be independently developed; it was purely a thrombotic process within the large trunks of the hepatic veins, and Sternberg suggests that the process could have been infectious in origin and may have originated from a preceding influenzal infection.

Issel¹⁰ found thrombi in the large hepatic veins, which gave the same picture as in Umbreit's cases. The process was interpreted as being purely thrombotic, and not a primary phlebitis with secondary formation of thrombi. The openings of the veins and cava were normal.

Rendu and Poulain¹¹ report a case in which the liver weighed 1,200 gm. There was slight thickening in Glisson's capsule. There was no pronounced perihepatitis, however, or synechia at any point. The portal veins and cava were normal. There was nothing visible to account for portal stasis. It was only on histologic examination that organized thrombi were found in the hepatic veins which involved nearly four fifths of the liver. In this case gross examination was not satisfactory, but the histologic examination revealed a disease of the hepatic veins.

Nagayo¹² describes four cases, two with and two without cava obstruction. All the cases were diagnosed clinically as cirrhosis of the liver and cirrhosis with peritonitis.

A few years later, Nishikawa¹³ published a report of ten cases of obstruction of the hepatic veins. Among these ten are the four cases reported by Nagayo in 1910, and two reported by Yamagiwa¹⁴ in 1905.

The first case that Nishikawa reports is of a man, aged 51, who died after four days' residence in the hospital. He complained of pressure and pain in the right upper abdomen, and 6 liters of blood-tinged, straw-colored fluid were removed by paracentesis. The necropsy disclosed complete closure of the abdominal cava directly below the conflux of the liver veins with the cava, marked stenosis of the large hepatic veins, and complete occlusion of the other hepatic veins. There was great enlargement and cirrhosis of the liver from stasis in the left lobe of the liver, and pronounced atrophy of the right lobe, so that it consisted of a fibrous mass and was a mere appendage to the enlarged left lobe. There were also ascites, edema of the trunk and lower extremities, typical stasis of the spleen, diffuse fibrous union between the liver and the right kidney, and obsolete pleurisy of the right side. Only a brief history of the last illness of this man could be procured.

The second patient had an adhesive pericarditis, but the statement is made that no demonstrable relation between the old pericardial lesion and obstruction of the cava and hepatic veins could be detected. This patient had also obstruction of the portal veins as well.

The third patient, aged 31, was examined at necropsy in 1914. During the clinical observation of this patient, it was observed that he had marked dilatation of the abdominal veins, and although on entrance to the hospital he had marked edema of the lower extremities, it had entirely dis-

appeared. After a few weeks' residence in the hospital, the patient vomited a large amount of blood. More hematemesis occurred three days later, and death three days after the last vomiting of blood. In this case the clinical diagnosis of obliteration of the inferior vena cava and hepatic veins was made. At necropsy, complete obliteration of the inferior vena cava was found as it passes through the diaphragm, and there was obstruction of the large hepatic veins at their entrance to the cava, marked stasis, cirrhosis of the liver with hepatic adhesions, and multiple rupture of varicose esophageal veins.

The fourth patient was a man, aged 26, whose illness began when he was 15 years old. At that time he had marked protrusion of the epigastrium, great impairment in the appetite, and was very intolerant of cold. When he was 23 years of age he had gastro-intestinal disturbances, diarrhea and some fever. Following this there developed a pleurisy of the right side, from which he recovered in two months. At that time an enlargement of the spleen was observed. Two years before his death there was marked edema of the legs, which, however, disappeared after a few days. Four years prior to his death he had a syphilitic infection. When this patient entered the clinic, the subcutaneous veins in the anterior abdominal wall were dilated. The thoraco-epigastric veins and median xiphoid veins were varicose. The current was from below upward. Abdominal paracentesis was performed eleven times. The fluid was on some occasions chylous and hemorrhagic, and at other times straw colored and slightly turbid.

The fifth patient, a woman, aged 34, was examined at necropsy in January, 1915. When she was only 10 years old, a diagnosis was made of hepatic disease. Eight years before death, marked dilatation of the subcutaneous veins of the abdomen was observed, and two years before death there was marked swelling of the abdomen, which did not subside and which led to paracentesis. The fluid was yellow and slightly turbid. The liver was then found about three finger breadths below the costal borders and had a rough surface and firm edge. Three months later, paracentesis was again performed, and 2.5 liters were removed. Paracentesis was performed again after three months. A month later, death occurred. In this instance a clinical diagnosis of obstruction of the intrahepatic portion of the cava was made. Necropsy revealed obliteration of all the hepatic veins at their opening into the cava, marked stenosis of the vena cava as it passed through the diaphragm, and stasis cirrhosis of the liver.

The sixth patient was a man, aged 39, who had syphilis when he was 21, and two years later suffered from anorexia, vomiting and pain in the epigastrium. At that time he noticed dilatation of the abdominal veins. Two years before death, he noticed protrusion of the abdomen, and later edema of the lower extremities. Six months before death he entered the hospital. At that time there was no ascites and the liver was not palpable. There was no clinical diagnosis reported in this case. However, the necropsy revealed obliteration of the inferior cava as it emerges through the diaphragm.

The seventh patient, a woman, aged 30, examined at necropsy in July, 1913, had noticed two years before death moderate distention of the epigastrium, and two months before death there was edema of the lower extremities and distention of the whole epigastrium. She was never icteric, but had hematemesis on several occasions. There was also some blood in the stools, and the urine contained some urobilin but no bile pigment. Paracentesis was performed four times. A clear, yellow fluid was procured each time. The Wassermann reaction was negative. A clinical diagnosis of cirrhosis of the liver was made. Necropsy revealed complete obliteration of all liver veins emptying into the cava, marked stenosis of the vena cava below the entrance to the hepatic veins, a high degree of stasis cirrhosis of the liver, adhesions between the lower surface of the liver and the ascending colon, and diffuse adhesive pleurisy of the left side. The liver weighed 1,650 gm.; the whole organ was firm and finely granular. The cut surface showed a typical picture of stasis cirrhosis. The statement is made that there was no evidence of syphilis at the necropsy.

8. Umbreit: Virchows Arch. f. path. Anat. **183**: 102, 1906.

9. Sternberg: Verhandl. d. deutsch. path. Gesellsch. **10**: 131, 1906.

10. Issel, E.: Centralbl. f. d. ges. Physiol. u. Path. d. Stoffwechs. **8**: 331, 1907.

11. Rendu and Poulain: Bull. et mém. Soc. méd. d. hôp. de Paris **18**: 555, 1901.

12. Nagayo, D. M.: Mitt. a. d. med. Fak. d. Univ. Tokyo **9**: 1, 1910-1911.

13. Nishikawa: Mitt. a. d. med. Fak. d. Univ. Tokyo **20**: 151-298, 1915.

14. Yamagiwa: Ztschr. med. Gesellsch. d. Tokyo **20**, 1906.

The eighth patient, a woman, aged 38, examined at necropsy in 1910, a year and a half before death had accidentally discovered a painless tumor in the right hypochondrium the size of a pigeon's egg. The tumor gradually increased in size, and about eight weeks before death she noticed pain in the epigastrium and loss of appetite. She was treated at home for tumor of the stomach. One month before death she entered the hospital. She was a small woman, with dry skin, no edema, and slightly icteric hue of the sclera. The liver was palpable three finger breadths above the umbilicus in the median line. The left lobe was particularly hard; the surface was uniform and granular. There was a tumor in the right lobe of the liver. The spleen was palpable, firm and not painful. The clinical diagnosis was made of carcinoma of the liver. Carcinoma of the stomach was apparently eliminated on account of the presence of hydrochloric acid, pepsin and lab-ferment, and the want of lactic acid in the stomach contents. The necropsy revealed a complete obliteration of the large liver veins at their entrance to the cava. Just below the entrance of the liver veins, the cava was almost completely obstructed by membranous thrombi.

The ninth patient, a woman, aged 32, observed the first symptoms in March, 1908, and she died, Aug. 30, 1909. In March, 1908, she observed edema of the legs, which increased with standing. At that time her appetite was good, but after eating she suffered from a sense of pressure in the epigastrium. At the same time the patient observed a hard tumor in the region of the liver, which was not sensitive. In May, 1909, the patient noticed distention of the abdomen and dilatation of the subcutaneous veins in the anterior abdominal wall. There were occasional remissions of this abdominal swelling, and suddenly, about the beginning of August, 1909, the abdominal distention greatly increased. She was admitted to the hospital only ten days before death. There was general anasarca, and the abdomen was greatly distended with fluid. Nine days before death, 8,750 c.c. of fluid were removed from the abdomen and proved to be a transudate. After paracentesis the liver was palpable about a finger breadth below the costal margin. The edge of the liver was hard. The clinical diagnosis was hepatic cirrhosis. Necropsy revealed obliterating phlebitis of all hepatic veins at their entrance to the cava.

The tenth patient, a man, aged 28, examined at necropsy in October, 1908, had noticed dilatation of the superficial veins of the trunk when 15 years of age. At 24 years of age the dilatation of the epigastric veins was notably increased. The abdomen was much distended, when the patient entered the hospital one month before death. During the month's stay in hospital, four paracenteses were performed, and each time about 6 liters of transudate were removed. The liver and spleen were not palpable. The liver in this case was not enlarged. It was irregular and grossly nodular. There were numerous nodules the size of an egg, which were interpreted as indicating primary carcinoma of the liver. The portal vein was completely filled with gray-red thrombi. All the hepatic veins were completely obstructed by organized thrombi at their entrance to the cava, and the cava was completely obliterated below the entrance of the hepatic veins.

SUMMARY AND CONCLUSIONS

Thirty cases of obstruction of the hepatic veins have been reported in accessible medical literature since the time of Budd in 1857.

Ten cases, or one third of all, are reported in a monograph by Nishikawa from Tokyo University, and they were all observed in the ten years from 1905 to 1915.

In the reports of Nishikawa's cases it is quite apparent that if the intrahepatic cava and ostia of the hepatic veins had not been examined as a routine measure, the ascites from portal stasis could have been explained by some other attending causes to the satisfaction of less critical pathologists. Nearly all his cases were attended with some lesion associated with ascites, namely, syphilis, cirrhosis, carcinoma,

perihepatitis, thrombi of the portal veins or tuberculosis. These are all enumerated as lesions that were present, and yet either thrombophlebitis or primary thromboses of the hepatic veins were the sole causes of ascites in all of Nishikawa's cases.

The other lesions were incidental in some instances, and probably in other cases played a contributing part to production of hepatic vein lesions.

In only two of all reported cases was the diagnosis of obstruction of the hepatic veins made before death. All the other diagnoses were made at necropsy. Several writers suggest that the clinical diagnosis should be made, and others say the lesion is purely a pathologic curiosity which cannot be differentiated from obstructive lesions in the branches or trunk of the portal veins.

The affluent blood flow of the liver consists, 70 per cent. of portal blood, and 30 per cent. of blood from the hepatic artery. The total efferent flow is through the hepatic veins. There is a free anastomosis between the bed of the hepatic artery and the bed of the portal vein. Should obstruction occur in the trunks of the hepatic veins, the pressure within the entire capillary system of the liver will arise not only from pressure in the portal vein but also from the hepatic artery, whose branches anastomose freely with those of the portal vein.

The result of such obstruction will cause great distention of Glisson's capsule.

The convexity of the upper surface of the liver is increased, the edge is rounded, and the resistance of the liver is greatly increased. The bursting tension on Glisson's capsule is very great, on account of the liver's large diameter. Bursting tension is equal to the pressure multiplied by the diameter, so in this case there is ample source for sensitiveness to pressure from an examining hand. The cases seen at necropsy show that auxiliary veins opening into the cava will readily give some relief to the high capillary pressure, and so will the anastomotic veins offer new efferent paths, as occurs in portal obstruction.

Should obstruction of the portal vein occur, there will be a diminution in size of the liver. Enlargement of the liver accompanied by ascites cannot be caused by heightened resistance to blood flow from lesions in the portal veins. If there is obstruction in both hepatic veins and portal veins, then the liver will not be enlarged; but ascites follows from stasis in the portal radicles.

When the hepatic veins are obstructed, the clinical signs are essentially: acute enlargement of the liver; convex upper surface; increased resistance; rounded edge and pain on pressure, and an ascitic transudate which is opalescent and contains numerous red cells with few white cells and does not readily clot on standing. The specific gravity of the transudate ranges between 1.004 and 1.014. These are the positive signs; but the want of any evidence of disease of the hepatic parenchyma is also important. There is neither choluria nor cholemia, and urobilin is not increased in the urine. The two cases discussed which have been under observation for the last year have at no time had an icteric plasma, and a notable feature of the other cases reported was the want of any icterus of the skin or bilirubin in the urine. In fact, every contributor on the subject comments on this absence of icterus of the skin and of bile from the urine. It is doubtful whether such acute and pronounced

enlargements of the liver due to parenchymatous and interstitial disease could occur without constant or at least intermittent icterus of the plasma, even should there be no bile in the urine or visible jaundice of the skin.

If all sources of hepatic enlargement with the exception of venous stasis can be eliminated, the problem remains to determine whether hepatic stasis originates from cardiac insufficiency, obstruction of the inferior cava above the ostia of the hepatic veins, or obstruction of the hepatic veins.

The possibility of a cardiac source must be disposed of by the usual methods employed in estimating the size and functional capacity of the heart.

Involvement of the cava with hepatic vein obstruction reveals an association between these two lesions which requires further elucidation of the mechanism by which the two paths are obstructed. With stenosis of the inferior cava above the hepatic vein there will follow exactly the same symptoms in the liver that occur in stenosis of the hepatic veins, and in addition there will be signs of obstruction of the cava. In four of Nishikawa's ten reported cases there was obstruction of the cava where it pierces the diaphragm. In the tenth case there was stenosis of the cava both above and below the opening of the hepatic veins. In five of his ten cases, the cava was narrowed only below the hepatic veins. In only one case of the Japanese reports were the hepatic veins open, and in that case (the fourth of the report) the lumen of the cava was narrowed to 1 mm. above the entrance of the hepatic veins.

In all ten cases there was stenosis of the cava, and in only one instance were the hepatic veins unobstructed.

In some of the cases reported from other sources the hepatic veins were not examined until after the liver had been removed, and in other reports the account of the cava is not sufficiently clear to inform us whether there was an adequate examination of the cava and its lumen.

About half of the reports prior to the Japanese publication give definite accounts of narrowing of the cava by either old or recent thrombi. There is certainly a definite interdependence between the two lesions.

The relation may be direct extension from inflammation of the cava wall into the walls of the hepatic veins, as described in two of Chiari's cases and in the case reported by Hess; but in other instances there has been no demonstrable phlebitis or even endophlebitis. There was a deposit of ruffled thrombi composed of red and white cells and fibrin. Aschoff¹⁵ gives an interesting discussion on the manner in which agglutinated red cells, leukocytes, bacteria and fibrin may be deposited on the intima of veins in the vicinity of stenosis, or in widening of the vascular lumen and also near the point of confluence of a lesser stream and slower velocity of current with a larger stream and swifter current. All these physical conditions contribute to formation of eddies, which are currents moving contrary to the main current and usually in a circular direction. There may be two eddies moving circularly but in opposite directions, and it is opposite the points of friction between the surfaces of these contrarily moving eddies that the ruffled thrombi are deposited. The intrahepatic por-

tion of the cava is a location very favorable for the production of eddies.

The cava here widens into a considerable bulbus into which open the mouths of the hepatic veins. There is then a wide lumen into which open a number of lesser lumina, and the velocity of the confluent currents is subject to great variations from breathing, coughing and rotation of the liver on a transverse axis, which is located by the posterior border of the liver that is not covered by peritoneum.

Not all the factors that contribute to formation of these thrombi are clear; but it seems that the causes mentioned above may share in the deposit of thrombi in the hepatic veins and in the cava when there is no basis for thrombus formation on account of disease of the venous walls.

This mechanism of thrombus formation seems very reasonable in view of the number of cases reported in which thrombi of the hepatic veins were located at the mouths of the veins or within a centimeter of their openings into the cava. When the intrahepatic cava was opened, the sites of the ostia of the hepatic veins were indicated by so many dimples on the hepatic aspect of the cava. In a few cases the thrombi were located at some distance from the ostia of the veins when the process was purely thrombotic and unaccompanied by evidence of endophlebitis.

Even in those cases, like Chiari's, in which there was severe inflammation of the cava and veins, the sudden precipitation of symptoms and rapidly fatal course may be traceable to the mechanism of eddies in the blood current which produced the fatal thrombi in both the cava and at the ostia of the hepatic veins.

The clinical course of hepatic vein obstruction interpreted from necropsy findings and histories of the patients proves that partial obstruction of all the veins or complete obstruction of some of the large veins, may cause acute hepatic symptoms from which partial recovery will follow.

There may remain a regional stasis cirrhosis which will go on to atrophy of all the liver cells in one lobe so that at necropsy (in one case) the entire right hepatic lobe consisted of nothing more than fibrous tissue surrounding the vascular structures. The liver cells had all succumbed, and the right lobe was only a fibrous adnexa to a comparatively well preserved left lobe. There may be enlargement of auxiliary hepatic veins to compensate for obstruction of the original veins; and when portal stasis follows, anastomoses between the portal vein radicles and tributaries to the cava may suffice to produce a long history with varying ascites and the same variety of changes in size, conformation and consistency of the liver that are seen in chronic alcoholic and syphilitic cirrhosis.

The fact that a clinical diagnosis of hepatic cirrhosis was made in most of the cases will indicate the character of the physical signs that are produced by the chronic course of the disease.

The ages of patients ranged from 18 months to advanced life, and the duration of symptoms from three days to thirteen years.

The number of cases of hepatic vein obstruction thus far reported makes it advisable to examine carefully the intrahepatic cava and hepatic veins at the necropsies of all patients who present signs of hepatic disease with ascites.

The collected reports justify the suspicion that, in the past, obstructive lesions of the hepatic veins have

15. Aschoff: Beitr. z. path. Anat. u. z. allg. Path. 52: 205, 1912.

escaped the pathologist's observations on account of failure to make careful examinations of the intra-hepatic cava and its tributaries.

These reports also emphasize the importance of trying to interpret the clinical histories and physical findings in definite relations to disease of the liver cells, interstitial structures and disturbances of blood flow in the portal and hepatic veins and hepatic artery.

ABSTRACT OF DISCUSSION

SIR HUMPHRY ROLLESTON, London, England: Some time ago I analyzed the reported cases, only about thirty, so that, with the eleven which Dr. Hoover has added, there are still less than fifty cases on record. It is, therefore, a curiosity, and not always of the same nature. There may be an acute thrombosis, which was probably the condition in Dr. Hoover's cases. There may be a very remarkable lesion, viz: cicatricial contractions of the orifices of the veins, and this may occur extremely early in life, as in a case of the late Dr. S. Gee. Possibly it is due to an extension of the process of obliteration of the ductus venosus, comparable to the excessive process described by Bland-Sutton as occurring at the site of the duct of Meckel's diverticulum in connection with the small intestine. In some of the cases, as Dr. Hoover has mentioned, syphilis has been given as a cause. Some cases, but by no means all, are associated with obliteration or narrowing of the inferior vena cava in the immediate neighborhood; this may be, as Turnbull and Theodore Thompson suggest, a result of thrombophlebitis, or it may be due to trauma, such as may follow jumping from a considerable height, with the result that a certain amount of tearing occurs either in or underneath the endothelium, where the liver is attached to the inferior vena cava by the hepatic veins, and that from the reparative process, cicatricial contraction follows. I was under the impression that the condition had never been diagnosed correctly. It is true that I have diagnosed it myself, but, as compared with Dr. Hoover, I was doubly unfortunate. In the first place, the patient died; and in the second place, there was not any stenosis of the hepatic veins. Another curious point is the association of well marked stenosis, obviously of long standing, of the orifice of the hepatic veins, with an illness which has only lasted a short time—a few weeks. It looks, indeed, as if the slow current through the hepatic veins was sufficient until, perhaps, as a result of some terminal thrombosis, the orifices were almost or completely obstructed, when complete insufficiency of the liver took place, with an acute onset of symptoms.

DR. FRANK B. WYNN, Indianapolis: About four years ago I saw a case of phlebitis involving the lower limb on the right side, first, then passed to the left side. Under rest, the patient slowly recovered, except for slight edema of the leg incident to the venous obstruction following the thrombophlebitis. Four months later he developed a phlebitis of the veins in the side of the chest, which under rest gradually improved. But, again, after about two months, he returned with what he thought was an acute indigestion. One night he had an attack of excruciating pain, requiring a hypodermic. The pain was referred to the region of the gallbladder. It was so excruciating that he broke out with a clammy sweat. A surgeon called in consultation considered it a gallbladder lesion. In a few hours swelling had occurred in the hepatic and epigastric areas. Six hours later the man was seized with vomiting of dark blood, which continued until he died, four or five hours afterward. The necropsy revealed some of the things which have been described by Dr. Hoover, and some additional ones; namely, that he had had one after another, attacks of phlebitis, first in the legs, and then in the different veins, with the last attack in the cavae and hepatic veins. But the dominant feature, pathologically speaking, was the extensive thrombophlebitis of the portal vein. His intestine was entirely filled with dark blood, and his stomach was also full of

blood. The liver was greatly swollen, and the hepatic veins were distended.

DR. CHARLES F. HOOVER, Cleveland: Dr. Wynn's case probably involved tributaries to the vena cava as well as tributaries to the portal vein. It is very surprising to find that patients with complete obstruction of the cava below the openings of the hepatic veins rarely show severe evidences of stasis, and in many instances there is no edema and no dilatation of visible veins to indicate the obstruction. In fact, with few exceptions, the obstruction of the cava is only suspected, and the evidence of symptoms having existed at any time is elicited only on carefully questioning the patient. The histories of these patients have extended all the way from a few days to thirteen years. In many instances a partial restoration of the lumen of the hepatic veins and the enlargement of accessory hepatic veins have sufficed to allay symptoms for as long as four or five years. The two patients I have had are still living; therefore, the pathologic proof of the lesion is wanting. Had I not seen the first patient in his acute attack, I am sure the case would have been passed without question as one of hepatic cirrhosis.

A STUDY OF THE BILE PIGMENTS IN PERNICIOUS ANEMIA*

J. P. SCHNEIDER, M.D.

MINNEAPOLIS

In 1916 I described¹ a spectroscopic method for measuring the bile pigments, urobilin and urobilinogen, secured with the ordinary Einhorn duodenal tube in the fasting patient. I asserted for the method simplicity, reliability and reasonable accuracy. After five years of experience, embracing several hundred determinations, I can report no serious defects in the method, nor have I seen in the literature any valid criticisms. Krumbhaar² points out apparent wide fluctuations in the urobilin content of bile found by Wilbur and Addis. That wide variations are not found can be readily demonstrated by securing duodenal contents in healthy student material. This is shown in Table 1. Variations such as obtain in all the gastro-intestinal secretions is to be expected, and for clinical purposes these do not vitiate the test. Moreover, the stool method is subject to precisely the same variation plus the added errors of variable resorption by the intestine, to say nothing of the disappearance of a fraction of these very unstable pigments through the action of an inconstant intestinal flora. Of prime significance is the detection of urobilinogen in the duodenal contents, for this pigment is never present in health. Krumbhaar's final objection that the method is more liable to errors in the collection of material than the stool method is certainly true in the hands of the inexperienced, but here again several removals may be made on the same patient for control, in less time and with far less labor than is consumed by a forty-eight hour stool determination.

Lyon³ apparently has neglected to establish the values of bilirubin and urobilin as they obtain in the fasting healthy individual, for he says: "When bile is

* From the Department of Medicine, University of Minnesota Medical School.

¹ Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Schneider, J. P.: The Splenic Pathology of Pernicious Anemia and Allied Conditions, a Duodenal Method of Estimating Hemolysis, *Arch. Int. Med.* **17**: 32 (Jan.) 1916.

2. Krumbhaar, in Pearce, R. M.; Krumbhaar, E. B., and Frazier, C. H.: *The Spleen and Anemia*, Philadelphia, J. B. Lippincott Company, 1918.

3. Lyon, B. B. V.: *Diagnosis and Treatment of Diseases of the Gallbladder and Biliary Ducts*, J. A. M. A. **73**: 980-982 (Sept. 27) 1911.

found in the fasting duodenum in sufficient quantities to be grossly visible we believe that there is either a disturbed physiologic condition or a pathologic lesion of group organs physiologically related to this intestinal zone." A little experience with healthy student material would have obviated this totally erroneous assumption. Hansmann and Howard⁴ used the duodenal method in five cases of pernicious anemia. "Three showed the abnormal presence of urobilinogen, which amounted to 6,800, 2,400 and 1,520 dilutions, respectively; the other two cases which were negative were undoubted cases of pernicious anemia, and there was a well defined increase of the urobilinogen in the stools. We have therefore placed less confidence in the duodenal determination than in that of the urine and stools, contrary to our expectation entertained after reading Schneider's and Giffin's articles. It is, of course, possible that more experience in the method might overcome our present prejudice." Since these workers give no evidence of having first at least reasonably perfected their technic of securing duodenal contents, and at the same time state that in the two cases in which they missed the pathologic increase

dilution at a dissimilar rate; therefore the number of dilutions may not be added. With this explanation it is to be taken that the total pigment values of urobilin and urobilinogen are so grouped merely for comparative purposes. The quantitative estimation of bilirubin by the Huppert method leaves so much to be desired that the values are indicated but roughly. In the securing of the duodenal sample it is not uncommon, if the patient retches a good deal, to have bile mixed with gastric secretion issue from the tube when the bulb is still in the stomach. When there is an absence of free hydrochloric acid the contents may be alkaline to litmus, and the inexperienced worker will take this diluted material for genuine duodenal secretion and naturally find lower readings. To obviate this error it is necessary, if the patient has been nauseated by the introduction of the tube, to give an added allowance of time for this regurgitated material to be siphoned off and for the bucket to pass over into the duodenum, when by comparison a much stronger alkaline reacting secretion will be found, and a gentle tug at the tube by the operator will be resisted by the

TABLE 1.—BILE PIGMENT STUDIES IN HEALTHY STUDENTS: DIET, DRUGS, ETC.

No.	Name	Date	Diet, Drugs, etc.	Amount, C.c.	Color	Bili- rubin	Uro- bilin	Urobi- linogen	Total	Comment
1	R. S.	11/22/19	Mixed diet.....	30	Light	++	600	0	600	
2	R. S.	3/13/20	60 gr. quinin sulphate, 48 hrs.	40	Dark	+++	1,600	600	2,200	Urine, both pigments
3	D. D.	11/22/19	Mixed diet.....	30	Light	++	400	0	400	
4	D. D.	12/16/19	60 gr. quinin sulphate, 48 hrs.	35	Dark	+++	1,400	600	2,000	Urine not tested
5	D. D.	1/24/20	Carbohydrate diet, 3 days.....	25	Light	++	600	0	600	
6	D. D.	2/28/20	Milk diet, 4 days.....	25	Light	++	600	0	600	
7	D. D.	3/13/20	60 gr. quinin sulphate, 72 hrs.	50	Dark	+++	1,000	200	1,200	Urine, both pigments
8	V. G.	1/ 6/20	Mixed diet.....	30	Light	++	800	0	800	
9	V. G.	1/10/20	Milk diet, 4 days.....	25	Light	++	600	0	600	
10	A.	1/21/20	Mixed diet.....	35	Light	++	600	0	600	
11	A.	1/23/20	75 gr. quinin sulphate, 48 hrs.	35	Dark	+++	1,600	800	2,400	Urine, not tested
12	A.	1/30/20	Carbohydrate diet, 6 days.....	35	Light	++	600	0	600	
13	R. K.	1/21/20	Mixed diet.....	30	Medium	+++	800	500	1,300	Lacunar tonsillitis
14	R. K.	1/25/20	Carbohydrate diet, 4 days.....	30	Light	++	400	0	400	Infection past 4 days
15	R. K.	2/27/20	75 gr. quinin sulphate, 48 hrs.	50	Dark	+++	2,400	1,600	4,000	
16	R. K.	3/11/20	Milk diet, 3 days.....	30	Dark	+++	2,200	1,600	3,800	Tinnitus still present
17	R. K.	3/15/20	Mixed diet (control).....	30	Light	++	600	0	600	No symptoms for 3 days
18	A. S.	3/ 3/20	Mixed diet.....	30	Light	++	500	0	500	
19	A. S.	3/ 5/20	Quinin sulphate, 75 gr., 48 hrs.	60	Dark	+++	2,800	1,200	4,000	
20	A. S.	3/12/20	Tinct. opii, 20 minims, 3 days.....	30	Light	++	800	0	800	One bowel movement 3 days
21	A. S.	3/15/20	Quinin sulphate, 60 gr., 48 hrs.	45	Dark	+++	1,600	300	1,800	Urine, urobilin
22	D.	3/29/20	Mixed diet.....	20	Light	++	800	0	800	
23	D.	3/31/20	Quinin sulphate, 75 gr., 48 hrs.	40	Dark	+++	2,400	0	2,400	Urine, urobilin

of pigments in the supposed duodenal contents they found abnormal urobilinogen stool content, it is safe to assume that they failed to enter the duodenum. Among the workers who have used the method extensively there stand out Giffin, Sanford and Szlapka.⁵ They report a total of 119 tests in eighty-nine cases, sixty-one of which were patients afflicted with pernicious anemia. They thus report their experience:

The values obtained by the author's method have been so definitely in accord with the clinical manifestations that there is little doubt of the existence of a relationship which it is to be hoped may be made clearer by further study. These values are also in accord with the results obtained from estimations on the stool. . . . In pernicious anemia the amounts of urobilin and urobilinogen in the duodenal contents were above normal in 84 per cent. of the cases. The amount of urobilinogen* was constantly increased when the anemia was severe.

It is necessary to explain that the total of urobilin and urobilinogen as estimated by the spectroscopic technic is not intended to be chemically correct. The absorption bands of these two pigments disappear on

bucket if it be beyond the sphincter. When free acid is present in the stomach this error is not likely to happen. However, all of the refinements in the technic of securing the material, which I originally described, should be painstakingly followed.

In my experience the most difficult cases have been those in which the spleens were very large. In a number of these it was impossible to get the bucket into the duodenum. In one I succeeded by allowing the tube to remain in situ for twenty-four hours.

In order to reestablish the truth of my contention that urobilin does not occur in the duodenal secretion as obtained by the Einhorn tube in the normal fasting adult in amounts exceeding 1,000 units, that urobilinogen is never present in health, and that diet has no immediate influence on the values of either, I had a series of twenty-three removals made on volunteer students, the results of which appear in Table 1. Incidentally, it occurred to me, acting on a suggestion derived from the work of Barratt and Yorke,⁶ to investigate in a small way the effect on these pigments of quinin sulphate. Relative to the first contention, it is obvious that, regardless of diet, the lowest value of urobilin found was 400 units, the highest 800, that

4. Hansmann, G. H., and Howard, C. P.: Urobilin and Urobilinogen of Stool and Urine in Pernicious Anemia, J. A. M. A. 73:1262-1264 (Oct. 25) 1919.
5. Giffin, Z. G.; Sanford, A. H., and Szlapka, T. L.: The Estimation of Urobilin and Urobilinogen in the Duodenal Contents, Am. J. M. Sc. 155: 562-563 (April) 1918.

6. Barratt, J. W., and Yorke, W.: The Relation of Bile Pigment to Hemoglobin, Ann. Trop. Med. and Parasitol. 8: 509-536 (Dec.) 1914.

urobilinogen occurred only once, and that in a student, the third day of a lacunar tonsillitis. In this, as in other bacterial invasions, such as scarlet fever, there is every reason to suspect acute parenchymatous hepatitis. It is to be particularly noted that the liver disturbance affects urobilinogen and not urobilin, the value of which is normal. Severe constipation induced by tincture of opium did not affect the value of either pigment.

still high thirteen days later. Four days later a control test gave normal values. While urobilinogen was always found, urobilin values were particularly high, suggesting the relative values found in hemolytic states. It is not improbable that quinin has hemolytic properties, and those who contend that the hemoglobinuria occurring in certain malarialized districts is due to the ingestion of quinin may be shown eventually to be correct in their belief. Work is now in progress

TABLE 2.—BILE PIGMENT STUDIES IN PATIENTS ILL WITH PERNICIOUS ANEMIA, 1915-1916

No.	Name	Age	Months Ill	Blood			White Blood Cells	Blood Pigments				H-H	Cord Extent	Total Ill	Status Quo
				Red Blood Cells	Hemo-globin	Index		Bili-rubin	Uro-bilin	Urobi-linogen	Total				
1	J. A.	48	12	930	25	1.3	3,800	+++	3,000	3 000	6,000	1.1	Mod., late Prom., early	42	Deceased
2	S. H.	42	20	1,500	30	1.0	2,200	+++	2,000	1,800	3,800	0.9		45	Deceased
3	J. H.	38	14	1,100	27	1.2	2,400	+++	4,000	2,800	6 800	1.3		48	Deceased
4	Mr. H.	52	18	1,200	26	1.2	3,800	+++	2,000	1,200	3,200	0.7	Prom.	24	Deceased
5	Mr. W.	36	20	1,300	30	1.1	2,700	+++	2,300	2,500	4,800	1.0	Slight	36	Deceased
6	J. D.	33	15	2,800	70	1.3	4,200	+++	1,400	1,600	3 000	0.9	Severe	48	Deceased
7	Mr. S.	50	13	2,000	37	0.9	3 800	+++	1,800	2,000	3,800	0.9	Moderate	36	Deceased
8	Mr. B.	29	6	1,700	30	0.9	2,200	+++	2,200	3,200	5,400	1.1	Absent	18	Deceased
9	Mrs. B. B.	28	14	2,500	45	0.9	4,200	+++	1,400	1,200	2,600	0.85	Slight	30	Deceased 1 year after splenectomy
10	C. S.	33	13	1,300	36	1.4	4,900	+++	1,400	1,000	2,400	0.61	Slight	32	Deceased ¾ year after splenectomy
11	Mrs. T.	47	10	1,600	36	1.1	5,200	+++	3,200	600	2,800	0.7	Early, severe	36	Deceased
12	W. H.	53	18	1,960	38	0.9	3,260	+++	2,000	600	2,600	0.7		None	42	Deceased
13	Miss L.	18	30	2,940	50	0.8	5,900	++++	5,000	1,000	6,000	1.4	None	..	Living, well, splenecto-mized
14	Mrs. S.	42	12	4,000	78	0.9	3,800	+++	1,000	1,000	2,000	1.0	Moderate	18	Deceased after splenec-tomy
15	Mr. P.	58	20	2,000	48	1.2	3 000	+++	2,400	800	3,200	0.87	Moderate	36	Deceased
16	W. M.	50	16	1,500	31	1.0	5,100	+++	1,600	600	2,200	0.61	Severe	20	Deceased
17	Mr. M.	39	6	2,500	48	0.9	4,700	+++	1,800	800	2 600	0.85	Slight	14	Deceased
18	Mr. H.	48	13	1,300	20	0.8	4 000	+++	2,800	800	3,600	0.81	Slight	21	Deceased
19	Mrs. S.	40	18	1,500	25	0.8	5,200	+++	3,600	2,000	5,600	1.1	Slight	42	Deceased
20	Mrs. F.	49	6	2,400	43	0.9	3,800	+++	1,400	1,600	3 000	0.9	Severe	24	Deceased
21	J. B.	40	9	1,750	35	1.0	4,200	+++	1,600	800	2 400	0.7	Slight	18	Deceased
22	Dr. M.	42	20	1,500	32	1.0	4 000	+++	1,400	600	2 000	0.6	Slight	22	Deceased
23	M. H.	40	11	1,270	20	0.8	3,800	+++	2,400	800	3 200	0.7	Prom.	28	Deceased
24	Mrs. H.	52	14	1,970	30	0.8	4,200	+++	1,200	400	1 600	0.6	Moderate	18	Deceased
25	M. S.	33	8	1,800	36	1.0	5,200	+++	1,200	2 000	3 200	0.8	Severe	20	Deceased
26	Mrs. R.	36	10	1,270	30	1.2	3 800	+++	2 400	800	3,200	0.7	None	24	Deceased
27	Mr. O.	49	18	1,970	38	1.0	4,800	+++	1,200	400	1 600	0.6	Moderate	24	Deceased
28	Mrs. T.	30	12	2,000	39	1.0	3,900	+++	2 000	1 800	3 800	0.9	Moderate	..	Not traced
29	Mr. S.	56	24	1,750	28	0.8	3,200	+++	1,200	2,000	3,200	0.8	Very slight	..	Deceased

TABLE 3.—BILE PIGMENT STUDIES IN PATIENTS ILL WITH PERNICIOUS ANEMIA, 1917-1918

No.	Name	Age	Months Ill	Blood			White Blood Cells	Blood Pigments				H-H	Cord Extent	Total Ill	Status Quo
				Red Blood Cells	Hemo-globin	Index		Bili-rubin	Uro-bilin	Urobi-linogen	Total				
30	O. W.	57	12	8 600	70	1.0	6,200	+++	2,200	2,400	4,600	1.5	Only symptom	28	Living; atoxic
31	Mrs. H.	39	11	2 000	40	1.0	4,800	+++	1,800	2,000	3,800	0.9	Moderate	28	Deceased
32	Mrs. O.	45	6	3,300	45	0.7	6,800	+++	1,600	2,200	3 800	0.9	None	14	Deceased
33	Prof. G.	56	17	1,760	39	0.9	3,600	+++	1,200	1,000	2,200	0.65	Very slight	34	Living; weak
34	Mrs. S.	47	4	1,856	50	1.3	3,200	++	800	0	800	0.4	Early, severe	26	Living; undoubted per-nicious anemia
35	Mr. S.	64	7	2,032	32	0.8	4 000	+++	1,200	1 400	2,600	0.8	None	31	Living; fair health
36	Mr. A.	41	6	1,000	22	1.1	2 800	+++	2,000	3 000	5 000	1.0	None	12	Deceased; 5 T
37	Mr. A.	61	12	1,780	20	1.3	3 850	+++	1 800	2,200	3,000	0.8	None	29	Living; 3 T
38	O. W.	39	9	2,000	38	0.9	6,200	+++	2 000	3 200	5,200	1.1	None	31	Living; fair
39	Mrs. C.	45	12	1,600	36	1.1	3 600	+++	2,000	3 000	5,000	1.1	Moderate	36	Deceased; 6 T
40	Mrs. N.	33	8	2,160	48	1.1	6 100	+++	1,600	1 600	3,200	0.9	None	36	Living; fair
41	Mrs. H.	54	22	1,200	30	1.2	2,800	+++	1,800	1 800	3 600	0.8	Slight	23	Deceased; 2 T
42	Mrs. S.	49	36	2,000	42	1.0	3 400	+++	1,200	1 400	2 600	0.7	Early, severe	42	Deceased
43	Mrs. C.	46	18	2,500	58	1.1	5,800	+++	1,200	1,600	2,800	0.9	Marked, early	38	Living; atoxic
44	Mrs. E.	54	8	2,400	50	1.0	6,200	+++	2 000	2,200	4,400	1.1	Moderate	39	Living; remission
45	Brnd.	32	6	3,500	65	0.9	6 400	+++	1,200	0	1,200	0.8	Early, marked	12	Deceased; atoxic
46	Mr. C.	62	36	1,808	37	1.0	5,760	+++	2,600	1,800	4 400	1.1	None	54	Living; remission
47	Mrs. S.	40	12	1,760	38	1.1	3 800	+++	1,800	6	1,800	0.6	Slight, late	28	Deceased; 6 T
48	Mrs. S.	26	2	2,600	44	0.8	3 000	+++	1,200	1 000	2,200	0.8	None	6	Deceased; 1 remission
49	Mrs. S.	46	5	2,400	55	1.0	5 400	+++	1,000	1,400	2,400	0.8	None	24	Deceased
50	Edwards.	56	3	2,560	60	1.2	5 400	+++	1,200	1,000	2,200	0.8	Early only	24	Has syphilis also
51	Mrs. P.	28	7	1,040	28	1.4	2 800	+++	2,200	2 000	4,400	0.9	Early, marked	20	Remission
52	Mrs. O.	42	60	2,100	38	0.9	2 800	+++	2 400	1,800	4,200	1.0	Slight, late	78	Hy-uria
53	Mrs. E.	66	48	1,200	28	1.1	3,800	+++	1,800	2,000	3,800	0.8	Early, severe	72	Deceased
54	Roe.	46	12	2,400	38	0.8	4,800	++	800	0	800	0.5	Early	..	Deceased; mental
55	Mrs. A.	56	36	1,600	32	1.0	5,600	+++	1,200	1,400	2,600	0.7	None	42	Deceased

Relative to the effect on the values of these two pigments particularly, of from 60 to 75 grains of quinin sulphate administered by mouth in the preceding forty-eight hours, the table tells a rather striking story. In each of the eight instances a pathologic pigment level was found. In two instances the same student was used a second time with a similar result. In one instance in which the student complained of a persistence of ringing in his ears, the pigments were

with the end in view of determining whether quinin acts on the red cell directly or on the liver or spleen parenchyma.

From October, 1915, to March, 1920, a total of 104 patients ill with pernicious anemia was seen and rather completely studied. Of these, seventy-eight have sufficiently complete records to allow of tabulating (Tables 2, 3 and 4) for the years 1915-1916, 1917-1918 and 1919-1920, respectively. In these seventy-

eight cases there were repeated bile examinations in a considerable number, so that the total number of duodenal removals is 120. Only one determination is given in the tables for each patient, and when there were more, the duodenal test nearest to the blood examination in point of time was selected. (Frequently both were done the same day.)

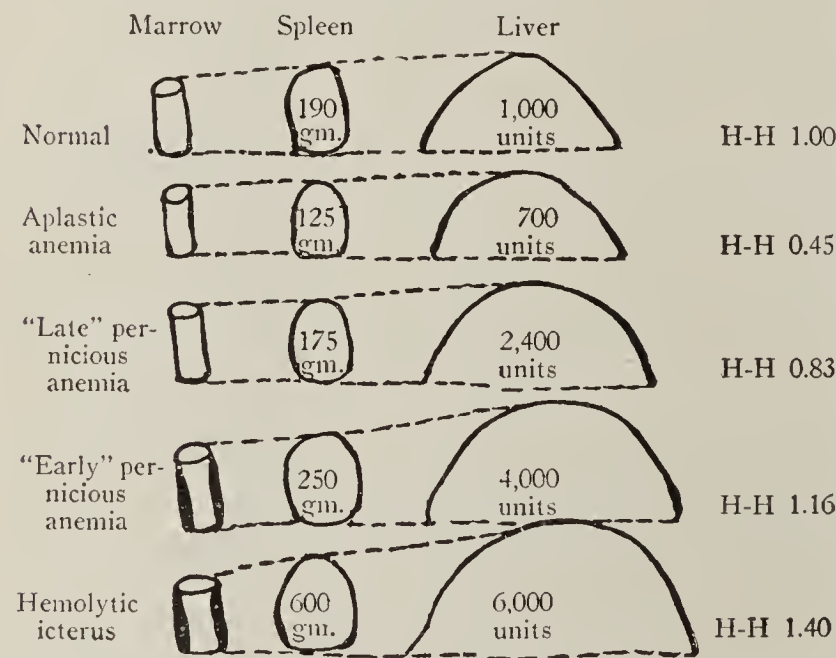
normal pigment values, two of which were repeated with the same result. One is dead, two are living. Two are certainly cases of pernicious anemia; in the other there are still a few elements of doubt. An indication of the fatal character of this disease is the fact that of seventy-five patients traced, fifty-two are dead. Of the 1915-1916 series only one, and that

TABLE 4.—BILE PIGMENT STUDIES IN PATIENTS ILL WITH PERNICIOUS ANEMIA, 1919-1920

No.	Name	Age	Months Ill	Blood			White Blood Cells	Blood Pigments				H-H	Cord Extent	Total Ill	Status Quo
				Red Blood Cells	Hemo-globin	Index		Bili-rubin	Uro-bilin	Urobi-linogen	Total				
56	Cable.....	43	12	1,800	32	0.9	3,900	+++	1,800	2,000	3,800	0.9	Mod., late	24	Deceased; 6 T
57	Mrs. S.....	45	24	2,640	38	0.7	4,000	+++	1,200	1,200	2,400	0.8	Slight	36	Splenectomy; deceased
58	Mrs. M.....	48	24	1,000	24	1.2	3,200	+++	1,200	1,400	2,600	0.6	Moderate	30	Deceased
59	Mr. O.....	52	12	1,000	26	1.2	4,200	+++	1,200	1,600	2,800	0.6	Slight	18	Deceased
60	Mrs. S.....	58	24	1,200	28	1.1	5,200	+++	1 800	600	2,400	0.6	Early, severe	27	Deceased
61	Dr. W.....	52	6	1,250	30	1.2	3,200	+++	3 000	2,000	5,000	1.0	Slight	10	Fulminating; deceased
62	Dr. H.....	33	18	2,000	42	1.0	5,100	+++	1 800	2,000	3,800	0.9	Moderate	30	Deceased
63	Mr. P.....	39	12	1,800	36	1.0	4,800	+++	2,200	3,200	5,400	1.2	Slight	24	Living; remission
64	Mrs. H.....	33	9	2,400	50	1.0	5,200	+++	1,800	1,800	3,600	1.0	None	12	Living
65	Mr. O.....	54	18	3,000	62	1.0	6,200	+++	2 800	2,000	4,800	1.3	Slight	30	Living; remission
66	Mrs. H.....	36	24	2,400	50	1.0	3,200	+++	2,000	2,000	4,000	1.0	None	..	Untraced
67	Mrs. G.....	63	36	2,500	67	1.3	4,200	+++	1 800	1,600	3,400	0.9	Slight	48	Living
68	Mrs. W.....	48	9	1,200	28	1.0	5,800	+++	1,200	1,000	2,200	0.5	Moderate	18	Deceased
69	Mr. A.....	33	12	1,000	22	1.0	4,200	++	1 800	400	2,200	0.5	None	16	Deceased
70	Miss B.....	38	8	2,500	55	1.1	3,900	+++	1 000	1,000	2,000	0.7	Severe	18	Deceased
71	Mr. O.....	56	24	3,000	65	1.1	5,000	+++	2 000	800	2,800	0.9	Moderate	36	Living
72	Mrs. S.....	56	24	2,500	58	1.1	3,100	+++	2,200	1,800	4,000	1.0	None	30	Living
73	Mrs. A.....	34	12	3,000	65	1.1	4,500	+++	2,400	2,200	4,600	1.2	Moderate	36	Living
74	Mr. M.....	54	24	2,800	50	1.0	5,600	+++	1 800	1,600	3,400	1.0	Early, mod.	36	Deceased
75	M. M.....	56	36	1,200	26	1.0	4,000	+++	2 500	800	3,000	7.0	Moderate	..	Untraced
76	O. W.....	49	9	4,200	78	0.9	6,800	+++	2,400	2,200	4,600	1.4	Only symptom	..	Living; ataxic; looking well
77	Miss E.....	35	12	2,000	45	1.1	3,800	+++	800	0	800	0.4	Typical	..	Living; undoubted per-nicious anemia
78	Mr. C.....	50	12	2,166	50	1.2	4,000	+++	2,400	1,400	3,600	0.9	Early, mod.	..	Living; remission

Of the seventy-eight patients, forty-one were men and thirty-seven were women. The average age was 45 years. The oldest patient was 66, the youngest, 18. The average number of months the patient had been ill when first seen was fifteen. The average total length of illness of those who died was 2.6 years, the shortest being six months and the longest six and one-half years. The average red blood cell count was

TABLE 5.—RELATION OF MARROW TO SPLEEN-LIVER



2,000,000 per cubic millimeter. The average hemoglobin (Sahli, corrected, and Dare) was 40 per cent. The average hemoglobin index was 1 and the average white blood cell count 4,400. The degree of cord involvement was: twenty, severe; twenty, moderate; twenty, slight; eighteen, none. The average total bile pigments (urobilin and urobilinogen) was 3,330 units, the highest total being 6,800, and the lowest 800. Three patients out of the total (Cases 34, 54 and 77) gave

a splenectomized patient, is living. Of the 1917-1918 series, fourteen are dead and twelve living. Of the 1919-1920 series, eleven are dead and ten living. In 1917⁷ I proposed a simple formula by means of which it might be possible to express the relation of blood regeneration to blood destruction in a given instance. For short this hematopoietic-hemolytic relationship is designated as the H-H index. Normally this is 1. When hemolysis is very active it will tend to be plus, and when hemopoiesis fails it will fall below 1. If our concept that early in pernicious anemia the hemolytic factor is uppermost and that later in the life history of the disease the marrow fails is true, then the H-H index should be higher in the early cases. In our series the H-H index of all who gave a history of twelve months or less of illness is 1.16 (disregarding Cases 34, 54 and 77). The H-H index of all who were ill more than twelve months is 0.83. If Cases 34, 54 and 77 are included, those of twelve months or less standing yield an H-H index average of 0.86. The early cases have a higher average red blood cell count, the highest being 4,200,000. The average H-H index in all having a red cell count of 2,000,000 or over—namely, thirty-eight cases, including Cases 54 and 77, is 0.95. The average H-H index of the forty cases with a count under 2,000,000 is 0.78. If we are correct in our concept relative to the meaning of a low H-H index, then the degree of leukopenia should run more or less parallel with it. In twenty-four of the seventy-eight cases the total white blood cell count was 5,000 or over, and here the average H-H index is 0.95. In fifty-four of the seventy-eight cases the leukocyte count was less than 5,000, and in these the average H-H index is 0.83. To my mind this fact is highly confirmatory of a previous statement in which I indicated that a low H-H index

7. Schneider, J. P.: Further Quantitative Study of the Duodenal Blood-Derived Pigments, Arch. Int. Med. 19: 156-162 (Jan.) 1917.

taken with a leukopenia, however short the illness in point of time, indicated a bad prognosis. Table 5 schematically represents the narrow-spleen-liver relationship, and the resulting H-H index in the normal, aplastic anemia, late pernicious, early pernicious, and hemolytic icterus.

In a recent editorial⁸ in THE JOURNAL commenting on the work of Rous and Oliver occur these sentences: "The diagnosis of diseases like pernicious anemia and hemochromatosis involving a hemosiderosis has sometimes been extremely difficult, unless a conspicuous siderosis of the skin has developed. Necropsy usually reveals far more siderosis in the internal organs, but it cannot be detected during life." Table 6⁹ summarizes the pigment findings at necropsy in seventeen patients dying of pernicious anemia. Six of these are represented in our series, and presented high duodenal values. In Case 76, O. W., there was no clinical evidence of pigment accumulation, nor was there hematologic evidence for pernicious anemia.

constant high values for the bile pigments. I could not help but become converted to a belief in the value of his methods. They deserve much greater attention than they have received. Dr. Schneider's quinin experiments are of interest. Quinin is absorbed from the intestine, is held in the red blood cells, and most of it is destroyed in the body. Some of it is excreted in very small quantities in the urine, the milk and other secretions. It is interesting to note that blackwater fever has followed the use of quinin in pernicious anemia. Of course, in malaria blackwater fever occurs with and without the use of quinin. With the storage of quinin in the blood cells and the hemorrhagic influence on the part of the plasmodium, it is more than probable that some causal relationship exists between quinin and blackwater fever. The greatest need in the study of diseases of the blood and of the liver at present is a more exact chemical knowledge of both the bile and the blood pigments.

DR. G. J. HIRSCHBOECK, Duluth, Minn.: We have used this test rather frequently since Dr. Schneider first initiated its use, and we were rather forcibly impressed at the beginning with its value in the differential diagnosis of obscure

TABLE 6.—PIGMENT STUDIES IN SEVENTEEN PERNICIOUS ANEMIA NECROPSIES

No.	Sex*	Age	Nourish- ment	Dura- tion	Hemo- globin	Red Blood Cells	White Blood Cells	Aniso- cytes	Poikilo- cytes	Nucle- ated Reds	Weight, Gm.		Pigmentation			Bone Marrow	
											Liver	Spleen	Liver	Spleen	Kidney		
1.	A-19-46	♀	42	Poor	3 yr.	..	1,150,000 840,000	1,200 925	+++	+	+	1,725 430		+	+++	+	Red
2.	A-19-218	♀	50	Poor	2 yr.	..	1,984,000	4,600	+++	++	.....	1,100	125	+	+++	+	
3.	A-18-31	♂	53	Fair	1 yr.	13	780,000 540,000	4,800 4,400	+++	+++	+	2,060 195		+++	++	+	Red Red
4.	A-18-35	♂	62	Poor	6 yr.	50	2,235,000 800,000	8,600 6,750	.....	.....	.....	1,260	315	+++	+	+	Red
5.	A-18-39	♂	39	Poor	1 yr.	45	1,164,000 1,046,000	5,800 7,100	+++	+++	++	1,700	160	+++	+++	—	Red
6.	A-18-49	♂	44	Poor	1 yr.	28	1,400,000	9,600	+++	+++	++	1,760	240	.....	++	+	Red
7.	A-18-70	♀	50	Poor	5 yr.	28	1,900,000 2,400,000	7,600 15,000	+++	+++	+	1,325 Removed 3 years before		+++	+++	++	Red Red
8.	A-18-256	♀	32	Poor	3 yr.	34	1,680,000 600,000	6,500	++	+	+++	1,760	260	+	++	.....	Red
9.	A-15-365	♂	44	Poor	.....	30	1,400,000	3,000	.....	.....	.....	1,460	165	+++	+	+	Red
10.	A-15-358	♀	53	Poor	7 mo.	20	1,000,000	8,000	+++	+++	+++	.....	...	++	+++	++	Red
11.	A-15-149	♀	43	Good	.....	..	1,900,000	3,500	+++	++	.....	1,900	175	+	++	+	Not examined
12.	A-19-173	♀	47	Poor	8 mo.	..	.....	.....	.....	.....	.....	1,900	175	.....	.....	.....	Red
13.	A-17-133	♀	66	Good	?	60	1,800,000	.....	.....	++	+	1,000	55	+++	+	+++	Red
14.	A-17-161	♀	47	Good	5 mo.	25	1,100,000 700,000	3,100 1,400	+++	+++	—	1,400	160	++	+	—	Not examined
15.	A-17-264	♀	47	Poor	2 yr.	30	2,100,000 752,000	6,000 3,600	+++	+++	+	1,460	470	++	+++	++	Not examined
16.	A-16-70	♀	57	Poor	3 yr.	20	1,100,000	3,200	+++	+++	—	1,897	248	+++	++	.....	Red
17.	A-16-303	♂	53	.....	.....	..	.....	.....	.....	.....	.....	1,975	200	+++	++	+	Red

* In this column, ♂ indicates male and ♀, female.

The only suggestive findings were neurologic. The bile study, with values of 4,800, 4,600 and 4,800 units on three separate occasions, was the decisive finding in the case. I would therefore say that siderosis can be detected during life.

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ABSTRACT OF DISCUSSION

DR. LEONARD G. ROWNTREE, Minneapolis: For two or three years prior to going to Minnesota I was interested in the development of functional tests for the liver. We made a large number of determinations of urobilinogen in relation to liver diseases. During the course of this work, Wilbur and Addis reported their results, showing the tremendous variations which they encountered. We never published the results of these experiments because the variations were tremendous. When I came to Minnesota, I was not in a particularly receptive frame of mind for these studies which Dr. Schneider reported. I saw his work. I saw cases of pernicious anemia followed after splenectomy and after transfusion. In some cases fifteen or twenty determinations were made on the same patient, and always I saw these

conditions. In a case of beginning carcinoma of the stomach, in which the findings were not by any means definite, the patient's nutrition was good, but he had ulcerative stomatitis and anemia, without any definite blood picture and negative roentgenologic findings. We made the diagnosis of pernicious anemia. The case was referred to Dr. Schneider, who after making his duodenal estimate said that the case was not one of pernicious anemia. The case was followed subsequently, and blood was found in the stools. Later on, typical symptoms developed, the patient was operated on and eventually died, with characteristic postmortem findings of carcinoma of the stomach. The test is also of extreme value in cases of pernicious anemia in which neurologic symptoms predominate, whether only peripheral paresthesias, or as far advanced as a true combined sclerosis. Oftentimes, in these cases, the number of red cells is large and the blood picture is inconclusive, as well. In these cases the test is of great value in differentiating combined sclerosis due to pernicious anemia from those that are not of such origin. It is also of value in cases of syphilis accompanied by anemia. In cases of syphilis, with secondary anemia, in which we find normal pigment values in the duodenum, we obtain improvement by antisyphilitic treatment. Furthermore, in cases with positive serologic findings, and with the typical clinical picture of pernicious anemia if duodenal estimation is performed, if it is found to be low in duodenal pigment units, the spirocheticides improve the cases to cure; and if the units are found to be excessive, antisyphilitic

8. The Diagnosis and Possible Nature of Hemosiderosis, editorial, A. M. A. 72: 574-575 (Feb. 22) 1919.
9. Courtesy of Dr. E. T. Bell of the Department of Pathology, University of Minnesota Medical School.

measures are of no value. This test is not difficult to perform when done frequently, and after the technical difficulties are overcome. It is far less laborious, the amount of time consumed is far less, and it is far more accurate than the stool examination. I would strongly urge its more common adoption and use, because you will find it of immense clinical value in differential diagnosis.

DR. LEWELLYN SALE, St. Louis: The usefulness of a quantitative test, even though it be a rough quantitative estimate of the bile pigments, is realized and admitted. It is not always possible to make use of the duodenal method, as described by Dr. Schneider. I want to call attention to another method, and at the same time, to ask Dr. Schneider if he has made any experiments with this method, in controlling his own, as to its clinical usefulness. This is a quick clinical laboratory estimation of urobilinogen, a rough quantitative estimation by the use of the so-called Ehrlich's reagent, dimethylamidoparabenzaldehyd. Using that reagent in the urine, we were always able to demonstrate the presence of an increased amount of urobilinogen in the urine in cases of increased blood destruction in pernicious anemia, and in other anemias. At the same time, a worker in the same clinic in which we were using this reagent was trying to determine whether or not it might not be of some prognostic value in cases of pulmonary tuberculosis. He claimed that in the more advanced cases, and those which offered a bad prognosis, because of the high degree of toxicity, there was always, even though it was not demonstrable, a certain degree of parenchymatous hepatitis, which could at least be predicated on the presence of an excessive amount of urobilinogen in the urine.

DR. J. P. SCHNEIDER, Minneapolis: To determine pathologic hemolysis, the duodenal technic is the method of choice, with the quantitation stool examination second, largely because of the time element. Urine pigment studies (urobilin and urobilinogen) are utterly valueless in pernicious anemia. They are of signal value in hemolytic icterus and of some differential value in diseases affecting the entire parenchyma of the liver as against obstructive pathology involving the common duct.

THE REPORTING OF VENEREAL DISEASES BY PHYSICIANS*.

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Every innovation in medicine has been either preceded or followed by an educational campaign among both the public (the laity) and physicians. Medical progress must be made by acquainting the general public with medical facts. Too long have physicians kept their medical knowledge within their own sphere, expecting the laity to gather their medical education in the stern school of disease experience, leaving the public helpless except for minatory lectures in preventive medicine. The public mind is analogous to the child's mind: Not only must both be told to do a thing, but both demand the whys and wherefores of the thing to be done. Sustained preventive medicine will never come to pass until every child, man and woman knows the immense economic and material reasons for prophylactic medicine.

One can readily understand why a great deal of energy must be expended to acquaint the public with some departure from the routine in medicine. The average person is not presumed to know the needs of

medicine at any given time. But it is difficult to appreciate why the same laborious process must be gone through with physicians. Surely it is expected of them to recognize the demands of the various evolutionary periods that go to make ultimately the history of medicine. Yet it is a fact, and any state health officer will verify the statement, that a great deal of the time of the vital statistics bureau of a state health department is taken up in an attempt to get physicians to write legibly and give reasonable causes for death; or, on the other hand, an expert statistician's time is devoted to doing propaganda work to convince physicians that birth records are a necessity in these modern days of statistical accuracy. In returning death reports to physicians for proper revision, and in a multiplicity of other tasks growing out of the carelessness and negligence of physicians who, in making their reports, do not give the subject the ordinary care that a subject of this kind merits, is the energy and money of this important branch of health activity dissipated.

When we transfer our investigations from the vital statistics bureau to the epidemiology department, the sins of omission and commission increase in a ratio directly proportional to what the physician thinks is an invasion of the rights or privileges of either the patients under his care or of himself.

Only a few years ago it became obligatory on the physician to report tuberculosis as a communicable disease. Despite the law, contrary to all medical knowledge, opposed to the conscientious convictions of the medical practitioner himself, nevertheless an educational campaign had to be conducted among physicians to teach them what they already knew: that tuberculosis is a communicable disease; that there is only one way to control it, and that is for the health officials to know where and to what degree it exists.

State and city boards of health need a law enforcement division for physicians, rather than an educational department. The physician *knows*; he simply does not consider the reporting of communicable diseases a part of his professional duties; and until such time when he is punished for law violations the same as any other individual, until such time as he is impressed with license revocations varying in time with the degree of his offense, not until then will reporting of disease reach any degree of accuracy. One or two prosecutions of this kind in a community, with ample publicity, will produce more communicable disease reports in a week than will years of propaganda.

Recently, in the state of Louisiana, there were found in one small community forty cases of typhoid fever, not one of which had ever been reported. Did any of the physicians attending these cases feel that from a legal and moral standpoint they were criminally liable for this epidemic? Did they feel that they were grossly negligent of a duty they owed their community, their state and the nation? Were they prosecuted? And, above all, will they not do precisely the same thing at some future time?

Much of this sounds like scolding. It is not. It is a frank appeal for state health officers to hold in strict accountability every licensed physician to a trust that the state has imposed on him. A man is readily punished for violation of a traffic ordinance because he endangers the life of a few persons. The physician has under his thumb the lives of whole communities, and he should not be permitted to violate this trust and responsibility.

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

Laxness and negligence being true in the reporting of those diseases that have been reportable in the past, it can readily be surmised how much more difficult it is to get reports on diseases recently added to the list of communicable diseases. The problem begins to get more complicated when the physician attempts to shield certain classes of his patients; or, in a more mercenary type of physician that is occasionally encountered, when he attempts to enlarge his clientele by circulating among the laity the information that he does not report certain diseases. I refer to the venereal disease triad. I can think of nothing more contemptible than to compete unfairly on such a basis with a fellow practitioner who reports his venereal disease cases. Equally unfair is the physician who thinks he shields wealthy patients by not reporting their venereal disease when, at the same time, he painstakingly reports those not so fortunately situated.

There can be no question that there are physicians who are conscientious objectors to venereal disease reporting. Nevertheless, in this state (Louisiana) they violate the law every time they do not report. Their recourse is in a court of justice. They have no more right to interpret the law, no more justification for violating it, than they have for ignoring any other law. Yet it is only just that an answer should be made to those objections that superficially appear legitimate; and I will discuss them in the order of their importance.

INVALIDITY OF OBJECTIONS TO THE REPORTING OF VENEREAL DISEASES

It is contended that the reporting of venereal diseases in a patient not only violates the individual right of the person to conceal his malady from his fellow man, but also contravenes the established principle of privileged communications between the physician and his patient. This argument has no merit in point of law or in any ethical code. The courts have invariably ruled to the contrary, in the first instance; and our social structure is based on a philosophy diametrically opposed, in the second. No system of government could long endure if it were based on any other principle than that the right of the individual is always subservient to that of the mass. Any other creed spells rank individualism, and individualism carried to its logical conclusion means nothing more nor less than anarchy. In any system of ethics a right implies a duty. The physician's *right* to practice medicine by virtue of a license issued him by the state, protecting him in the exclusive privilege of healing the sick and shielding the well, implies a *duty* and an allegiance to the creator of that self-same right; and all other ethical ties to individuals or groups of individuals are insignificant when compared to the loyalty and protection demanded by the great social structure whose existence is always threatened, and whose efficiency is always impaired, by bacterial invasion. Every physician is a state officer, a public health officer, commissioned and protected by the state, and in this day and age not only is it his privilege to heal the sick, but it is his absolute duty to shield the well. He who practices today only the healing art, and leaves out of his medical armamentarium preventive medical science, is very poorly equipped. An individual has no rights that conflict with society's interests. In other words, an infected person's rights cease where community protection begins.

Again, we meet the argument that the reporting of venereal disease must inevitably result in blackmail, scandal and various other social calamities that are presumed to make the health officer shudder over the dire effects of his pernicious meddling in communicable diseases. Physicians have tried to be serious in explaining that the reason they did not report was the fear of being shot, prosecuted for libel, charged with malpractice, and what not. Their argument was always to bolster up something that they originally did not intend to do. As a matter of fact, Ohio has obtained the second largest number of venereal reports in the United States, and the cases there are reported by name and street number. Certainly, in most states where the reporting is done by some cipher code, all of these objections must perforce be groundless. But the point of the matter is, that even when the patients are reported by their names, no such catastrophes have taken place. At the risk of repetition and reiteration, may I again call your attention to the fact that the courts of the country have invariably upheld the venereal disease laws; and the responsibility is theirs, and not ours.

We are also admonished by the profession to have a care in enforcing venereal disease reporting in infected married men, lest their wives come into possession of the data, and domestic turmoil and tragedy result. Nowhere has the medical profession shown its lack of keeping up with modern economics and politics so much as by attempting to protect their own sex at the expense of helpless women and children. Why this maudlin sympathy for the venereally infected married man? You who have been struck with horror when your male syphilitic, in exceptional instances, acquired his disease from his wife: What about the hundreds of thousands of venereally diseased women who have conjugally acquired their maladies? What about the children who have innocently gone down in the struggle? Is it because you believe that men have a right to arrogate to themselves sexual privileges that they will not give, or is it because you are a man, and that despite the handwriting on the wall you cannot overcome the prejudices of ages for men to repudiate the very sex that gave them birth. If these reports are to cause domestic discord; if the wife should through this system of reporting find that her husband is venereally diseased; if the fiancée of some venereally diseased man should by the remotest chance discover the true health status of her prospective husband—all of which I deny is at all probable under the reporting system in use—I ask you, not as physicians, not as scientists, not as sociologists, but as plain, reasonable men, were it not better that she have this information before she is infected than to have it thrust on her in the clinic, in the hospital, or on the other side of the river Jordan?

May I suggest to the profession to prospect just a bit. Would it not be well to anticipate woman's coming political power and, medically at least, give her the protection that each one of us expects legally for ourselves? Shall we, who are presumed to represent all that is humane and ideal in science, be pushed or shall we pull?

BENEFITS FROM REPORTING

If, then, there are no valid objections to the reporting of venereal disease, there ought to be positive benefits derived from reporting if the physician is asked for his cooperation. In the first place, statistical

data on venereal disease are urgently necessary. We ought to know our rate of infection. We should be thoroughly acquainted with the geographic distribution of venereal disease so that intensive work can be done in those heavily infected areas. We must have data of an accurate kind if we are to go before legislative bodies and civil communities to ask for funds. Some of the men engaged in this propaganda work have met with a peculiar situation; namely, they cannot get appropriations without statistical data, and they cannot get the data without funds to enforce the obvious duty of the physicians to report. Truly, a vicious circle.

Another important value in reporting is the recording of the patient so that he can be under surveillance in the event that he absconds from treatment. We have in this city returned for treatment in one clinic as many as twenty-seven patients in one day by threatening to placard their houses. We all know that much of the dissemination of the venereal diseases is due to inadequate treatment. With the abatement in their symptoms comes an indifference to ultimate cure, and it is only through a proper follow-up system that these patients can be compelled to remain in the physician's care until they are at least noninfectious.

Here in Louisiana we have on our report card a space for the reporting of the infector's name and address. Some physicians help greatly in acquiring this information. In most instances, I believe, it may be obtained from the patient if the physician will take the trouble to ascertain it. The patient's trauma is invariably mental as well as physical. If for no other reason than having his exalted ego wounded in misplaced confidence in his sexual selection, he will, by judicious questioning, reveal the source of his infection.

Where the state venereal disease laws are at all adequate, such an infector can readily be corralled. In the case of prostitutes, immediate action is imperative. The detention of a syphilitic prostitute militates against community syphilis to a degree few physicians realize. We have sent prostitutes to the State Detention Hospital from remote parts of the state on telegraphic order immediately on the receipt of a report card from a physician stating that this or that person had infected his patient.

CONCLUSION

Let us remember as physicians that we have no right, legal, moral or ethical, to violate a law. The venereal disease laws of the various states can accomplish results inestimable, but they are all based on the recording of the cases. This must be done by the practitioner. He will do it gladly, if he is true to himself and his community interests. He will do it by compulsion, if necessary. The time has passed when the state health officials should be expected to conduct educational campaigns among physicians. Neither the time, the money nor the patience is available to be wasted in persuasion when the offender is obviously negligent. The physician can be detected readily who evades reporting. He is not at all secure in the secret connivance with his patient. The laboratory diagnostician offers an excellent record of the practitioner's clientele of syphilitics; and the druggists' prescription files are an ideal place to dig out the protected patient with gonorrhea. But why should we be compelled to prosecute the very men who ought to give us aid?

ABSTRACT OF DISCUSSION

DR. OSCAR DOWLING, New Orleans: We have been unable to get the doctors of Louisiana to report their cases, even by numbers. They certainly ought not to be afraid of sending in a report with say "Number 16" as a case of gonorrhea, or "Number 76" as a case of syphilis, or "Number 87" as a case of chancroid. It is more important to have a case of gonorrhea or a case of syphilis reported than to have reported a case of smallpox or a case of leprosy or a case of diphtheria. A man suffering from a venereal disease is allowed to be at liberty. On the other hand, a woman who has the same disease can be confined in the isolation hospital in New Orleans. I do not recall more than one or two men who have been arrested and confined because they had a venereal disease. If it is necessary to confine the women, it is necessary to confine the men. I do not believe in two standards of morality, and I do not believe in two sets of laws for the treatment of these cases. I do not believe in a law which says that woman shall do one thing and a man shall not, or that a man can do one thing and a woman can not. If we can receive from you some suggestion or some plan whereby we can bring about the reporting of these cases, and whereby we can have them treated and cured, we shall be grateful.

DR. A. C. CHACE, Texarkana, Ark.: I wonder if you would be able to sleep when you leave New Orleans in your sleeper, if you knew that the train dispatcher, who is dispatching your train from one telegraph station to the next, had incipient paresis? And yet that happens. It was a feeling of duty toward the public which led the railroads with which I am connected to install what is termed a complete—although it is really incomplete—venereal service, and it is the only venereal service on any railroad in the world, so far as I know. After two years of practical experience with that service, certain points have been brought out that I think will answer, in a slight degree, what Dr. Dowling has asked about. Pennsylvania has seceded from the public health program on venereal disease. Dr. Martin has taken the stand that venereal diseases cannot be made reportable at present because the medical profession will not report them, and he does not believe in putting a rule on the statute books which cannot be enforced. If dangerously communicable diseases, diseases which are the most widely distributed among human beings of any communicable disease, are not reportable, then what diseases are reportable? On the other hand, the U. S. Public Health Service, which has done all that any one could ask for in the way of cooperation, is not using what is admitted to be one of the greatest weapons in this work, and that is the prophylactic or early treatment of venereal diseases. If we have a weapon which is effective in this work, why not use it? The answer, of course, is that churches and certain moralists are against it. I do not believe that is true, however. Dr. Martin has proved that it is not true, because he has put it through in Pennsylvania, and there has not been one single word of criticism from any one of nine million people. In regard to the question of not reporting venereal diseases, here is the only way—to prosecute the physician. It has come to that in every other state in regard to other communicable diseases, and it will have to come in regard to venereal diseases.

DR. W. D. CALVIN, Fort Wayne, Ind.: This paper emphasizes the need of a high central power, directly under the control of a national secretary of health. Then we will have efficiency. The attitude of Pennsylvania is directly attributable to this lack of central power. The fact that physicians in Louisiana are not reporting venereal cases is also due to the same lack of control. If it was a federal proposition, they would report their cases. It has been said by good authority that 8 per cent. of our population is syphilitic. The doctor who states that he has no venereal diseases, he has no syphilis in his practice, is blind, does not recognize that it exists. You cannot go anywhere and fail to see it. It is found everywhere. It is no respecter of persons. If it is true that 8 per cent. of the people of this country are syphilitic, then we have approximately one hundred syphilitics for every physician in the United States. Two propositions present themselves in regard to this question: The first is the general

practitioner's inability to diagnose syphilis, and the second is the lack of ability to treat it. Dr. Edler's statements in regard to the ambulatory clinic and free clinics is in itself a condemnation and censure of all men who do not know how to treat venereal diseases. The United States government, in the free clinics, is doing great work, and doing it better than it is done by the average physician. The educational proposition is most important. Every medical man ought to be willing to go out among the people with whom he lives and instruct them in regard to the dangers of venereal disease. It is by instruction given to the next generation that we will in large part assist in the eradication of these conditions.

We should at least report these cases to our state. There is some objection to making the reports locally, in certain places. You cannot quarantine cases of influenza because there is no law under which to report the cases. The same is true with regard to venereal disease.

DR. MILTON BOARD, Louisville, Ky.: A few days ago I was in the office of a specialist in our city who advised me that in the judgment of himself and his associates 60 per cent. of the cases of venereal disease were referred cases. If that be true, this is very largely a problem for the general practitioner, for the family doctor. If 60 per cent., or even half the cases which go to the specialists in the large cities are referred, then it follows naturally that practically all the cases in rural communities, and in smaller cities, are to be treated, and as a matter of fact are treated, by the general practitioner. The responsibility for the solution of this great civic problem rests on the shoulders of the American doctors. If we are to succeed we must have the conscientious support of the family doctor and not his antagonism. In Kentucky we have adopted two slogans. We print them in our literature, and we try to inculcate these principles in the minds of our people. First, we deny that venereal disease is a private affair between physician and patient. We claim that being infectious and communicable, it is a matter of public concern. Therefore, it should be handled as are other infectious and communicable diseases. Second, we deny that any individual with venereal disease has the right to infect any other person. We have put those principles into organic law of our state. Our state board of health is given wide power so long as it does not abuse this power. Our courts have done remarkably well in upholding our health officers in the wise and just enforcement of the law. Recently the legislature enacted a law creating a bureau of venereal diseases. We go further than that. We have the different towns and cities take action along these lines. The whole proposition resolves itself into the question of enforcement of the law. I agree with Dr. Calvin. The success of the federal law in this country is not the severity of the punishment, but the certainty of the punishment. If we are to get anywhere, the doctors must report these cases, and they must become missionaries in the cause. They must advise their patients of the danger they are to the community, and that if they do not keep within the law, if they do not refrain from spreading the disease, they will be put in quarantine. In our state full power is given for the quarantining of both males and females. Oklahoma sent a man to the penitentiary for five years for infecting a woman with syphilis. Every state should have that kind of a law.

DR. HARDIE R. HAYS, Jackson, Miss.: Ninety-four per cent. of the doctors of Mississippi presented morbidity reports on venereal diseases in 1919, but only a very small number gave us clinical reports. I wrote to the physicians of the state and asked them whether they were willing to give the doctors of the future some statistics by which they might see what was being done in solving the present-day problem of venereal diseases. I got quite a response to that circular letter, but some doctors did not even read the letter. In the next circular letter I told the physicians that if they did not read the literature which was being sent them under separate cover, the laity would soon be better informed on this progressive work than they were. This letter produced a great deal of interest, and a large percentage of the physicians of the state became interested in the campaign. As to the use of prophylaxis: In our "Keeping Fit" campaign we tried to

impress the boy that continence is rewarded with the highest physical and mental development. We cannot put prophylaxis on any basis which will be consistent with that plan of teaching. Women are going more actively into every phase of human endeavor. They work side by side with men; they are going to vote; they are going into every phase of life on the same footing as men and they have the same right to be immoral as men have. We must take the stand that there is only one standard of morals. We men must raise our standard of living so that the standard of womanhood will not have to degenerate to reach the single standard which is here to stay and must be adopted. If we advocate prophylaxis and encourage its use we will say to the world that we cannot raise the standard of morals in our people. I believe in teaching continence. It is the only teaching founded on the truth and that will finally lead man to the highest civilization. Doctors must demand a higher standard in their ranks and in their teaching.

DR. H. F. WHITE, Washington, D. C.: Our present campaign is divided into three phases which we considered essential in combating this disease: the medical, the educational and the legal. We feel that it is necessary to attack this problem from those three sides in order to control venereal disease. We believe from our investigations that many of those who spread this disease are mentally deficient. When such people are found they should be institutionalized. Those of a low grade of development should be kept permanently segregated; those of higher grade should remain until such time as they can take their place in society. That applies equally to both sexes. We have also learned that it will be necessary in the future to provide some logical, well-arranged plan of systematic sex education, beginning in the cradle, if necessary, and continuing at least through the premarital age. We must see to it that those who are suffering from this disease are given proper medical attention. Much has been said in reference to the value of prophylaxis and the need for it. The Public Health Service has investigated the subject very seriously, and during the war prophylaxis was tried out very extensively in the service. But from the studies we have made, and from what we are able to find out, we cannot endorse prophylaxis as being as valuable as the term would suggest. We found that the army, with the strongest military discipline, with punishment inflicted on any one who failed to live up to regulations, was only 50 per cent. efficient. Of course, there is also a moral question which we respect. We would rather have cooperation than dissension. But our principal reason for not talking about prophylaxis is because we do not believe it to be as efficient as it has been represented to be in the past.

DR. WILLIAM EDLER, New Orleans: A doctor told me that a prostitute had come to his office with a florid syphilis. The doctor told her she ought to have medication; that it would cost \$25 for a dose of arsphenamin. She said she did not have the money and left the office. Two days later she returned and laid twenty-five one dollar bills on his desk. Their source was evident. The doctor did not report that case to the city board of health, nor did he retain that woman in his office until the health officer could get her. That physician was a criminal, in my opinion, and should be prosecuted as such. If I were the head of that department of health and had the power I would revoke his license for a period of time. That is my whole interpretation of a venereal disease reporting campaign. It is not to beg doctors to report, but to go out and prosecute and show them that they must not violate the law.

How Much Are You Worth?—The average man contains the constituents found in 1,200 eggs, has iron enough to make four ten-penny nails, fat contents to make seventy-five candles and a good sized piece of soap, not to speak of a bowl of sugar. Considering that eggs are selling for 95 cents a dozen, matches at 6 cents a box, and candles for 5 cents each, \$582.84 is the actual worth of the constituents of a grown person, to say nothing of what the sugar he contains may be worth.—*Minnesota Public Health Association Journal*, Jan. 15, 1920.

DISEASES DUE TO INTESTINAL PARASITES IN COLOMBIA, AND THEIR TREATMENT

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Since the publication of our preliminary report on chenopodium,¹ the opportunity has presented itself for one of us (O. T. B.) to study the human intestinal fauna of the interior of Colombia; so while in this article we propose to continue in large measure the

TABLE 1.—OCCURRENCE OF PARASITES

	Number
Uncinaria (alone): both Old and New World types.....	146
Ascaris (alone)	71
Trichocephalus dispar (alone).....	20
Ameba (alone; ameba coli and histolytica).....	24
Strongyloides (alone)	4
Cercomonas, trichomonas or lamblia (alone).....	3
Balantidium coli (alone).....	0
Tapeworm (saginata or solium, alone).....	0
Uncinaria and Ascaris.....	58
Uncinaria and Trichocephalus dispar.....	52
Uncinaria and Strongyloides.....	14
Uncinaria and ameba.....	13
Uncinaria and Trichomonas.....	3
Uncinaria and Balantidium coli.....	1
Ascaris and Trichocephalus dispar.....	23
Ascaris and Strongyloides.....	3
Ascaris and ameba.....	3
Trichocephalus dispar and Strongyloides.....	4
Trichocephalus dispar and ameba.....	5
Ameba and Strongyloides.....	2
Uncinaria, Ascaris and Trichocephalus dispar.....	46
Uncinaria, Ascaris and ameba.....	9
Uncinaria, Ascaris and Strongyloides.....	2
Uncinaria, Ascaris and tapeworm.....	1
Uncinaria, Trichocephalus dispar and Strongyloides.....	9
Uncinaria, Trichocephalus dispar and Trichomonas.....	4
Ascaris, Trichocephalus dispar and Strongyloides.....	3
Ascaris, Trichocephalus dispar and ameba.....	4
Ascaris, Trichocephalus dispar and Trichomonas.....	2
Trichocephalus dispar, Strongyloides and ameba.....	1
Uncinaria, Ascaris, Trichocephalus dispar and Strongyloides....	15
Uncinaria, Ascaris, Trichocephalus dispar and ameba.....	4
Uncinaria, Ascaris, Strongyloides and Oxyuris vermicularis.....	1
Uncinaria, Trichocephalus dispar, ameba and Trichomonas.....	3
Uncinaria, Ascaris, Trichocephalus dispar, Strongyloides and tapeworm	1
Uncinaria, Ascaris, Trichocephalus dispar, ameba and Trichomonas	5
Uncinaria, Ascaris, Trichocephalus dispar, Strongyloides and Balantidium coli	1
Uncinaria, Trichocephalus dispar, ameba, Trichomonas and Bilharzia	1

discussion of the use of chenopodium, it has seemed feasible to include remarks on the prevalence of parasites in this region as well as some of the experiences with them there.

The Pato and Nechi mines, gold dredging companies in the department of Antioquia, Colombia, are located along the Nechi River, a branch of the Cauca River, which is a branch of the Magdalena. They are situated about 7 degrees north of the equator, and about 450 feet above sea level. The weather is torrid and the humidity very high, even in the dry season (the temperature ranging approximately between 75 and 95 F.). The natives, chiefly negroes and mulattoes, are very poor; the majority go barefoot or wear thin sandals when traveling in the jungle. Their diet consists chiefly of rice, beans, "platanos" (plantains), meat and a great abundance of "panela" or brown sugar. Along the rivers, fish contribute largely to their diet.

The hospital of the Pato and Nechi mines includes a large clinic for native and American employees, together with a considerable outside native practice. The three chief diseases with which it has to deal are malaria, syphilis and hookworm disease; of these, the last named is the greatest malefactor, especially when associated with its other allied intestinal conditions. Over 13 per cent. of the diagnoses made in the hospital during a period of twenty-six months were those of uncinariasis, ascariasis and amebiasis, and a large majority of this number came with symptoms pointing directly to these three diseases.

Of 600 routine stool examinations, covering a period of thirty months, thirty-seven were of white foreigners (mostly Americans), four were of West Indian negroes, and the remaining 559 were of native Colombians. Only thirty-eight of this number were found to be absolutely negative for all parasites, and twenty-six of these were white foreigners and black West Indians, while only twelve were natives. This gives a percentage of almost 98 as positive among the natives of this region for some one of the intestinal parasites. Of the 600 cases, the various parasites were noted as occurring singly or existing in the combinations reported in Table 1.

TABLE 2.—RELATIVE PROPORTION OF VARIOUS CLASSES OF PARASITES

Class of Parasite	Number	Percentage
Uncinaria.....	390	65
Ascaris.....	253	40 7/30
Trichocephalus dispar.....	204	34
Ameba.....	75	12½
Strongyloides.....	61	10¼
Trichomonas, Cercomonas or Lamblia.....	22	3⅔
Balantidium coli.....	2	⅓
Tapeworm (Tinea saginata).....	2	⅓
Oxyuris vermicularis.....	1	⅙
Bilharzia.....	1	⅙

The coexistence in symbiosis of the hookworm, roundworm and whipworm is strikingly characteristic of all the tropical lands of the western hemisphere.

Of the 600 stool examinations, the various classes of parasites appeared in the total numbers and percentages, as shown in Table 2.

For diagnosis, specimens were simply prepared on clean slides with a drop of water and cover-glass in the usual manner and examined with the low power, the high power being used for details; the specimens were first centrifuged, as recommended by Bass. The Bass method would surely have increased the percentage of positives; but it is almost unnecessary when the parasites are so abundant, although it must be essential for health officers; for example, those who give final examinations to the emigrants coming from the Orient, and who are treated on board ship en route to California, or to those guardians of public health who examine applicants for employment for the deep gold mines in California and China.² However, we do not pronounce a negative here until several specimens have been examined, covering usually several days.

When the diagnosis was established, the hemoglobin was taken and registered, after which the treatment was given and repeated (about every fifth day) until a cure had been effected. An interval of from one to three months, depending on the convenience of the patient, was then allowed to elapse before the hemo-

1. Bishop, W. A., and Brosius, O. T.: Chenopodium in the Treatment of Uncinariasis, J. A. M. A. 65: 1610 (Nov. 6) 1915.

2. Compare articles by Dr. Herbert Gunn, San Francisco.

globin was again examined, in order to ascertain the improvement of the blood obtained from the treatment. The average hemoglobin percentage of 250 unselected cases harboring intestinal parasites, regardless of types or combinations, was found to be less than 47.

We think that we can safely state that this is the average percentage of the hemoglobin of the natives of the district of Zaragoza in which the mines are situated. One hundred of the above named unselected cases, taken at random, showed an average hemoglobin of 45.49 per cent. before taking treatment, and an average of 65.25 per cent. after taking a complete course of the therapy, making an average increase of almost 20 per cent. in the hemoglobin. Some of these cases showed marked improvement; for example, yielding an increase of 50 per cent. and over, in the hemoglobin; while others, as will be hereinafter submitted,

in persistent cases and in cases that presented only few hookworms, showed slight or no improvement.

The foregoing series contained all types. In another series, however, of fifty selected cases, the hemoglobin was raised from an average of 35.5 per cent. to 68.6 per cent., making an average increase of 33.1 per cent.

The hemoglobin, after treatment, improves very rapidly in young children and less rapidly in young adults; it responds more slowly after middle life. It is not uncommon to raise the hemoglobin in children 40 or 60 per cent. in two or three months after careful treatment. The normal percentage of hemoglobin is in all probability lower in the tropics than in the northern latitudes; and in attempting to raise the hemoglobin, it is here noteworthy that one commonly finds chronic malaria and syphilis present and other stubborn obstructions.

TABLE 3.—DIFFERENTIAL COUNTS

Case No.	Types	Poly-morpho-nu-clears, per Cent.	Large Mono-nu-clears, per Cent.	Small Mono-nu-clears, per Cent.	Eosino-phils, per Cent.	Trans-itionals, per Cent.	Mast Cells, per Cent.	Case No.	Types	Poly-morpho-nu-clears, per Cent.	Large Mono-nu-clears, per Cent.	Small Mono-nu-clears, per Cent.	Eosino-phils, per Cent.	Trans-itionals, per Cent.	Mast Cells, per Cent.
1	Uncinaria.....	33	9	39	18	1	0	68	Uncinaria and Strongy-loides.....	44	6	42	8	0	0
2	Uncinaria.....	64	3	26	7	0	0	69	Uncinaria and tapeworm	32	5	60	3	0	0
3	Uncinaria.....	40	18	33	7	1	1	70	Uncinaria, Ascaris and ameba.....	75.5	2	18.5	4	0	0
4	Uncinaria.....	31	18	40	5	6	0	71	Uncinaria, Ascaris and ameba.....	22	8	50	18	2	0
5	Uncinaria.....	45	13	26	11	5	0	72	Uncinaria, Ascaris and tapeworm.....	36	6	41	16	1	0
6	Uncinaria.....	49	10	34	5	2	0	73	Uncinaria, Ascaris and Trichocephalus dispar.	34	4	43	17	1.5	0.5
7	Uncinaria.....	46.5	4.5	31.5	16	1	0.5	74	Uncinaria, Ascaris and Trichocephalus dispar.	33	7	49	6	5	0
8	Uncinaria.....	40	10	35	7	8	0	75	Uncinaria, Ascaris and Balantidium coli.....	50	9	35	5	1	0
9	Uncinaria.....	52	7	28	7	4	2	76	Uncinaria, Ascaris, Tri-chocephalus dispar. Strongyloides and ameba.....	36	5	46	11	2	0
10	Uncinaria.....	61	5	23	10	0	1	77	Uncinaria, Ascaris, Tri-chocephalus dispar, and Trichomonas.....	55	4	34	5	2	0
11	Uncinaria.....	44	11	34	7	4	0	78	Uncinaria, Ascaris, Tri-chocephalus dispar. Strongyloides and ameba.....	40	4	49	7	0	0
12	Uncinaria.....	25	10	54	8	2	1	79	Uncinaria, Ascaris, Tri-chocephalus dispar and Strongyloides.....	29	9	52	9	1	0
13	Uncinaria.....	38	17	33	6	6	0	80	Uncinaria, Ascaris, Strongyloides and Trichomonas.....	26	11	47	13	3	0
14	Uncinaria.....	41	10	41	6	2	0	81	Uncinaria, Trichocephalus dispar, ameba and Trichomonas.....	47	6	36	9	2	0
15	Uncinaria.....	28	10	33	26	1	2	82	Uncinaria, Trichocephalus dispar and Tricho-monas.....	40	5	35	18	1	1
16	Uncinaria.....	59.5	5	28.5	5.5	1.5	0	83	Uncinaria, Trichocephalus dispar, Trichomonas and Strongyloides.....	41	4	32	22	0	1
17	Uncinaria.....	44	4	40	9	1	2	84	Ascaris and Trichocephalus dispar.....	42	3.5	49	2	3	0.5
18	Uncinaria.....	33	5	55.5	6	0	0.5*	85	Ascaris and Trichocephalus dispar.....	25	7	41	24	2	1
19	Uncinaria.....	54.5	4	21.5	19.5	0	0.5	86	Ascaris and Trichocephalus dispar.....	51.5	3	36	8.5	0	1
20	Uncinaria.....	55	5	34	6	0	0†	87	Ascaris and Trichocephalus dispar.....	40	4	47	9	0	0
21	Uncinaria.....	53	6	33	8	0	0	88	Ascaris and Trichocephalus dispar.....	64	6	22	8	0	0
22	Uncinaria.....	32	7	43.5	17.5	0	0	89	Ascaris and Trichocephalus dispar.....	41	7	46	6	0	0
23	Uncinaria.....	45.5	11	22	20.5	0	1	90	Ascaris and Trichocephalus dispar.....	34	12	45	7	2	0
24	Uncinaria.....	42	9	33	16	0	0	91	Ascaris and Trichocephalus dispar.....	50	9	28	10	3	0
25	Uncinaria.....	37	11	42	8	0	2	92	Ascaris and Trichocephalus dispar.....	56	11	28	4	0	1
26	Uncinaria.....	30	12	38	19	0	1	93	Ascaris and Trichocephalus dispar.....	46	5	28	20	0	1
27	Uncinaria.....	17.5	15.5	45.5	19.5	1	1	94	Ascaris and Trichocephalus dispar.....	43	6	37	14	0	0
28	Uncinaria.....	33	14	50	3	0	0	95	Trichocephalus dispar...	30	13	38	9	7	3
29	Uncinaria.....	40	9	37	11	2	1	96	Trichocephalus dispar...	39	14	41	6	0	0
30	Uncinaria.....	48	5	36.5	9	1	0.5	97	Trichocephalus dispar...	49	5	17	27	0	2
31	Uncinaria.....	49	5	38	5	3	0	98	Trichocephalus and Strongyloides.....	51	5	37	7	0	0
32	Uncinaria and Ascaris...	44	13	37	6	0	0	99	Ameba.....	59	10	26	3	1	1
33	Uncinaria and Ascaris...	50	14	31	3	2	0	100	Ameba and Trichomonas	60	11	25	4	0	0
34	Uncinaria and Ascaris...	56	10	20	7	6	1								
35	Uncinaria and Ascaris...	34	10	41	12	2	1								
36	Uncinaria and Ascaris...	36	14	41	7	2	0								
37	Uncinaria and Ascaris...	35	16	28	14	6	1								
38	Uncinaria and Ascaris...	32.5	11.5	45	8	3	0								
39	Uncinaria and Ascaris...	38	10	34	16	2	0								
40	Uncinaria and Ascaris...	36	10	35	16	3	0								
41	Uncinaria and Ascaris...	31	13	39	9	8	0								
42	Uncinaria and Ascaris...	44	7	37	11	1	0								
43	Uncinaria and Ascaris...	38.5	14	37.5	6	4	0								
44	Uncinaria and Ascaris...	37	10	43	5	5	0								
45	Uncinaria and Ascaris...	40.5	10.5	33	7	3	0								
46	Uncinaria and Ascaris...	46	2	40	11	1	0								
47	Uncinaria and Ascaris...	45	8	39	6	2	0								
48	Uncinaria and Ascaris...	53½	7½	31½	5½	2	0								
49	Uncinaria and Ascaris...	40	5	30	23	1	1								
50	Uncinaria and Ascaris...	43	9	37	7	4	0								
51	Uncinaria and Ascaris...	40	5	26	27	2	0								
52	Uncinaria and Ascaris...	66	5	12	15	1	1								
53	Uncinaria and Ascaris...	56	5	32	6	1	0								
54	Uncinaria and Ascaris...	74	2	20	3	1	0								
55	Uncinaria and Ascaris...	81.5	2.5	10	4	1.5	0.5								
56	Uncinaria and Ascaris...	39	6.5	40.5	10	2.5	1.5								
57	Uncinaria and Ascaris...	37	10	30	17	5	1								
58	Uncinaria and Ascaris...	41	8	34	14	3	0								
59	Uncinaria and Ascaris...	41	3	29	27	0	0†								
60	Uncinaria and Ascaris...	46	4	35	13	1	1								
61	Uncinaria and Ascaris...	48	9	28	15	0	0								
62	Uncinaria and Ascaris...	70	4	20	6	0	0								
63	Uncinaria and Ascaris...	39	9	39	11	1	1								
64	Uncinaria and Ascaris...	35	5	34	23	1	2								
65	Uncinaria and Ascaris...	46	7	39	6	2	0								
66	Uncinaria and Ascaris...	43	9	38	5	5	0								
67	Uncinaria and Trichocephalus dispar.....	42	8	39	11	0	0								

• Filaria.

† Nucleated reds; poikilocytosis; anisocytosis; achromia.

‡ Nucleated reds.

There were cases, though fortunately these were rare, in which the hemoglobin actually continued to decrease even after thorough treatment. The red blood count and the hemoglobin gave a color index greater than 1; and although erythroblasts were found to be extremely rare, on differential counts, the polychromatophilia, anisocytosis, poikilocytosis, basic stippling and leukopenia presented a blood picture not unlike that of pernicious anemia. In three such cases, hookworm eggs were persistently found in the stools, though never in large numbers, after thorough and repeated treatments.

One patient died about four months after a course of treatment, showing no other pathologic manifestations; unfortunately, a necropsy was not permitted. The case presented a clinical picture of pernicious anemia. Another patient who came under our observation, and whose case was previously reported,¹ was given three thymol and two chenopodium treatments. His stools continued positive. At necropsy, the small intestine was literally filled with hookworms, which were embedded deeply in the mucosa of the valvulae conniventes of especially the duodenum and cecum.

As resident physicians in the hospitals of Ancon and Santo Tomas, in the Canal Zone and in Panama, respectively, where routine blood smear and stool examinations are made in all cases admitted, we had often heard discussions as to whether long-standing infections of intestinal parasites would or would not cause eosinophilia; and in this connection we were interested to learn from Dr. McClanahan's paper³ that eosinophils were not increased in infestations of *Trichocephalus dispar*.

To investigate these questions, differential counts in 100 cases which appeared to be of long standing were made. The results are given in Table 3.

The result of the tabulation yielded ninety, or 90 per cent., as having shown eosinophilia; that is, a presence of more than 4 per cent. eosinophils. The average percentage of eosinophils in those showing the increase of these cells was 10.91. The high percentage of lymphocytes in some cases is due to the fact that there were quite a few children among the cases.

In eighty-three of the cases, hookworms existed alone or in combination with other parasites, and seventy-seven of these, or almost 93 per cent., showed eosinophilia. The average percentage of eosinophils in these cases was 10.86. Of the ten cases presenting *Ascaris* alone, eight, or 80 per cent., showed an increase in eosinophils averaging 8.5 per cent. to the individual. This series, as well as the three cases presenting *Trichocephalus dispar* alone and showing 14 per cent. eosinophils, was too small to submit any information of value.

UNUSUAL SYMPTOMATOLOGY

The general symptomatology of hookworm and roundworm disease is so well known that we will not repeat it, but we wish to mention some of the unusual symptoms and conditions that sometimes arise.

We have seen here diarrheas caused by hookworm alone. On several occasions, ascariasis and uncinariasis have caused severe abdominal pains, which were quieted by chenopodium treatment, with subsequent expulsion of the worms, when previously applied cathartics and other simple remedies had failed.

Ascarides existing alone have been known to cause severe anemia, which improved after chenopodium treatment; more often, however, the patient in this region first recognizes that he has roundworms when he vomits one or more during an attack of malaria or some other febrile complaint.

Ascarides causing suffocation when lodged in the trachea of children, and ascariasis necessitating surgical interference for various and remote reasons are also on record.

TREATMENT OF HOOKWORM AND ROUNDWORM DISEASE

In hookworm and roundworm disease we now use chenopodium exclusively. Salant⁴ has discussed the pharmacology of this drug. We do not wish here to discuss the superior merits, as a vermifuge, of the drug over thymol, for we are still strongly of the same opinion as when we presented our preliminary findings,¹ but we do want to bring out the fact that it has been possible to moderate the dose considerably, and we have found the diminished dosage equally as efficient as the larger doses and less troublesome to the patient.

UNTOWARD EFFECTS

At the Hospital Santo Tomas, and early in our experience with the drug, we were accustomed to give to adults two capsules of 8 minims each every two hours for three doses, followed in several hours by 2 ounces of castor oil. In that hospital, this therapeutic procedure was continued for eighteen months, during which time only one case was noted in which this drug was directly responsible for death. The patient was a cardionephritic, with a severe hookworm infection. At necropsy it was found that the kidneys had chronically degenerated.

Several cases of partial and one case of permanent deafness were noted, which were attributed to chenopodium by the majority of the staff. Those cases, however, which occurred in our wards, gave positive Wassermann reactions, the examinations of the ear revealing a nerve deafness, with normal drums. But it may be worthy of mention that the ill effects arose only with a second supply of the oil, none having occurred with the supply first received.

After the use of chenopodium at Pato was begun, it was taken up with some enthusiasm at Medellin, Antioquia, Colombia, but was quickly abandoned because of some unfortunate untoward results, namely, marked deafness in many cases and death in three, as reported by Dr. Gil in the *Revista clinica* of Medellin.

It is probable that some of the oils on the market have more toxic effects than others. Whether the varying toxicity is dependent on the purity of the product, its age, conditions of storage and manner of dispensing, or is due to idiosyncrasies of the individual are questions that need further study. But until such time as definite information is obtained, we feel that only the purest oils furnished by reliable drug firms should be administered.

In an attempt to lessen the possibilities of the untoward effects of the drug, the original dosage with which we worked at Santo Tomas has been modified. Soft gelatin capsules of 0.3 c.c. each were used, as supplied by reliable pharmaceutical houses. Undoubtedly the freshly filled hard gelatin capsules recom-

3. McClanahan, H. M.: Intestinal Parasites in Children, J. A. M. A. 71: 623 (Aug. 24) 1918.

4. Salant, William: The Pharmacology of the Oil of Chenopodium, with Suggestions for the Prevention and Treatment of Poisoning, J. A. M. A. 69: 2016 (Dec. 15) 1917.

mended by Darling, Barker and Hacker⁵ would have yielded even a higher percentage of efficiency.

In the hospital of the Pato and Nechi mines, 430 cases have so far been treated with chenopodium, requiring 750 treatments, or an average of 1.75 treatments per case, without any marked or permanent deleterious effect. The worst symptoms that have been noted were nausea and vertigo, with slight temporary partial deafness such as follows quinin administration. These always passed away after the castor oil purge; but we acknowledge the slight, general depressing effect it often has, even when given in moderate doses. Vomiting has never occurred from this moderated dosage.

OIL AS A PROPHYLACTIC MEASURE

Following the suggestions of several writers on the subject, the taking of much oil or fats prior to and on the days of treatment has been recommended patients, and an apparent decrease in the toxic symptoms mentioned above has been noticed, possibly because the fat rendered the intestinal wall less permeable to absorption of the toxic principles of the drug.

Chenopodium should have infinite value in field work in hookworm therapy because of the simple method of administration, and because, as Weston stated in his discussion of McClanahan's paper³: "We seldom found a case of uncinariasis that was not complicated with other intestinal parasites, and the use of oil of chenopodium was equally effective in the elimination of these other intestinal parasites as with the uncinaria." Two treatments at least should be given with the safer dosage herein recommended.

Our experience has shown that dietetic restrictions and preliminary purges are unnecessary, which makes the treatment very simple for patient and nurse, and chloroform has seemed to us to be superfluous. A strong adult is given three capsules, two hours later two capsules, and after two hours, three capsules more. Three hours later, 2 ounces of castor oil are given. An adult woman receives generally only six capsules in the entire treatment, three doses of two capsules each, at two-hour intervals, followed by the castor oil. The doses for children are moderated almost in accordance with Young's rule, very young children being given the drops with a teaspoonful of sugar. It is safe to give a child 1 minim for every year of his age, to be repeated once in two hours, followed in three hours by the castor oil. In all cases, the condition of the patient is noted before the subsequent dose is given, and if there is evidence of much depression, the last dose is omitted.

As evidence concerning the efficiency of the moderated dosage, we tabulated the results produced in 100 unselected cases, showing the number of hookworms expelled, and the number of treatments necessary to produce a cure. Where ascarides coexisted, a record of their expulsion was also made.

It may be generally safe to call any case an absolute cure wherein the last treatment has expelled only ten or less hookworms, assuming that a subsequent treatment would yield nothing (we know, however, that his rule would not hold for some few very persistent cases, as hereinbefore cited). But with this as a standard, we may consider the first fifty cases as absolute cures; 120 treatments being necessary in these cases to establish fifty cures, making an average of 2.4

treatments to the absolute cure, with the decreased dosage. From this series of 100 cases, we learn that the first treatment almost always expels most of the worms. In 100 first treatments 30,548 worms were expelled, making an average of over 300 worms expelled in an average case of hookworm disease in the first treatment in this region. In the first fifty absolute cures, 19,867 worms were expelled, making an average of 397.34. In the same fifty cases, 16,593 worms were expelled by the first treatment, or 331.86 per case of the total worms. Thus, about 84 per cent. of all the worms were expelled in the first treatment, with this reduced dosage. In the first and second treatments together, in the same series, 18,994 worms were expelled, or 379.88 worms per case, making altogether 95.58 per cent. of the worms expelled in the first two treatments.

In view of the fact that hookworms cannot reproduce themselves in the intestine of the host, it is quite conceivable that great good is done even by giving only one treatment, wherewith most of the other associating parasites are simultaneously expelled, and the body's resistance is raised to battle with the persisting parasites. Of course, a thorough cure should always be effected when possible and convenient.

A record of 100 cases of infestation with *Ascaris lumbricoides* demonstrates that these respond to treatment more quickly and require fewer treatments for a complete cure.

In addition to uncinariasis and ascariasis, the chenopodium treatment has a slight effect on infestation with *Strongyloides*, but we believe this to be due more to the purge than to the anthelmintic. Saline purges alone will yield similar results. We have read with interest that chenopodium has established cures in amebic dysentery, but experimentation at Pato has not borne that out. However, we have seen the intestine cleaned with chenopodium from apparently harmless amebas (probably *Endameba coli*) existing without dysentery and ulceration of the intestine, and found only in a given series of routine stool examinations, probably because the amebas were free in the intestine and not deeply embedded in their characteristic undermined ulcers, as is *Endameba histolytica* in the disease which it produces.

When *Endameba histolytica* is concerned with the production of an active dysentery, we have found the emetin-bismuth combination so far to be the most satisfactory. We have not as yet given the emetin-bismuth-iodid preparation mentioned by Crowell⁶ a sufficiently long or thorough test to discuss it.

The muddy waters of the Nechi River, and the many little streams existing hereabout, laden with decomposing vegetable matter, reap their yearly death toll from the unfortunate inhabitants.

In 600 stool examinations, amebas appeared in seventy-five cases, making a total of 12.5 per cent. These were mostly *Endameba histolytica* and were producing active dysentery, which we are at present treating as follows: An absolute milk diet is prescribed. To a strong adult, a heaping teaspoonful of bismuth subnitrate is given four times a day for several days (depending on the severity of the case) and emetin hydrochlorid injections of $\frac{1}{3}$ grain, three times the first day, $\frac{2}{3}$ grain, three times the second day and 1

5. Darling, S. T.; Barber, M. A., and Hacker, H. P.: The Treatment of Hookworm Infection, J. A. M. A. 70: 499 (Feb. 23) 1918.

6. Crowell, B. C.: Treatment of Intestinal Amebiasis, with Special Reference to Ipecac and Its Derivatives, J. A. M. A. 69: 6 (July 7) 1917.

grain, three times the third day, making a total of 6 grains in three days, taken in progressively increased doses. After an interval of from three to four days, during which the bismuth alone is given, the emetin treatment is repeated as given before, and the bismuth is given only three times a day. After this, as the patient continues to improve, the bismuth is gradually decreased and the diet is gradually brought to the normal.

In very severe cases, opium and phenol are given with the bismuth, and intestinal irrigations, given high, of weak potassium permanganate solutions, have been found very effective.

After the bismuth-emetin treatment, we often administer tablets of bismuth subnitrate (5 grains), powdered opium ($\frac{1}{4}$ grain), aromatic powder (1 grain) and phenol ($\frac{1}{8}$ grain) with gratifying results. With this treatment we have had splendid success when given thoroughly, and have had few recurrences when there had been no hepatic complications. When *Endameba histolytica* has undergone cyst formation, the recurrences are less common, and these often successfully resist thorough treatments. We have not had sufficient time as yet to give a fair trial to the large doses of ipecac suggested by Dr. Simon⁷ of New Orleans in these persistent cases.

In this connection it will be of interest to narrate a unique experience of a refined and educated man who came under observation and examination, and whose veracity is unquestioned.

CASE 1.—As a mining engineer in Australia about twenty years ago, he became afflicted with an unusually severe type of amebic dysentery, so severe that he was told that he could not live. His wife nursed him, and several physicians attended him in consultation. His wife was instructed to inject rectally at regular given intervals a 20 c.c. syringe of a mixture of starch and laudanum, and to paint at the same time an ulcer of the buttock with tincture of iodine. In her newly acquired vocation as nurse, and in the attendant excitement, mingled with intense anxiety, she injected by mistake a syringe of the tincture of iodine into the rectum. From that time on, the man began to improve, and rapidly recovered. To this day he has never had a relapse. On three occasions, one of us (O. T. B.) has examined the stool, and no trace of amebas have been found.

It is noteworthy that chenopodium treatments for hookworm and roundworm disease have frequently, by their irritation of the intestinal mucosa, lighted up old amebic dysenteries, wherein the amebas were not detected on the first stool examination. Also we have seen cases here, wherein amebic dysenteries would not yield to emetin and bismuth alone, but these in conjunction with neo-arsphenamin proved effective, most probably because of a coexisting syphilitic ulceration of the intestine. Neo-arsphenamin alone is ineffective.

Chenopodium seems to have very little effect on whipworms, which, however, as far as we can ascertain, produce no ill effects, although they have been accused of many. Out of 600 stool examinations, 204, or 34 per cent., were positive for whipworms. Out of fifty cases, in which *Trichocephalus dispar* coexisted with uncinarias and ascarides, and in which chenopodium yielded a complete cure for the latter two types of parasites, *Trichocephalus dispar* eggs continued positive in the stool examinations in forty-six cases.

We rarely see whipworms in the examinations of whole stools after chenopodium treatments. Case 2 was an exception.

CASE 2.—A native woman, aged 20, was examined in this hospital for intestinal parasites after complaining of severe abdominal pains. The stool was found positive for uncinarias, ascarides and *Trichocephalus dispar*. Accordingly she was given a chenopodium treatment and passed 319 hookworms, twenty-three roundworms and thirty whipworms. Five days later a second chenopodium treatment was given which expelled eleven hookworms and five whipworms. The third and last chenopodium treatment a week later expelled only one whipworm.

The treatment of the flagellate protozoa with chenopodium seems equally as discouraging as the treatment of the whipworm. The diarrheas due to *Cercomonas*, *Trichomonas* and *Lamblia* yield well, however, to intestinal irrigations of methylene blue, or to weak solutions of potassium permanganate, given high, with opium, bismuth and phenol tablets given by mouth. These diseases have a peculiar faculty of subsiding in the temperate zones, untreated, but again recurring after long lapses of time—even years—on return into the tropics.

CASE 3.—A young English army officer recently came under the observation of one of us (O. T. B.). He acquired a severe *Trichomonas* infection, with diarrhea, in southern China several years ago, and was there treated, as far as could be ascertained, symptomatically. On his subsequent return to England, the diarrhea quickly disappeared. When the war broke out, he received his commission and was sent to Egypt on duty. Shortly after his arrival there, his old diarrhea again made itself manifest, and after some treatment he was transferred to the British Isles, where his diarrhea completely disappeared once more. After the signing of the armistice, he received his discharge and came to Colombia. Six weeks after his arrival, his old complaint again returned. At this time he became a patient at the Pato Hospital, received the treatment outlined above, and as yet has had no return of symptoms.

The diarrheas due to *Balantidium coli*, however, are most persistent. They resist all forms of treatment, including intravenous injections of neo-arsphenamin, which often is a valuable asset in the treatment of intestinal diseases in the tropics; probably because of the tremendous prevalence of syphilis.

Tapeworm is rare here because the natives cook all of their food well, especially the meats. In 600 stool examinations, only two were positive for tapeworm, and these were both *Taenia saginata*. One of these cases proved very interesting.

CASE 4.—A man, Colombian, aged 50, well developed and nourished, came to the hospital to be treated for tapeworm. He had been unsuccessfully treated elsewhere. The stool examination revealed uncinarias, ascarides and *Tenia saginata*. He was given a chenopodium treatment, with the intention of removing the hookworms and roundworms present, with the result that eighty-nine hookworms and two roundworms were passed. The attendant, trained to examine these whole stools, noted that many tapeworm segments were present in the stool, but not having been instructed "to look for the head," he neglected to do so. Four days later, the patient was given a thorough treatment for tapeworm, with aspidium, after which the whole stool examination, carefully rendered by several of us, yielded an absolutely negative result. Three days later another chenopodium treatment was given and only two hookworms were passed—absolutely nothing more. Four days later another aspidium treatment was given to confirm our findings, and as before, it expelled nothing. Evidently the chenopodium had removed the tape-

7. Simon, S. K.: Comparative Value of Ipecac and Its Alkaloids in Treatment of Intestinal Endamebiasis, J. A. M. A. 71: 2042 (Dec. 21) 1918.

worm, even without the preliminary purge which is so essential in the treatment with aspidium. Unfortunately, no similar cases have presented themselves since.

We have dwelt at length on the effects of chenopodium on the important intestinal parasites, with a view of submitting convincing evidence concerning the value of this drug in field work therapy of hookworm and roundworm disease. The decided improvement made in the thymol treatment by the addition of lactose and sodium bicarbonate is interesting, as is the recommendation by some writers of the use of chloroform for uncinariasis; but are these drugs as safe as chenopodium, when given in the dosage recommended herein, and are they as practical, when they are acknowledged to have an anthelmintic effect on only one class of intestinal parasites?

We have purposely omitted a discussion of the prophylaxis of hookworm and roundworm disease. These are so well known, as well as are the modes of infection on which they are based.

The control of amebiasis is more difficult because of the difficulty in educating the natives to the dangers of drinking the river water and water from many of the "quebredas" or jungle streams, and to the necessity of drinking only water which has been boiled or filtered, or such as is supplied them by the companies.

SUMMARY

1. Hookworm disease is almost ubiquitous among the natives of the district of Zaragoza, 98 per cent. of the inhabitants being infected. We believe that with the centrifugal method of diagnosis this percentage might be made a little higher, and we also are of the opinion that this figure is almost generally applicable to all the inhabitants of the low hot lands of Colombia. Here, if anywhere, there is due need of hookworm campaigns, education and sanitation.

2. All forms of intestinal parasites apparently live and thrive in the same individual, no type producing conditions inimical to the life of the others.

3. We have come to the conclusion that the normal hemoglobin content of the natives of this region is somewhat lower than that of natives of the temperate zones; about 70 per cent., and think possibly this assertion may prove applicable to all natives of the equatorial belt. Our investigations have shown that the present hookworm infested population of Zaragoza has an average hemoglobin percentage of 47. Except in rare instances, a removal of the hookworms from the intestine of a sufferer is immediately followed by a rise in the hemoglobin percentage, without any other treatment being employed to bring this about. Doubt exists in our minds as to whether the exhibition of iron-containing medicines will accelerate or augment the normal gain that has been noted after a thorough removal of all hookworms. The gain in hemoglobin varies from 20 to 50 per cent., being most marked and most rapid in children, less rapid in young adults, and more slow after middle life.

4. Ninety-eight per cent. of a selected list of apparently chronic hookworm cases showed eosinophilia, and the average percentage of these cells in these cases was 10.91.

5. The unusual symptoms of hookworm disease, noticed in the cases coming under our observation, have been general depression, nausea and vomiting, and diarrhea. Severe abdominal pains are at times

traceable solely to the presence of hookworms or ascarides.

6. During our work with chenopodium at Santo Tomas Hospital, we saw several cases that exhibited toxic symptoms which we believed were attributable to chenopodium. Those symptoms were nausea, vomiting, general depression and weakness and vertigo, with deafness rarely permanent, usually being temporary. When permanent, it always had a background of syphilis or other preexisting disease. Deaths have been reported, one of which came under our observation.

Endeavoring to eliminate the possibility of these uncomfortable occurrences, the dosage of the drug was reduced from 48 minims to from 35 to 40 minims for a treatment, and we find that in 430 cases, 750 treatments were necessary to effect cures. Or, in other words, we have found that 1.75 treatments per case was necessary, in this series of 430 cases, to effect a cure. In a smaller unselected series, 2.4 treatments were necessary.

We feel certain that most investigators will agree with us that whatever the dosage, the great majority of cases will require more than one treatment thoroughly to remove the worms in a given case.

If the fact can be established that a 35 to 40 minim treatment is all that is necessary, and that in the great majority of instances two of such treatments will effect a cure, it should do much to lighten the field work of the hookworm commissions and operate to widen their scope and hasten results.

The fact that oil of chenopodium acts as a vermifuge to more than one of the other intestinal parasites is an added factor in its favor.

The result of these investigations shows that the first treatment always removes most of the worms; namely, about 84 per cent., and the percentage removal for ascarides is about the same (88).

7. *Ameba histolytica* occurred in 12.5 per cent. of the cases investigated, and we believe that this represents the average incidence of this disease in this district.

8. *Trichocephalus dispar* has an average incidence of about 34 per cent. In fifty cases treated with chenopodium, in which complete cures were obtained of the coexisting uncinaria and ascaris infection, only four were noted in which *Trichocephalus dispar* eggs could not be detected in the stools at the end of the treatment.

The Teaching of Internal Medicine.—In the efforts which have been made to improve the teaching of medicine, not infrequently that division of medicine having to do with the study of so-called internal diseases has received the least and last consideration. These diseases, however, because of the suffering and loss of life which result from them, are of far more practical importance than any other group of diseases. Of much more significance than this, at least from the educational standpoint, is the fact that the diseases of internal medicine are the ones which are most susceptible to scientific study, and thus far they are the principal diseases to which modern scientific methods of investigation have been applied. They are, therefore the diseases with which the student of medicine should be chiefly concerned during his earlier years. It is in the study of these diseases that the student should develop his perspective and should obtain a knowledge of the methods which should be employed in the study of all other diseases.—Rufus Cole, *Science*, April, 2, 1920.

INFREQUENCY OF INTESTINAL PARASITES IN YOUNG CHILDREN*

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The object of this study was to determine the frequency of helminthiasis in children attending an outpatient department in New York City. There have been a number of studies made in recent years regarding the presence of intestinal parasites in children. Most of these investigations have been on children over 3 years of age, and the majority have been in institutions where the incidence of all diseases is higher than in children living at home. In the study made by De Buys and Dwyer¹ the stools were collected from seven institutions, and of the 595 individuals whose stools were examined, 53.2 per cent. were infected, the ages varying from 3 weeks to 18 years.

The outpatient department of The Babies' Hospital, where these stools were examined, is not a neighborhood clinic. The patients are recruited from all parts of the city. They represent a class sufficiently interested in their children's welfare to travel long distances for advice. This type of child is likely to live under better hygienic conditions and receive more intelligent care than the average child of the neighborhood clinic.

This study covered a period of five months, from July, 1919, to January, 1920. The stools were collected at random, without reference to the condition of the child or to the symptomatology. Many stools were examined of children who attended the clinic as visitors accompanying a sick brother or sister. Some were of children who attended for vaccination. Mothers attending the clinic with a sick child were urged to bring stools of their other children for examination. Some brought them because a neighbor believed the child had worms.

The routine procedure was to place the child on a vessel for a few minutes; if no stool was obtained, the child was given an enema of warm tap water; if this was unsuccessful, the parent was given a container and told to bring a fresh stool to the next class.

The method employed in this study for examination of stools was the brine flotation-loop method as perfected by Kofoed and Barber.² This method has the advantage of being simple and accurate. Kofoed and Barber found from 6 to 8 per cent. more hookworm infections by their method than by the centrifuge method. They found that the ova of the following parasites were floated up by the brine into the surface layer of the pool without distortion or noticeable change in appearance: *Ancylostoma duodenale*; *Ascaris lumbricoides*; *Trichuris trichiura*; *Taenia solium*; *Hymenolepis diminuta*; *Necator americanus*; *Oxyuris vermicularis*; *Taenia saginata*; *Hymenolepis nana*, and *Dipylidium caninum*.

Schloss,³ in 1910, made an admirable study of helminthiasis; his efforts were directed toward securing data regarding several phases of the subject. In con-

secutive examinations of the stools of 280 children he found that 28.57 per cent. harbored worms. The low percentage of infection reported here as compared with the high figures reported by Schloss may be due to the difference in the age of the children and to the fact that the children in this study came from better hygienic surroundings. In Schloss' study, 78 per cent. of the positive cases were in children over 5 years of age.

The samples of stools varied between 25 and 100 gm. in weight. The entire sample was thoroughly mixed with brine in a 350 c.c. tumbler. A disk of steel wool approximately one-fourth inch in thickness was used to force the particles of feces to the bottom of the tumbler. The mixture was allowed to stand approximately an hour, this interval allowing the ova time to ascend to the surface of the fluid. Several loopfuls of the surface fluid were then placed on a slide and searched with the low power. Frequently several slides of the same specimen were examined, about fifteen minutes being allowed to each slide. Except in a few instances, only one specimen was examined from each child. The examinations were made by two young women students of Hunter College. Their work was supervised by the hospital pathologist.

It was found that a history of symptoms commonly associated in the minds of the laity with the presence of intestinal parasites could be elicited frequently from parents of children over 12 months of age. The symptoms which the parents most commonly attribute to the presence of intestinal parasites are restlessness at night, grinding of teeth, picking the nose and lips, loss of weight, capricious appetite and irritability.

Three hundred and eight stools were examined. Fifty-three stools from infants during the first year of life, sixty-six during the second year of life, sixty-four during the third year, fifty-six during the fourth year and sixty-nine from children from 4 to 12 years of age.

The number of stools found harboring intestinal parasites in the entire group of 308 cases was only seven, or 2.27 per cent. Of these seven cases, the presence of parasites was determined in four cases by the finding of ova, and in three by the presence of the parasites.

If the statements of the parents could be accepted regarding their findings of worms in the stools, the percentage would be higher. Fruit skins and strings of mucus may readily be mistaken by anxious mothers for some types of intestinal parasites.

Of the fifty-three examinations of infants during the first year, none were positive. Of the sixty-six during the second year, none were positive. Of the sixty-four during the third year, three were positive. In one child, 28 months of age, the ova of *Ascaris* were found; in another the same age, the *Ascaris* parasite, and in a third, 26 months of age, the *Oxyuris* parasite.

Of the fifty-six examinations in the fourth year, there were no positive cases.

Of the sixty-nine examinations in children from 4 to 12 years of age, four were positive; one, aged 6 years, with the ova of *Oxyuris*; another, aged 4 years, with the ova of *Ascaris lumbricoides*; another, aged 7 years, with *Oxyuris vermicularis* as well as the ova of *Ascaris lumbricoides*, and one, aged 4 years, with *Oxyuris vermicularis*.

* From the outpatient department of The Babies' Hospital.

1. De Buys, L. R., and Dwyer, H. L.: Study of the Stools in Children's Institutions Showing the Incidence of Intestinal Parasitic Infections, *Am. J. Dis. Child.* **18**: 269 (Oct.) 1919.

2. Kofoed, C. A., and Barber, M. A.: Rapid Method for Detection of Ova of Intestinal Parasites in Human Stools, *J. A. M. A.* **71**: 1557 (Nov. 9) 1918.

3. Schloss, O. M.: Helminthiasis in Children, *Am. J. M. Sc.* **139**: 675 (May) 1910.

Of the sixty-nine children from 4 to 12 years of age, 5.7 per cent. harbored intestinal parasites.

Of the 189 children from 2 to 12 years of age, 3.7 per cent. harbored intestinal parasites.

It is possible that the ova of *Oxyuris vermicularis* might have escaped detection in certain stools, as frequently they are only found about the anal folds.

The examination of stools for ova in infants under 1 year of age is not customary. It was made in this study because many of the infants over 9 months of age receive the same variety of food in limited amounts as children during the second year of life, and in other ways are as susceptible to infection. The number of positive cases in the entire group is small as compared with the findings of other investigators. This low incidence of infection may be explained by the good hygienic conditions of the children included in this study.

SUMMARY

1. In an examination of 308 stools in children up to 12 years of age, 2.27 per cent. harbored parasites.

2. There were 3.7 per cent. positive in 189 examinations of children from 2 to 12 years of age.

3. In a group of sixty-nine children from 4 to 12 years of age, 5.7 per cent. were positive.

4. In another group of 189 children from 2 to 12 years of age, 3.7 per cent. harbored intestinal parasites.

CONCLUSION

Intestinal parasites are infrequent in New York City children living under good hygienic conditions.

17 East Seventy-First Street.

INCREASING THE PATHOLOGIST'S USEFULNESS AND HIS REWARDS

WITH DIRECTIONS FOR PREPARATION AND USE
OF A POLYCHROME METHYLENE BLUE
STAIN FOR FROZEN SECTIONS *

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It is now extremely difficult for most universities to secure pathologists. This conclusion I have reached after talking with a number of pathologists, after having written to others, and after my own comparatively recent experience in attempting to secure an assistant.

It seems that few are entering and remaining in pathology. Present rewards are inadequate to attract men to become pathologists,¹ and the high cost of living is causing many of those who were in pathology to go into clinical medicine, where the rewards are greater.

The average pathologist is probably not properly trained to show his real value. He devotes more time to the pathology of the dead than to that of the living. He is usually taught that the diagnosis of frozen sections is unreliable. Nevertheless, rapid and reliable methods of diagnosis are necessary if the surgeon is to receive the assistance he needs during

an operation. If pathologists can learn to make reliable diagnoses from frozen sections, the value of these diagnoses to the clinicians will be very great.

Frozen section work is relied on where it is used extensively. Dr. William Mayo told me last summer that he did not see how the clinicians at the Mayo Clinic could get along without the aid which the department of surgical pathology is now continuously furnishing. Repeatedly surgeons at the Mayo Clinic stop in the midst of an operation to get a report from the surgical pathologist before deciding on the nature and extent of the operation.

EXAMPLES

A few examples² will show how diagnoses made from frozen sections may help the surgeon.

1. A patient has an ulcer of the lip which is excised for malignancy, but the microscopic examination shows that it is syphilitic. The surgeon's operative plan is halted by this diagnosis and the treatment is entirely altered.

2. A young woman has prolonged bleeding from the uterus. On account of her age the surgeon hesitates to perform a hysterectomy. He cures the uterus, however, and in the scrapings the pathologist finds carcinomatous tissue. The surgeon at once performs a hysterectomy.

3. The surgeon obtains a history of gastric trouble, and at operation the stomach appears to be cancerous. The neighboring lymph glands are enlarged. On examining these glands microscopically there are marked inflammatory changes present, but no evidence of malignancy is seen. If the area in the stomach after wide excision shows no evidence microscopically of malignancy, the prognosis and treatment will be determined by the pathologist's report.

Statistics from the Mayo Clinic based on 14,167 operative cases of all kinds show that a microscopic examination is necessary in 20 per cent. of the cases.²

If the statistics are limited to cases which are sufficiently difficult to necessitate the removal of tissue for diagnosis, the percentage of these cases in which the microscope must be resorted to may rise as high as 83.³

PROPER CONDITIONS

In order that the diagnoses on frozen sections may be reliable, four conditions should be realized:

1. The pathologist should be well trained in pathology, and in addition should be specially trained in the technic of cutting, staining and diagnosing frozen sections. In this work he should have had extensive experience.

2. There should be perfect cooperation between the clinician and the pathologist. The pathologist, in advance of his examination of the surgical specimen, should have full and free access to all the clinical data on the patient.

3. As often as possible the pathologist should be present at the operation and should receive the whole, unfixed specimen immediately after its removal from the patient. This specimen he should at once section in the gross in the laboratory nearby and, if a microscopic examination is necessary, he should select for this examination the part which his experience shows is most likely to be the best for his purposes.

* From the Department of Pathology, Vanderbilt University Medical Department.

* Read before the Section on Pathology and Physiology at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Erlanger, Joseph; Jackson, C. M.; Lusk, Graham; Thayer, W. S., and Vaughan, V. C.: An Investigation of Conditions in the Departments of the Preclinical Sciences, J. A. M. A. 74: 1117 (April 17) 1920.

2. MacCarty, W. C.: J. Lab. & Clin. Med. 4: 687 (Aug.) 1919.

3. MacCarty, W. C.: Minnesota Med. 1: 178 (May) 1918.

4. He should have an excellent stain for his work. Unna's polychrome methylene blue, after ripening, is a very satisfactory stain.

Unfortunately the method of ripening this stain has in the past required from six months to a year⁴ or more. The slowness with which the stain ripens has discouraged its use.

EXPERIMENTAL RIPENING

After seeing last summer through the kindness of Dr. MacCarty how rapidly and beautifully this stain works, I began in the fall a series of experiments to see whether a more rapid method of preparation could be worked out.

My first success was obtained by simultaneously aerating and stirring the solution mechanically at room temperature for ten hours a day for three weeks. By this means I secured 2.5 liters of excellent stain, and this stain is still good.

Later I found that I could dispense with both the mechanical stirring and the aeration, and could ripen the stain three times as quickly if I raised the temperature of the stain to 37.5 C. To make this stain I now place in a clean Petri dish 0.5 gm. of methylene blue (Bausch and Lomb), 0.5 gm. of potassium carbonate (Merck), and dissolve these in 50 c.c. of distilled water. The Petri dish is then left uncovered in an incubator regulated to 37.5 C. Each day the water lost by evaporation is made up by the addition of distilled water.

Under these conditions, each of the last twelve batches of stain has ripened satisfactorily in six days. The stain is tested on the sixth day on a frozen section of unfixed tissue. A piece of uterus is an excellent test object. The stain is regarded as satisfactory if all the nuclei are very sharply stained and if the smooth muscle in the uterus stains a sharp and beautiful purple when viewed by a good electric lamp provided with a daylight filter. If the stain is incubated at 37.5 C. for nine to fifteen days, it becomes rich in purple but stains weakly and unsatisfactorily.

TECHNIC

The technic of using this stain has been described in detail by Dr. Louis B. Wilson,⁴ from whose paper the following six steps are quoted.

1. Freeze bits of tissue, not more than 2 by 10 by 10 mm., in dextrin solution and cut sections 5 to 15 microns thick.
2. Remove the sections from the knife with the tip of the finger and allow them to thaw thereon.
3. Unroll the sections with a camel's hair brush or glass lifter in 1 per cent. sodium chlorid solution.
4. Stain 10 to 20 seconds in Unna's polychrome methylene blue.
5. Wash out momentarily in fresh 1 per cent. sodium chlorid solution.
6. Mount in Brun's glucose medium.

The fresher the tissues, the better the result. "Most failures are due to the fact that the cells are dead before the tissues are frozen."⁴ For many interesting details, Dr. Wilson's paper should be consulted.

ADVANTAGES OF THE METHOD

1. The method is extremely rapid. With the stains I have prepared, the staining is completed usually in from two to three seconds.

2. No preliminary fixation is necessary. This also makes for speed, as a tissue may be frozen as soon as it reaches the laboratory.

3. The unfixed tissue is seemingly more translucent than fixed tissue. This enables one to examine satisfactorily relatively thick specimens. Thicker specimens are more easily cut and handled than are thinner sections.

4 The nuclear stain is exceedingly sharp, and nucleoli are brought out with great distinctness by this method.

5. The stain has excellent differential qualities. This is not so evident in the nuclei as in the cytoplasm and in connective tissue fibrils. Epithelial cells have a somewhat bluish cytoplasm, while smooth muscle fibers are purplish, and the fibrils of connective tissue are faintly stained or take varying shades of red. The hyalinized intima of blood vessels usually takes an intense red, and the matrix of hyaline cartilage may also stain red. Bacteria are often well stained.

6. If properly carried out, the technic of staining frozen sections probably produces less shrinkage and fewer artefacts than are observed in tissues that are fixed and embedded in paraffin.

7. This stain is inexpensive to make and is easily prepared; moreover, it can be used over and over again, if after using it is filtered back into a bottle and the bottle is corked to prevent evaporation.

DISADVANTAGES OF THE METHOD

1. The specimens stained by the polychrome methylene blue method are not permanent. They may be kept a few hours, but in a comparatively short time the epithelial cells go to pieces. Up to the present no satisfactory method of preventing this has been discovered.

2. The method is of very little value in staining tissues that have been fixed in the usual ways. In fixed tissues the staining is not so sharp, and the color effects are less contrasting and less brilliant.

3. The method is also of less value in the diagnosis of tissues that have been out of the body for a long time before being received at the laboratory. Moreover, tissues which are necrotic stain less well by this method than they do after fixation and staining with hematoxylin and eosin.

4. The color effects with the polychrome stain are so different from those with hematoxylin and eosin that one has to become accustomed to the differences before one feels confident of the diagnosis.

SIMPLIFIED TECHNIC

A simpler technic than the one described by Dr. Wilson has given satisfactory results in our hands. Instead of freezing the tissues in dextrin, physiologic sodium chlorid solution or even tap water has been used without obvious disadvantage. Even the washing out of the stain and the mounting of the specimen may be done in Nashville tap water or in physiologic sodium chlorid solution. While not absolutely essential, Brun's glucose solution is, however, probably better for mounting the specimens than either water or sodium chlorid solution. I have not found it necessary to permit the sections to thaw out on the finger before placing in water.

RULES FOR JUDGING MALIGNANCY

In diagnosing malignancy in sections stained by the polychrome methylene blue method, the same

4. Wilson, L. B.: J. Lab. & Clin. Med. 1, October, 1915.

criteria are employed as in determining malignancy in sections that have been stained with eosin and hematoxylin. For details about morphology, invasion, metastases, recurrences, etc., the reader may consult any good textbook. Here I shall refer merely to a few points which I understand are especially stressed by Dr. MacCarty and Dr. Broders when examining fresh tissues stained by the methylene blue method.

MORPHOLOGY

1. Malignant cells depart from the normal in size and shape and often in the appearance of the nucleus. This departure of the malignant cells is in the direction of lack of differentiation. Undifferentiated cells usually have nuclei that are vesicular, round, oval or slightly irregular in shape, and they usually show a single, prominent nucleolus. These are the cells that Dr. Broders calls "one eyed cells." The presence in the specimen of many cells showing these variations in size and shape is suggestive of malignancy. If the variation is sufficiently great, Dr. MacCarty and Dr. Broders regard the cells as malignant. Malignant cells also depart from the normal in their relation to other cells and tissues, and in their greater rapidity of growth.

2. A large number of mitotic figures is suggestive of malignancy.

3. According to Dr. Broders, the presence of hyalinized fibrous tissue around atypical epithelial cells, especially in the breast, is suggestive "of malignancy or of a malignant tendency."⁵

INVASION

Malignant cells break barriers and invade the surrounding tissues. Occasionally benign tumors may invade; for example, angiomatous tumors.⁶ On the other hand, there are instances in which the basement membrane is not broken, and yet glandular cells are completely replaced by undifferentiated cells which correspond in practically every particular with cells which, if they had broken the basement membrane, would be regarded as malignant. MacCarty regards this stage as precancerous;⁷ but as the treatment is that appropriate for early carcinoma, it might be better to label it "early carcinomatous stage." Benign tumors are usually not invasive, and are frequently encapsulated.

Every pathologist who is doing tissue work should be interested in improving the service which he can render. His service should be greater if he masters the frozen section technic and finds that his diagnoses under proper conditions are as accurate with this method as with the more time consuming usual methods. Such pathologists should be in demand and they should be adequately rewarded. Universities will then probably be forced either to raise considerably the salaries of their pathologists, or else to require only part time service.

CONCLUSION

The salaries now paid pathologists by many universities are inadequate to cause many men to take up pathology as a profession. Other fields offer greater rewards. Frozen section work has been discouraged in the past as being unreliable. But those

who use the method most frequently are the most enthusiastic about it. A drawback to the diagnosing of tissues stained after being frozen and sectioned has been the lack of an easily procured, yet satisfactory staining fluid. A comparatively quick method of preparing a good stain is here described and directions are given for its use, as well as some rules for judging malignancy. It is hoped that many pathologists may be induced to try this method, for increasing the pathologist's usefulness is one of the surest ways of increasing his rewards. If pathologists become expert in diagnosing frozen sections they will increase greatly the value of their tissue diagnoses, and it should then be comparatively easy for them to earn salaries greater than universities usually pay.

ABSTRACT OF DISCUSSION

DR. WILLIAM C. MACCARTY, Rochester, Minn.: When I first went to Rochester I found Dr. Wilson's staining method in use and I have seen beautiful sections in paraffin and celloidin stained with this stain. I rarely see a celloidin or paraffin section now. We never make paraffin sections any more except when we want serial sections. We are getting a new idea of pathology from studying perfectly fresh unfixed cells. All our tissues are studied less than two minutes after their circulation is cut off, so they are practically alive when we get them. The sections are kept in isotonic solutions. There is just as much difference between studying tissues under these conditions and under the older conditions of fixation as there is between studying birds in the field and birds in the museum. The pathologist is a great aid to the surgeon and to the patient. You would be surprised to know how many patients demand that a certain pathologist examine their tumors. The layman is becoming educated to the necessity of the pathologist working with the surgeon. He is beginning to select his pathologist just as he selects his surgeon. Not a day passes that we do not render some great service to patients by Dr. Terry's method. I know of no other stain that we can use with the same efficiency. My experience with Dr. Terry's modification in preparing the stain has shown that it is an excellent method of ripening a stain.

DR. BENJAMIN T. TERRY, Nashville, Tenn.: If any one who is interested in trying the stain will send me his name and address, I will send him a sample so that he will not be put to the trouble of making the stain until after he has had an opportunity of testing it. I do not believe, however, that the preparation of the stain will be troublesome if the directions are followed carefully. With slower methods I have had trouble. Occasionally, under those conditions, the stain became infected and subsequently was found to have unsatisfactory staining qualities. With this six day method I have not had a single failure.

Symptoms of Breast Cancer.—The so-called classical symptoms of the textbooks are positively dangerous from the point of view of prognosis. To wait for their appearance is, in many cases, to wait till the disease is well-nigh incurable. The early signs of breast cancer are symptomless; the accidental discovery of a lump in the breast is usually the first sign of trouble. Pain is very rarely present at this stage, and here be it noted how extraordinarily difficult it is to convince many women of the very serious nature of a lesion which is causing no discomfort! The only other sign of breast cancer with which I am acquainted is dimpling of the skin of the breast over the tumor; this is never to be seen over nonmalignant tumors unless they have become infected. On the presence of a single hard lump in the breast of any woman over thirty years of age I am prepared to suspect cancer; if the skin dimples over the lump, I believe she has cancer, and that the least possible delay should take place in operating if our patient is to have a permanent cure.—W. Doolin, *Med. Press*, April 28, 1920.

5. Broders: Personal communication to the author.

6. Ewing, James: *Neoplastic Diseases*, Philadelphia, W. B. Saunders Company, 1919.

7. MacCarty, W. C.: *Surg., Gynec. & Obst.*, July 1, 1915, p. 596.

TRAUMATIC ANEURYSM OF THE RIGHT PULMONARY ARTERY *

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AND

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History.—O. O., aged 25, a second lieutenant of infantry, who had served in the army four and one-half years, was admitted to Base Hospital No. 6, A. E. F., France, Sept. 5, 1918, with the diagnosis: perforating gunshot wound in the right chest; double pneumonia. The patient was wounded in action, August 5, with a perforating gunshot wound of the right chest. The field card, Evacuation Hospital No. 6, August 5, stated that a roentgenogram disclosed the right lung opaque with evidence of fluid; that there were signs of hemothorax; that the patient should be kept in the sitting posture, and that morphin should be administered. At Base Hospital No. 15, August 14, roentgenoscopy revealed pleural exudate in the lower right chest with intrapulmonary consolidation, and August 16, left peribronchial pneumonia. The patient entered U. S. Base Hospital No. 6 convalescing from double pneumonia. September 5 he was very thin and was constantly spitting up dark red sputum.

September 25, there was a pulmonary hemorrhage of 6 ounces of bright red blood. Repetition of the hemorrhage seemed to be uncontrollable. Transfusion was performed with temporary relief, but not complete hemostasis.

October 3, physical examination of the chest revealed dulness on the right side, bronchial breathing, and markedly increased whisper fremitus at the extreme right base posteriorly, especially close to the spine. No râles were heard. The heart was in the normal position; all sounds were normal, except for a murmur along the sternum, loudest at the lower end, continuous through systole and diastole and much accentuated with systole. There was no thrill anteriorly. The second sound at the aortic and pulmonary areas was normal, low in the right back at the angle of the scapula. The murmur was very loud, continuous in time with systolic accentuation, and heard loudest near the spine. The murmur sounded like the rhythmic increase and decrease of the roaring of dynamos, and was much louder in the back than in the front of the chest. Immediately after the examination the patient had a small pulmonary hemorrhage. The diagnosis made at that time was a probable arteriovenous aneurysm of vessels of the right lung with engorgement and hemorrhage over the right lower lobe.

November 30, the patient was becoming more anemic. A transfusion of about 500 c.c. was performed.

December 6, there was noted a good result from transfusion. The patient's color was much better. He continued to raise a little blood-stained sputum.

December 12, there was a hemorrhage of moderate severity.

Jan. 2, 1919, roentgenoscopy revealed a spherical area of shadow at the root of the right lung, from 8 to 10 cm. in diameter. January 3, at 3:45 a. m., the patient died suddenly of hemorrhage from the lungs.

Postmortem Examination (January 3).—There was a large aneurysm of the main trunk of the right pulmonary artery 4 cm. beyond the bifurcation of the pulmonary artery. The aneurysm was as large as a medium sized orange. The middle lobe and almost all of the lower lobe of the right lung were obliterated, but some lung tissue containing air in the periphery and especially at the extreme base remained. The valvelike hole from the aneurysm into the bronchus had thickened edges. Trabeculae of tougher tissue made up of obliterated bronchi crossed the aneurysm. The stomach was full of blood. The heart was normal.

COMMENT

This case of traumatic aneurysm of the right pulmonary artery is of interest because of its extreme rarity, the roentgen-ray findings and the type and position of the murmur heard in the back over the

aneurysm. Still another point of interest is the occurrence of the hemorrhages. The first one did not take place until more than a month after the wound; the pressure of the hemothorax may have prevented earlier bleeding from the lung. In all, there were between twenty-five and thirty hemorrhages, varying in amount up to 30 ounces. The hemorrhage was of the emetic type.

Operation was considered but not attempted. Thoracotomy posteriorly with collapse of the lung offered a hope of relief. At Paris, Chutro performed such an operation during the war with satisfactory result.

Traumatic aneurysm of the pulmonary artery or of the right or left main branches is extremely rare. Of course, damage to the pulmonary vessels, usually the smaller arteries or veins, is a common cause of death; but in the medical literature of the war we have found only one reference dealing specifically with traumatic aneurysm of one of the larger branches of the pulmonary artery. Even this was not, however, one of the main trunks. Konjetzny¹ in 1918 described one case—a soldier, aged 21, who suffered severe pulmonary hemorrhage two months after a chest wound and died of meningitis three months after his hemorrhage. Necropsy revealed an aneurysm of one of the branches of the left pulmonary artery.

Pulmonary aneurysms in general are also very rare. In 1906 Henschen² reviewed all the reported cases—forty-six in all, 53 per cent. male and 47 per cent. female—some of them thought to be due to syphilis or infectious disease. The correct diagnosis was made during life in only one or two of these cases. As a matter of fact, some of these cases were not saccular, but general dilatations of the pulmonary artery associated with a patent ductus arteriosus and so were essentially of congenital origin.

Since 1906, ten more cases of aneurysm of the pulmonary artery or of its main branches have been reported, one each by Genersich,³ Durno and Brown,⁴ Reiche,⁵ Ploeger,⁶ Entz,⁷ Zak,⁸ Nikolayeff,⁹ Warthin,¹⁰ Boinet,¹¹ and Konjetzny.¹ Of these cases, three showed also a patent ductus arteriosus. Nikolayeff⁹ gave figures of 271 cases of mediastinal aneurysms, among which were only two of aneurysm of the pulmonary artery. Warthin¹⁰ reported the first case of pulmonary aneurysm in which *Spirochaeta pallida* was found in the wall of the artery and in the aneurysmal sac.

At the Massachusetts General Hospital, among 3,500 necropsy cases in the twenty years from 1896 to 1915, there were forty cases of aortic aneurysm, six of cardiac aneurysm, two of aneurysm of the cerebral artery, and one each of aneurysm of the coronary artery, innominate artery, celiac axis, splenic artery, and femoral artery. There was no case of aneurysm of the pulmonary artery.

SUMMARY

In a case of traumatic aneurysm of the right pulmonary artery, the patient died of hemorrhage five months after the wound.

Fifty-six cases of aneurysm of the pulmonary artery or of its main branches have hitherto been reported, only one of which was of traumatic origin.

1. Konjetzny: Mitt. a. d. Grenzgeb. d. Med. u. Chir. **30**: 671, 1918.
2. Henschen: Samml. klin. Vortr. (Volkman's), 1906, Nos 422-423.
3. Genersich: Orvosi hetil. **51**: 614, 1907.
4. Durno and Brown: Lancet **1**: 1693, 1908.
5. Reiche: München. med. Wchnschr. **56**: 2166, 1909.
6. Ploeger: Frankfurt Ztschr. f. Path. **4**: 286, 1910.
7. Entz: Pest. Med. Chir. Presse **47**: 293, 303, 1911.
8. Zak: Wien. med. Wchnschr. **62**: 1128, 1912.
9. Nikolayeff: Russk. Vrach **15**: 249, 1916.
10. Warthin, A. S.: Am. J. Syphilis **1**: 693 (Oct.) 1917.
11. Boinet: Marseille méd. **55**: 115, 1918.

* From the Massachusetts General Hospital.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

POLLEN EXTRACTS-ARLCO.—Liquids obtained by extracting the proteins from the pollen of various species of plants.

Actions and Uses.—See general article, Pollen Extract Preparations, New and Nonofficial Remedies, 1920, p. 226.

Dosage.—See general article, Pollen Extract Preparations, New and Nonofficial Remedies, 1920, p. 226. Each of the Arlco products listed below is marketed in sets of four vials representing graduated concentrations, viz., 1:10,000, 1:5,000, 1:1,000 and 1:500, respectively; also in concentrated solution in capillary tubes for diagnostic tests, each tube containing sufficient for one skin test. For hospital use, the diagnostic solution is supplied in 1 Cc., 2 Cc. and 3 Cc. containers.

Aster Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the aster (*Aster multiflorus?*).

Birch Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the birch (*Betula populifolia*).

Cherry Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the cherry (*Prunus species*).

Clover Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the clover (*Trifolium species*).

Corn Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the corn (*Zea mais*).

Dahlia Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the dahlia (*Dahlia variabilis*).

Daisy Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the daisy (*Crysanthemum leucanthemum*).

Dandelion Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the dandelion (*Taraxacum officinale*).

Dock Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the dock (*Rumex acetosella*).

Elm Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the elm (*Ulmus americana*).

Goldenglow Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the goldenglow (*Rudbeckia laciniata*).

Goldenrod Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the goldenrod (*Solidago species*).

Hickory Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the hickory (*Carya alba*).

June Grass Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the June grass (*Poa pratensis*).

Locust Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the locust (*Robinia pseudacacia*).

Maple Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the maple (*Acer rubrum*).

Narcissus Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the narcissus (*Narcissus species*).

Oak Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the oak (*Quercus species*).

Orchard Grass Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the orchard grass (*Dactylis glomerata*).

Poplar Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the poplar (*Populus balsamifera*).

Poppy Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the poppy (*Papaver somniferum*).

Ragweed Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the ragweed (*Ambrosia trifida*).

Ragweed Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the ragweed (*Ambrosia artemisiacifolia*).

Red Top Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the red top (*Agrostis alba*).

Rose Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the rose (*Rosa rugosa*).

Rye Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the rye (*Secale cereale*).

Sunflower Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the sunflower (*Helianthus annuus*).

Timothy Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the timothy (*Phleum pratense*).

Walnut Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the walnut (*Juglans nigra*).

Willow Pollen Extract-Arlco.—A liquid prepared by extracting the proteins from the pollen of the willow (*Salix fragilis*).

Pollen Extracts-Arlco are prepared by the method of Walker (Am. Jour. Med. Science 157:409, 1919): To 0.5 gm. of the dry pollen are added 44 Cc. of sterile physiologic sodium chloride solution and the mixture is shaken thoroughly at frequent intervals for twenty-four hours. Sufficient absolute alcohol (6 Cc.) is then added to make the alcohol content 12 per cent. The mixture is thoroughly shaken at frequent intervals for twenty-four hours, after which it is centrifugized at high speed and the supernatant fluid is drawn off with a pipet. This liquid, therefore, consists of the pollen protein dissolved in a 12 per cent. alcoholic physiologic sodium chloride solution and it represents, by weight, 1 part of pollen in 100 parts of solvent. This 1 in 100 solution is used as stock and from it other dilutions, such as 1 in 500, 1 in 1,000, 1 in 5,000 and 1 in 10,000 are made. Cresol is added as a preservative.

ANTIPNEUMOCOCCUS SERUM (See New and Non-official Remedies, 1920, p. 269).

Lederle Antitoxin Laboratories, New York.

Antipneumococcus Serum (Polyvalent) (Lederle), Types I, II and III.—Prepared by immunizing horses (in cycles) with dead and living pneumococci of the three fixed types (Types, I, II and III) and standardized against Type I culture according to Hygienic Laboratory method. It is of the same strength with regard to Type I as Type I serum and in addition contains antibodies against Type II and III; tricesol, 0.35 per cent., is added as preservative.

Marketed in double ended vials containing 50 Cc. each, with sterile needle and tubing for intravenous injection; also in bottles containing 100 Cc.

PERTUSSIS BACILLUS VACCINE (See New and Non-official Remedies, 1920, p. 285).

Gilliland Laboratories, Inc., Ambler, Pa.

Pertussis Bacillus Vaccine-Gilliland.—Prepared from several strains of Pertussis Bacillus (Bordet-Gangou) grown on blood agar. The killed bacterial emulsion is suspended in physiological solution of sodium chloride; three cresols, 0.25 per cent., is added as a preservative.

Marketed in packages of four syringes containing 250, 500, 1,000 and 2,000 million killed bacteria, respectively; in packages of four ampules containing 50, 500, 1,000 and 2,000 million killed bacteria, respectively; also in 5, 10 and 20 Cc. vials containing 2,000 million killed bacteria per Cc.

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SATURDAY, JUNE 26, 1920

THE PHYSIOLOGIC SIGNIFICANCE OF HUMAN MILK

When an infant is deprived of mother's milk, it is robbed of its birthright. There is no ideal substitute. The claims for the superiority of woman's milk in infant nutrition have been reechoed by almost every one who has devoted attention to the problem. But, in the attempts to explain the greater excellence of a secretion which in many respects resembles closely the composition of cow's milk, one may find marked diversity of opinions. The statement that the mammary glands have been evolved primarily to make a food that is best suited for rapidly developing human beings will not satisfy a scientific inquirer. Teleology should have a basis of fact as well as of good intention.

Some writers have ascribed the lesser excellence of cow's and other animal milks in comparison with mother's milk to a vague "foreign" character of the former. They are believed to be ill "adapted" to the human organism, producing objectionable reactions in the body, as "foreign" proteins are nowadays said to do. The proteins, in particular, entering into the artificial feeding of infants have been charged with being poorly digested. Cow's milk is far richer than human milk in proteins and casein in particular. The relative preponderance of lactalbumin in human milk is well known. Even admitting a possible difference between human casein and cow's milk casein, the majority of pediatricians will probably contend that the digestive apparatus of the healthy infant is equipped to digest properly the proteins from both species of animals. The occurrence of casein curds in the stools, about which so much has been written, is presumably a symptom of inadequacy of the individual rather than inherent unfitness of the food. Edelstein and Langstein¹ have summarized the matter by stating that normally there is no fundamental difference in the digestion of cow's milk proteins and human milk proteins by infants.

The assumption of indefinable or as yet undefined biologic or immunologic properties in human milk which peculiarly adapt it to the use of the species entails too much that is vague and intellectually intangible to be seriously considered. Digestion, which destroys the integrity of the food molecules and breaks them into comparatively simple fragments before absorption, must necessarily alter, if it does not entirely abolish, any larger structural basis which might be responsible for specific immunity or biologic advantage. Chemical investigation, however, has shown that lactalbumin, in which human milk abounds, is discoverably unlike its companion protein casein, which predominates in the cow's mammary secretion. The comparative yield of some of the indispensable amino-acids is quite unlike for these two types of proteins. Correspondingly, Osborne and Mendel,² in feeding experiments on small animals, have demonstrated that casein and lactalbumin have an unlike nutritive value, growth being more efficient on lactalbumin fed in equivalent amounts under otherwise unchanged dietary conditions.

This superior nutritive efficiency of lactalbumin has now been verified in an elaborate series of experiments by Edelstein and Langstein¹ in Charlottenburg. They determined for the first time the protein minimum and relative nutritive value of the nitrogen furnished as cow's milk, woman's milk, lactalbumin and casein, respectively, and established an advantage for lactalbumin and that type of milk—human milk—in which it abounds. The outcome is not a result of superior solubility or digestibility of different milk proteins. The advantage of the lactalbumin lies in its chemical make-up, as Osborne and Mendel have contended, whereby it supplies to better advantage than casein that relative proportion of amino-acid structural units needed in the growth of the infant. From this standpoint, Edelstein and Langstein remark, the peculiar proportions of albumin and casein in human milk deserve special consideration. We must shift our attitude from the contemplation of possible detrimental features of cow's milk proteins to superior merits of the human analogues. In this way we may perhaps sooner attain the ultimate end, foretold by Underhill,³ of assigning more or less specific functions to the various amino-acids, and indirectly indicating the relative efficiency of this or that protein in bringing about a desired result in nutrition.

Although human milk contains much less protein (though of perhaps superior nutritive quality, as indicated above) than does cow's milk, it furnishes considerably more lactose. Mathews⁴ does not hesitate to correlate the greater proportion of lactose in human

1. Edelstein, F., and Langstein, L.: Das Eiweissproblem im Säuglingsalter, experimentelle Untersuchungen über die Wertigkeit der Milcheiweisskörper für das Wachstum, *Ztschr. f. Kinderh.* **20**: 112 (Aug.) 1919.

2. Osborne, T. B., and Mendel, L. B.: A Quantitative Comparison of Casein, Lactalbumin and Edestin for Growth or Maintenance, *J. Biol. Chem.* **26**: 1 (Aug.) 1916.

3. Underhill, F. P.: *The Physiology of the Amino-Acids*, New Haven, Yale University Press, 1915, p. 158.

4. Mathews, A. P.: *Physiological Chemistry*, New York, William Wood & Co., 1915, p. 307.

milk with the vastly greater brain development of human beings early in life. The myelinization of fibers in the brain requires galactose, yielded by lactose and seemingly formed only in the mammary gland. Let us bear in mind, however, that this view is mere hypothesis. A discussion of the lactose problem would soon bring us into troubled waters; but we believe that here, too, experimental science can find a way out into a place of clearer understanding.

INFLUENCE OF THE MALE IN THE PRODUCTION OF TWINS

The frequency of the appearance of twins in a family unquestionably has a hereditary aspect. It has been assumed, however, that inheritance from the paternal side can play little if any part in the tendency toward the birth of twins. As most of the latter represent plural births resulting from twin labors following double ovulation in the mother, it seems at first thought almost impossible that the father should exercise any influence in determining the twin production. There are, of course, cases of identical twins arising from a single egg by an early fission of the embryonic blastodisk, and these might be affected by paternal influence so far as the sperm cell as well as the egg cell might carry the tendency to twin-producing fission of the ovum. But the common view assumes that two-egg twins are due to simultaneous bursting of two graafian follicles, while single births result from rupture of a single ovum-discharging follicle. An effect of male hereditary tendencies in determining the number of such twins would therefore seem to be excluded.

Statistics collected by Davenport¹ of the Station for Experimental Evolution at Cold Spring Harbor, L. I., upset these seemingly logical assumptions. The data indicate that, from the hereditary standpoint, the father has about as much influence in the production of the twins as the mother. In explanation of this, Davenport points out that there is a good deal of evidence that single births are not always the consequence merely of the bursting of a single follicle. He emphasizes that there are several other factors that determine a single birth, such as the failure of one of two simultaneously expelled eggs to be fertilized, or the inability of one of two simultaneously expelled fertilized eggs to develop to maturity. If it should turn out that two eggs are ovulated more frequently than is at present recognized, the comparative rarity of twin births in woman might be due either to failure of fertilization or to failure of development of more than one egg.

On such possibilities the fathers may have an influence in relation to the production of twins. As Davenport interprets it, families that readily produce twins do so not only because in the mother the eggs were laid in pairs, but also because in the father the sperm is

active, abundant and without lethal factors, so that the number of eggs fertilized and brought to full term approaches a maximum.

Lethal factors probably play a more important part in relation to human germ cells than is commonly assumed. Failure of development is not an uncommon phenomenon in genetics. The number of corpora lutea in mammals that have large litters is usually greater than the number of embryos in the uterus. In gynecology, blighted twins are not unknown. It is stated¹ that in a fairly large proportion of all twin births, one of the twins has remained at a stage of development of the third, fourth, or even earlier month. The fetus is often compressed and flattened (papyraceous twin). The number of blighted twins that have been referred to in the literature amounts to several score, but naturally this is a very small proportion of the whole. As Davenport further recites, a record is made only of the larger blighted fetuses; the others are entirely overlooked, since search is rarely made for undeveloped embryos in the afterbirth, and the birth is consequently regarded as a single one. If he is correct in this, we may assume with him that a certain proportion, perhaps a large proportion, of fraternities that show two or three twin labors interspersed with single labors are those in which pairs of eggs have been ovulated in each case, but one of the pair has failed to develop, either through failure of fertilization or through early blighting.

PRIMARY POLYCYTHEMIA

Polycythemia—an increase in the number of red corpuscles or in the amount of hemoglobin per unit of blood volume—is not a rare clinical condition. True polycythemia should, of course, be carefully distinguished from relative increases in erythrocyte count due to concentration of the blood such as occurs after marked losses of fluid by copious diarrheas, profuse perspiration, or large localized edemas. In the latter conditions there is no absolute increase in the number of red cells, but merely a reduction in the amount of plasma in the circulation. A true polycythemia is likely to arise as the result of a comparative deficiency in oxygen in the respired atmosphere; hence its common occurrence at high altitudes, as has often been pointed out in *THE JOURNAL*. An increased number of red blood cells is frequently observed in the cyanosis of congenital heart disease. In all such instances the increment in pigment-carrying cells is evidently dependent on other pathologic or environmental changes, and therefore the designation of secondary or symptomatic polycythemia has been applied to the cases in question. In another group of persons, on the other hand, similar blood changes occur for which the cause is not so clearly established. They have been described as primary, essential or cryptogenic polycythemias. In exceptional cases, counts of red blood cells totaling 15 million per cubic millimeter

1. Davenport, C. B.: Influence of the Male in the Production of Human Twins, *Am. Naturalist* 54: 122 (March-April) 1920.

have been recorded, the hemoglobin being increased up to 26 gm. or over. This is true in so-called erythrocytosis megalosplenica, the malady brought into prominence by Vaquez in 1899 and Osler in 1903.

The pathogenesis of primary polycythemia (polycythemia rubra vera) is not yet known. It is evident that the number of corpuscles existing at any moment in the blood must represent a balance between factors of erythrocyte formation and destruction in the organism. Both processes are believed to be going on more or less continually in some degree in the body. Heretofore most attempts at an explanation of polycythemias have been concerned with the hematopoietic aspects. Thus, polycythemia has been attributed to a hyperplasia and hyperfunctioning of the bone marrow, and in fact vivid purple marrow has been described as an anatomic finding in certain characteristic cases. Another explanation, however, is likewise within the range of pathogenic possibilities. It is conceivable that the erythrocytes, formed without undue function in the bone marrow, are somehow protected from the ready destruction that is the usual fate of circulating red blood cells. This is the conclusion that Herrnheiser¹ has adopted from the study of a new patient in von Jaksch's clinic at Prague. There was no occasion to assume the existence of a stimulation of the marrow, whereas an examination of the erythrocytes gave some reason to conclude that there was a decreased destructibility of the red cells. Hence in Herrnheiser's case, at least, upset in the balance between production and destruction of cells was believed to be determined by an unusual conservation factor under conditions of normal hematopoiesis.

We must frankly admit ignorance as to the real determining factor in these polycythemias. Splenic tuberculosis has been abandoned as a probable cause of Vaquez-Osler's disease. Hyperplasia of the erythroblastic bone marrow has been accepted as a more probable pathogenic agency by some writers. Now we are asked to consider the possible rôle of decreased destruction of blood cells in producing a high absolute cell count. Perhaps each explanation may be applicable to certain cases so that true polycythemia is not attributable to a single causative process. For therapy it is not a matter of indifference as to which explanation is correct. If the marrow alone is involved, roentgen-ray treatment may give the best results. In several instances recorded it seems to have been helpful, as it is at times in improving conditions attending leukemia. But if the marrow is to be excluded from etiologic consideration, perhaps recourse to bleeding would offer a better prospect of relief. Hemorrhage has accordingly been tried with alleged advantage. Here, as so often, rational therapy awaits the determination of the exact cause or causes of symptoms that demand relief.

PHYSIOLOGIC EFFECTS OF EXERCISE IN THE TROPICS

Under ordinary environments, the human body engaged in physical exercise protects itself against undue changes of temperature by certain well known physiologic mechanisms. Muscular activity liberates heat in large amounts. The tendency to become overheated from this is averted by increased surface blood flow, increased perspiration, and, under favorable conditions, to a certain extent by the deepened breathing, which removes heat from the organism by warming the expired air and saturating it with aqueous vapor. Despite these protective devices, the adjustment to normal is not instantaneous or perfect. Exercise temporarily affects the pulse rate, blood pressure and body temperature in ways that have often been described. Indeed, the adequacy and promptness of the corrective responses to exercise are often taken as criteria of the efficiency of the circulatory apparatus of patients.

In the tropics, the added unusual environmental factors of a hot climate, often including great humidity, place a further task on the physiologic devices for counteracting the heat produced through exercise. How well and in what ways are these trying conditions met? There have been a number of investigations of the effects of heat and humidity on exercise, but they have for the most part been conducted under experimental conditions in temperate climates. Whether prolonged residence under the trying conditions of a humid tropical atmosphere would alter the physiologic performances is by no means clearly ascertained. A group of physiologists¹ working in the Australian Institute of Tropical Medicine at Townsville have made important records bearing on the subject. The climatic conditions during the hottest months of the year were essentially like those at Calcutta, the dry-bulb temperature standing between 80 and 90 F. with a highly saturated atmosphere. Vigorous exercise of short duration caused an increase in the pulse rate and blood pressure, both of which fell rapidly to the normal as in temperate climates, after discontinuation of the work. The corrective response to prolonged exercise was characterized by profuse sweating, so that very considerable losses of water often ensued. It was a quite common occurrence to lose as much as 1 kg. (2½ pounds) in weight during an hour's walk at a moderate pace; and even as much as 3.2 kg (7 pounds) might be lost in the course of a two hours' walk. The water eliminated under such conditions is derived almost entirely from tissues other than the blood, so that no pronounced concentration of the latter occurs. Otherwise, serious results might ensue.

Even in temperate zones, vigorous exercise may bring about a transient rise in body temperature. In Townsville, prolonged but mild exertion, such as walk-

1. Herrnheiser, G.: Polycythaemia rubra vera, *Deutsch. Arch. f. klin. Med.* **130**: 315 (Oct.) 1919; abstr. *J. A. M. A.* **74**: 1549 (May 29) 1920.

1. Young, W. J.; Breinl, A.; Harris, J. J., and Osborne, W. A.: Effect of Exercise and Humid Heat on Pulse Rate, Blood Pressure, Body Temperature, and Blood Concentration, *Proc. Roy. Soc., London (B)*, **91**: 111 (Jan. 1) 1920.

ing during the hot hours of the day, caused higher rectal temperatures, often amounting to 2 or 3 degrees Fahrenheit. The increase was more marked during the first part of the exercise than later. Hence, in contrasting conditions in the tropics with those obtaining elsewhere, the Australian observers remark that both exercise and humid heat play a part in producing a rise in blood pressure, pulse rate and rectal temperature. The degree of rise, however, is controlled by atmospheric conditions which influence the rate of cooling of the body.

Current Comment

HEREDITY AND ACQUIRED DEFECTS

According to the current theories of heredity there is a "physical continuity of the germinal material from generation to generation." Hereditary characteristics of the germ cells are not created anew in each generation; they are racial. To what extent, if any, what has been termed the morphology of inheritance can be altered or influenced in any one generation has been the subject of much discussion. Can acquired characters be inherited? In other words, can the environment seriously modify the fundamental features of the development of an individual so that new potencies or structural peculiarities will be permanently introduced into the race? There was a time, not long ago, when the possibility of altering the hereditary factors in the germ cells was accepted more readily than it has been in recent years. Mutilations of the body are not transmitted as new characters. Amputations of the tail in dogs or removal of the horns in cattle in successive generations have not brought about a tailless or hornless race. On the other hand, there are growing numbers of instances in which damage to the germ cells through an improper composition of the blood and tissue fluids which bathe them may lead to transmissible defects of the offspring. This has been shown experimentally as the outcome of intoxication with alcohol and by lead salts. A unique further illustration that the blood can convey modifying influences to the germ cells has been furnished by the investigations of Guyer¹ and his associates at the University of Wisconsin. They have reasoned that if the serum of one species of animal can be so sensitized to a given tissue or tissues of another species that it will become toxic or lytic for the tissue in question, it may be that there is sufficient constitutional identity between the mature substance of the tissue and at least some of its material antecedents in the germ that the latter may also be influenced specifically by the sensitized serum. This is, indeed, the case. When pregnant rabbits were injected with serum of an animal sensitized to rabbit-lens, antenatal lens defects appeared in the offspring. Opaque (and sometimes liquid) lenses and eyes otherwise defective were found. The effect of the lens-sensitized serum was specific; for the eye defects were

never observed in offspring of parents injected with serum sensitized to rabbit tissues other than lens. More significant, however, is the added fact that the defect once secured in the way mentioned may be transmitted to successive generations through breeding. In Guyer's experiments it has already been passed to a sixth generation. There is not merely a placental transmission of antibodies or other lens-damaging factors. The heredity of the acquired defects has been demonstrated by transmission through the male line, normal females being mated with defective eyed males. As Guyer and Smith remark, since the defect can thus be made to reappear in the descendants of a male with abnormal eyes when he is mated to a female from unrelated and untreated stock, it is obvious that it could have been conveyed only through the germ cells of the male, and that it may, therefore, be pronounced an example of true inheritance. We suspect that some of the current beliefs on the stability of good stock and the impossibility of damaging it through acquired blood changes will require revision in the near future.

ARTEFACT "SPIROCHETES"

The search for spirochetes in material taken for both experimental and diagnostic purposes from supposedly infected individuals is no longer an uncommon procedure confined to specialized laboratories. Dark field examinations for these significant micro-organisms are nowadays frequently made under a variety of conditions and circumstances. It is important, therefore, that all who are accustomed to work in this domain of microscopy should be made aware of the possible sources of error. For this reason, attention is directed to the recent warning by Eberson¹ of St. Louis regarding the appearance of artefacts—extremely tenuous, filamentous forms resembling *Spirochaeta pallida* in motility and spiral structure. Investigation disclosed that they are derived from the red corpuscles, may be produced at will, and bear no relationship whatever to the organism of syphilis. Apparently, earlier observations of them without a real appreciation of their accidental origin have given rise to the suspicion that these artefacts were possible stages in the complete development of *Spirochaeta*. Eberson's experiments seem to make it clear beyond question, however, that influences, such as H-ion content of solutions, tonicity and transfer from the usual environment, are sufficient for the demonstration of the phenomenon, and that the newly described bodies have nothing whatever to do with the life-cycle of the specific agent in syphilis.

1. Eberson, Frederick: "Spirochetes" Derived from Red Blood Corpuscles, Arch. Dermat. & Syph. 38: 638 (June) 1920.

Lowering Infant Mortality by Better Obstetric Teaching.—The teachers in midwifery at the medical schools should remember that if the suffering and mortality of childbirth is to be ameliorated, not only must the teaching of the medical student be improved, but also that of the midwife. The blame for the present large mortality and morbidity of childbirth cannot be laid solely at the door of the doctor or of the midwife; they are both involved, and no one who knows the facts could say that improvements in the teaching of both are not urgently called for.—*Lancet*, Dec. 13, 1919.

1. Guyer, M. F., and Smith, E. A.: Transmission of Eye-Defects Induced in Rabbits by Means of Lens-Sensitized Fowl-Serum, Proc. Nat. Acad. Sc. 6: 134 (March) 1920.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Chinese Doctor Convicted.—It is stated that T. Wah Hing, a Chinese herb doctor of Sacramento, was recently convicted of practicing in violation of the state medical act.

Fined for Practicing Without a License.—Rose Trattner of Los Angeles was fined \$300 and given a ninety days' suspended jail sentence for practicing medicine without a license.

Chiropractors Convicted.—It is reported that on May 12, Frances J. Freenor and Simon Mueller, chiropractors, were convicted at San Francisco for practicing medicine without licenses.

Osteopaths Exceed Rights.—According to report the health officer of Stockton has refused to honor a death certificate filed by J. C. Rule, an osteopath, showing that a 10 year old "infant" died after an operation for peritonitis and appendicitis. The health officer holds that an osteopath has no right to perform such an operation.—The certificate of Dr. William T. Harlan, an osteopath of Arbuckle, was revoked on the ground that he had used drugs and written prescriptions, which the certificate to practice osteopathy does not permit.

GEORGIA

New District Officers.—At the annual meeting of the Twelfth District Medical Society, held in Swainsboro, June 9, Dr. Edward B. Claxton, Dublin, was elected president, and Dr. Thomas E. Blackburn, Swainsboro, vice president. It was decided to hold the next meeting at Wrightsville, December 2.

License Revoked.—The Georgia State Board of Medical Examiners, June 10, revoked the license of Philip Dymont, now of Pasadena, Calif., on the grounds that Dymont did not graduate from the Homeopathic Medical College of Missouri in 1891 or in any other year and that he had a substitute take the examination for him. The evidence showed that Dymont was neither a graduate nor had he ever been a student at the college named. Evidence further showed that Dr. L. G. Wright of Chicago had written the examination before the Georgia board in 1914 by which Dymont's license had been granted. A year later Dymont obtained a license in California through reciprocity with the Georgia board. The fraudulent nature of the credentials was discovered through data on file with the Council on Medical Education of the American Medical Association.

ILLINOIS

Personal.—Dr. C. Cartledge of the University of Chicago has been appointed assistant professor of chemistry at Johns Hopkins University, Baltimore.—Dr. Downs, Bloomington, was assaulted in his office, May 22, by two men to whom he had refused to issue a prescription for liquor.

College Commencement.—At the commencement exercises of the College of Medicine of the University of Illinois, June 16, a class of forty was given the degree of Doctor of Medicine. Dr. David Kinley, president of the university, conferred the degrees and delivered an address on "Some Questions in Medical Education."

Work on Sanatorium to Begin at Once.—Reconstruction of Edward Sanatorium, Naperville, which was destroyed by fire in February, is to be started at once. Although the entire amount necessary for the rebuilding of the institution has not been obtained, a sufficient sum has been realized to permit the reconstruction work to be entered on at once.

Campus for Professional Schools.—A site for the erection of the new schools of medicine, dentistry, commerce and law of Northwestern University, Chicago, was assured, June 15, when the board of trustees voted unanimously to buy the Fairbanks-Farwell tract at Chicago Avenue and Lake Shore Drive. The purchase price is more than \$1,000,000.

Physicians' Club Election.—At the annual meeting of the Physicians Club of Chicago, June 17, Drs. Frank Morton, Edward H. Ochsner, Truman W. Brophy, Joseph A. Capps,

Coleman G. Buford and Ralph W. Webster were elected directors. Prof. Frederick Starr discussed "Mexico of Today"; and at the meeting of the board of directors which followed, Dr. Truman W. Brophy was elected president and Dr. Victor D. Lespinasse was reelected secretary.

INDIANA

Hospital Projects.—The proposed new Methodist Episcopal Hospital at Gary is now under construction, the cornerstone having been laid recently.—At a special election, the project for the erection of a Vermilion County Hospital at Clinton, to cost \$100,000, was carried by a majority of 1,100.

Nurses Graduate at Indianapolis.—At its eleventh commencement the Methodist Episcopal Hospital Training School for Nurses graduated a class of fifty-one nurses, the largest class in the history of the institution.—Eleven nurses were graduated at the recent commencement of the training school of the Protestant Deaconess Hospital, Indianapolis.

MARYLAND

Personal.—Asst. Surg.-Gen. Henry R. Carter, U. S. Public Health Service, Baltimore, has sailed from New York for Peru, where he will take charge of the sanitary forces of the Peruvian government in their effort to stamp out yellow fever. During the past winter, Dr. Carter has been in charge of a Rockefeller Foundation party which combated the disease in the Piura district. His headquarters will now be at Piata, a seaport, where the fever is at its worst, and he will remain in Peru until next January.—Dr. Daniel H. Lawler, U. S. Public Health Service, Baltimore, is under treatment at the Union Memorial Hospital for serious injuries of the spine received when he fell 25 feet into a concrete culvert at Round Bay, June 12.

Immigration Station Turned Over to U. S. Public Health Service.—Immigration Commissioner Gen. Anthony Caminetti recently visited the quarantine station at Fort McHenry, Baltimore, and it has been practically decided that the quarantine site and buildings will be turned over to the U. S. Public Health Service, for a year or longer, instead of being returned to the control of the local bureau of immigration. This solution of the problem was suggested by Commissioner Stump of the local bureau. With virtually no immigrants landing at Baltimore, the annual expenditure of from \$60,000 to \$75,000 would be unjustified. The site was given to the Immigration Service by the War Department in 1913, and shortly afterward Congress appropriated \$550,000 for the erection of buildings. The group was nearing completion when America entered the war and it was at once turned over to the War Department to form part of the U. S. Army General Hospital No. 2 group.

MICHIGAN

Nurses Graduate.—A class of four nurses was graduated at the recent commencement of the Mercy Hospital Training School for Nurses at Jackson.

State Health Law Upheld.—In the damage suit for \$10,000 brought by Nina McCall Rock against Dr. Thomas J. Carney, formerly health officer of Alma, Judge Moinet decided in favor of the defendant, June 4, and the court directed the jury to return a verdict of no cause of action.

Personal.—Major Harry C. Coburn, Jr., M. C., U. S. Army, late commanding officer Base Hospital Unit No. 17 at Harper Hospital, Detroit, was tendered a testimonial banquet recently at the Detroit Athletic Club by officers who were associated with him while on duty at Dijon, France.—Dr. H. B. Markham, Marquette, has been appointed acting assistant surgeon, U. S. Public Health Service, to fill the vacancy caused by the resignation of Dr. Frederick McD. Harkin.—Dr. Guy L. Kiefer, Detroit, has been appointed medical director of the Michigan State Telephone Company, succeeding Dr. Robert B. Hasner.

MINNESOTA

Hospital Items.—Dr. William J. Stock, Hastings, has purchased a building at Pierz and is having it remodeled into a hospital.—A building to house the nurses in the Southwestern Sanatorium, Worthington, is being built at a cost of \$74,000.

Southern Minnesota Physicians to Meet.—The midsummer session of the Southern Minnesota Medical Association will be held at Fairmont, June 28 and 29, under the presidency of Dr. Herbert Z. Giffin, Rochester. The banquet will be held the first evening.

NEW YORK

Personal.—Dr. William A. Groat, Syracuse, has been elected a member of the board of trustees of Syracuse University.—Dr. Alexis Carrel of the Rockefeller Institute, New York City, was awarded the degree of Doctor of Science by Princeton University, June 14.—Dr. Menas S. Gregory, New York City, has been appointed a member of the board of managers of the state reformatory for women, Bedford.

Sanatorium Superintendents Meet.—The annual meeting of the New York State Association of Managers and Superintendents of Local Tuberculosis sanatoriums was held in Syracuse, June 2 and 3. The session of the first day was at the chamber of commerce and that of the second day at the Onandaga Sanatorium. In addition to addresses by Dr. Hermann M. Biggs and Mr. Homar Folks, discussions were held on tuberculosis clinics, county tuberculosis nurses, the standardization of tuberculosis hospitals, necessity of laboratory work, and throat and dental work in tuberculosis hospitals. Resolutions were passed thanking Governor Smith for vetoing the Fearon bill, which would have divested boards of managers of county tuberculosis hospitals of the power to fix the salaries of hospital employees. The state department of health was invited to investigate the incorrigible tuberculosis patients problem with a view to designating a part of some state custodial institution for their care. Drs. John J. Lloyd, Stanley L. Wang and Edwin P. Kolb were appointed a committee to consider the plan of the American Sanatorium Association for standardizing tuberculosis hospitals of New York state. A legislative committee consisting of Drs. H. J. Brayton, John J. Lloyd and Edwin P. Kolb was appointed. Dr. Joseph H. Marshall, president of the board of managers of the Suffolk County Tuberculosis Hospital, was elected president of the association for the ensuing year, succeeding Dr. A. Clifford Mercer, Syracuse. Dr. H. St. John Williams, Dr. Aden C. Gates and Dr. Robert L. Bartlett were reelected secretary, vice president and treasurer, respectively.

New York City

Medical College Commencements.—During the past week Cornell Medical College conferred the degree of Doctor of Medicine on thirty-eight men and thirteen women. The John Metcalf prize for general efficiency in medicine was awarded to Alexander G. Davidson, who led the honor roll. The degree of Doctor of Medicine was conferred on fifty-eight men at Fordham University.

City Accepts Strauss Laboratory.—The board of estimate has accepted the offer of Nathan Strauss to turn over to the city his milk pasteurization laboratory for the benefit of the children of New York on condition that the city provide funds to carry on and extend the work. The board of estimate plans to appropriate \$31,691 to operate the laboratory for the remainder of this year.

Anthrax in Public School.—A student taking a vocational course in brush making at Public School No. 12 recently contracted anthrax. Dr. Frank J. Monaghan, acting health commissioner, has asked the board of education to adopt regulations protecting students from this danger. He has drawn a report of precautionary measures which will be presented to the commissioners of the department of education. The health department has for the present taken charge of all materials used for brushmaking in the public schools.

OHIO

Hospital Construction Postponed.—Owing to the high cost of materials and labor, the construction of the \$500,000 Masonic Home Hospital at Springfield has been indefinitely postponed.

Executive Secretary Appointed.—Mr. Guy M. Wells has been appointed executive secretary of the Academy of Medicine of Cleveland, effective June 7. The work of the executive secretary will include the organization of an information bureau for members of the organization, the increasing of membership among eligible physicians, the publication of a monthly bulletin and cooperation with the state medical association and academies of other cities in legislative and educational matters.

PENNSYLVANIA

Personal.—Dr. Edward Martin, state commissioner of health, has appointed the following officials to genito-urinary clinics: Dr. George S. Armitage, chief at Chester City; Dr. Walter Leonard Lynn, Kingston, Pa., assistant at Wilkes-Barre; Dr. Robert M. Hursh, assistant at Harrisburg, and Dr. Ray M. Alexander, Bolivar, assistant at Reading.

"Cancer Day."—Under the auspices of the committee on cancer of the Medical Society of the State of Pennsylvania, Tuesday, June 22, was set aside as "Cancer Day" for Scranton and vicinity. The object of "Cancer Day" is to increase interest in this disease with especial reference to more frequent early diagnosis and more prompt and efficient treatment. There were operative, demonstrative and diagnostic clinics, as follows: State Hospital, arranged by Dr. Edward A. McLaine, Scranton, and Drs. John S. Rodman, P. Brooke Bland, Edward E. Montgomery, all of Philadelphia; Hahnemann Hospital, arranged by Dr. John L. Peck, Scranton, and Dr. George W. Roberts, New York City; Moses Taylor Hospital, arranged by Dr. Jonathan M. Wainwright, Scranton, and Drs. John G. Clark and John H. Gibbon, Philadelphia. An evening meeting was held in the Y. M. C. A. auditorium at which introductory remarks were made by Dr. Edward Martin, commissioner of health of Pennsylvania, chairman of the meeting; Drs. John G. Clark, Herbert L. Northrup, John S. Rodman, Edward E. Montgomery and Frank J. Osborne, executive secretary of the American Society for the Control of Cancer.

Philadelphia

Tablet in Honor of Dr. Mills.—A tablet in honor of Dr. Charles K. Mills was unveiled at the Philadelphia General Hospital, June 17. Dr. Mills resigned last October after forty-two years' service as chief of the neurologic staff at the hospital. The tablet is of bronze, 48 by 28 inches, with a bas-relief medallion of Dr. Mills' head surmounting it.

Experts Confer on Tuberculosis.—The Henry Phipps Institute, Seventh and Lombard streets, during the week of June 14, was the center of conferences attended by experts in tuberculosis from all parts of the country. Plans were discussed by the executive committee of the National Tuberculosis Association to further the scope of the modern health crusade, which aims to make the child's consideration of its health a part of the classroom program in schools.

University of Pennsylvania Surprises Retiring Provost.—The one hundred and sixty-fourth annual commencement exercises of the University of Pennsylvania were held in the Metropolitan Opera House, June 16. After conferring nine honorary degrees on prominent men, and awarding 863 degrees to members of the graduating class and delivering the annual commencement address, Edgar Fahs Smith himself was granted an honorary degree of Doctor of Medicine by the faculty of the school of medicine and the board of trustees. That action came as a complete surprise to the provost, the members of the graduating class and to many of the faculty. Dr. Smith had just completed conferring the honorary degrees, when Dr. William Pepper, dean of the medical school, announced that his colleagues of the faculty wished to confer the degree of Doctor of Medicine on Dr. Smith.

VIRGINIA

Hospital Sold.—The Hygeia Hospital, Richmond, owned and conducted by Dr. James Allison Hodges for nearly twenty years, has been sold to Dr. John R. Blair. The building is equipped as a general hospital with about forty rooms.

Smallpox.—During the first four months of the year, there were 1,821 cases of smallpox reported in the state with six deaths, as compared with 770 reported cases during the same period of 1919. In February, the disease reached its apex for the season, with 703 cases or nearly 600 more than for the corresponding month of 1919. Wise and Lee counties lead in the number of cases reported.

CANADA

Hospital News.—At present there are in Ontario 11,000 mentally deficient citizens and 8,000 nerve racked war veterans. There are only twenty-three institutions in that province where these patients can be cared for. Work at the new federal government institution near London, Ont., is being pushed rapidly to provide accommodation for them. Its capacity is expected to reach 8,000. It is being constructed on the lines of the Soldiers' Home at Dayton, Ohio.

Health News.—The Women's Labor Party, Hamilton, Ont., has requested that women be employed as inspectors under the department of health.—The federal government has apportioned the grant of \$200,000 for the campaign against venereal diseases approximately as follows: Ontario, \$57,000; Quebec, \$47,000; Manitoba, \$12,000; Nova Scotia, \$10,000; New Brunswick, \$7,000; Saskatchewan, \$15,000; Alberta, \$11,000; British Columbia, \$14,000, and Prince Edward Island,

\$1,900. The payments have been allotted on the basis of population.

Personal.—Dr. Delmar A. Craig, medical superintendent of the Byron Sanitarium, London, Ont., has been made medical consultant on the staff of the Massachusetts-Halifax Health Commission.—Miss Jessie L. Ross, for eight years engaged in public health work, president of the Public Health Nursing Association of Pennsylvania, has been appointed chief nurse of the Massachusetts-Halifax Health Commission, Halifax, N. S. She will reside in Health Center No. 1, being conducted in old Admiralty House, and in addition to directing the public health work from this center will give lectures on public health and tuberculosis nursing and coordinate the practical field service in the course for public health nurses, organized under the auspices of the Red Cross of Nova Scotia and Dalhousie University.

GENERAL

Association for the Study of Epilepsy.—The nineteenth annual meeting of the National Association for the Study of Epilepsy was held in Hosack Hall, New York Academy of Medicine, June 3, under the presidency of Dr. L. Pierce Clark, New York City. The following officers were elected: president, Dr. G. Kirby Collier, Sonyea, N. Y.; vice president, Dr. Joseph J. Williams, Woodstock, Ont., and secretary-treasurer, Dr. Arthur L. Shaw, Camden, N. Y. (reelected).

Bequests and Donations.—The following bequests and donations have recently been announced:

New Orleans Child Welfare Association a donation of \$5,000 by Mrs. Alfred Parker, New York City, in memory of her father, Mr. Leon Fellman.

Charity Hospital, New Orleans, \$37,806.82 for the restoration of the Miles Amphitheater, by the will of Miss Catherine Voss.

Charity Hospital, New Orleans, a bequest of \$5,000 for the hospital and \$1,000 for the ambulance fund, by the will of E. J. Bobet.

Dooley Hospital, Richmond, Va., a donation of \$11,000, by Major James H. Dooley.

The University of Washington, Seattle, \$100,000 to be used for research work in tuberculosis, by the will of Mrs. Frank McDermott, Seattle, Wash.

Grant Hospital, Chicago, \$5,000, by the will of Harry Rubens, Chicago.

Coordination of Child Health Activities.—The American Child Hygiene Association, American Red Cross, Child Health Organization of America, National Child Labor Committee and National Organization for Public Health Nursing have held several conferences with a view to the correlation of efforts, and as a result the council for coordination of child health activities has been organized which will act as an advisory agency with the following objects: to define and develop so clearly their own work that each organization will be working in harmony and cooperation with all the others; to develop new methods which will lead to meeting more effectively some of the special problems still unsolved; and to afford an opportunity for any organization dealing with the health of children to submit its plan or program for suggestions.

LATIN AMERICA

Plague in Mexico.—Two cases of bubonic plague were reported in Vera Cruz, June 18. A suspected case has also been found in Mexico City.

Chile Joins Red Cross League.—The central committee of the Chilean Red Cross Society with headquarters at Punta Arenas has joined the League of Red Cross Societies.

Aid Plague Sufferers.—The American Red Cross, Gulf Division, with headquarters at New Orleans, has volunteered its assistance to bubonic plague sufferers of Vera Cruz, Mexico, and has sent a supply of vaccines and rat traps on a special United States revenue cutter to United States Consul Foster at Vera Cruz.

Medical Societies Organized.—The León Medical Society has recently reorganized, with Dr. L. H. Debayle as president; Dr. F. Berrios, secretary, and Dr. Ecolástico Lara as treasurer. The *Gaceta médica de Nicaragua*, published at León, is the official organ of the society.—The physicians in Granada district of Nicaragua have also recently organized a medical society, with Dr. H. Pallais B. as the secretary.

FOREIGN

Sanitation in Palestine.—The American Zionist Unit, sent by the Zionist organization of America to make the Holy Land a safe place to live in, has taken up the question of malaria, and has practically driven the disease from the

country. Hospitals and clinics have been established in Jerusalem, Jaffa, Tiberias and Safed.

Physicians Marooned in Asia Minor.—Among the medical missionaries marooned in the interior of Asia by hostile tribes are Dr. J. S. Stewart, at Mardin; Dr. Urse Little, at Diarbekr, and Drs. W. H. Bell and Marion Wilson, at Marash.

Red Cross Hospitals in Flanders.—A hospital with a dispensary and accommodation for thirty inpatients is being constructed at Roulers.—At Houthen, an extensive skin clinic has been organized with accommodation for fifty inpatients.—The Werwicq Hospital possesses the only operating theater in the region.—Dispensaries have been equipped in the town hall or school in fifty-three villages in the region.—Four maternity wards have been established: one at Roulers, one at Werwicq, a twelve-patient ward at Peperinghe, and a fully equipped maternity hospital at Ypres.

Rumanian Medical Research Bureau.—The Institutul Medice Legal at Bucharest was established as a morgue by the Rumanian government in 1894, but has undergone constant and careful development since that time and now in point of efficiency is a revelation to men from foreign countries. The institute handles on an average 2,500 bodies a year. The bodies as a rule are claimed by relatives or friends before the expiration of the twelve days, when interment is made at public expense. Students from the medical school attend classes of the institute on two afternoons of each week, and two rooms in the basement contain a complete equipment for necropsy.

Personal.—Dr. H. Violle has been appointed by the League of Red Cross Societies as medical liaison officer between the central committee of the French Red Cross, the League of Red Cross Societies and the French Ministry of Health.—Dr. Massimo Selmo, Rome, has been appointed chief of the department of malaria of the general medical department of the League of Red Cross Societies.—Col. Richard P. Strong, chief medical director of the League of Red Cross Societies, has been unanimously elected to honorary membership in the Serbian Medical Society as an expression of the profound admiration of his scientific achievements, and as a mark of appreciation for the great sympathy which he showed to the Serbian people.—To continue his research on occupational hygiene, Professor Hellpach of the chair of psychology at Karlsruhe has been given an award of 6,000 marks. The exact field he is investigating is the "psychophysics of industrial work" and the "social psychology of organized labor."

Deaths in Other Countries

The cable brings word of the death of Dr. Gustav Zander, Stockholm, aged 85, whose name is known the world over for his system of medicomechanic exercises and apparatus. He began his efforts to correct and prevent curvature of the spine by this means in 1857, and in 1865 founded his private institute for the Zander exercises and apparatus.—Dr. J. de Freitas Pimentel of the Azores islands.

Government Services

Health Conditions in the Army

During the week ending June 11, only two new cases of pneumonia were reported, both from Camp Taylor. Sixteen new cases of malaria were reported, eight from the Southern Department. There were sixteen new cases of measles, of which six were from Camp Meade and four from Camp Dodge. There was one new case of scarlet fever from Camp Meade and one from Fort Logan. Of ten deaths from disease, four were due to tuberculosis and one to pneumonia, a death rate of 3.1 per thousand as compared with 4.0 in the preceding week. Excellent health conditions continue among the American forces in Germany, no deaths being reported during the week.

MEDICAL OFFICERS, UNITED STATES-NAVY, RELIEVED FROM ACTIVE DUTY

MICHIGAN

Benton Harbor—Ryno, C. M.
Grand Rapids—Whalen, J. M.

NEW YORK

Schenectady—Dewey, H. G.

PENNSYLVANIA

Philadelphia—Lewis, P. A.

RHODE ISLAND

Providence—Granger, F. W.

Foreign Letters

MEXICO CITY

(From Our Regular Correspondent)

June 2, 1920.

Plague Epidemic

The sanitary authorities of the port of Vera Cruz have reported recently the occurrence of several cases of suspected plague, and two in which the diagnosis was confirmed. The National Board of Public Health at once took the necessary measures; a well-equipped sanitary detachment was ordered immediately to Vera Cruz, having at its head Dr. O. González Fabela, who is an expert on this subject, having performed the same duty in 1902, when the plague imported from San Francisco invaded the city of Mazatlán. He was also the official delegate of Mexico at the International Plague Conference, held at Mukden several years ago. All land communication with Vera Cruz was immediately stopped, except for sanitary purposes, and all maritime traffic was placed in quarantine after the facts had been reported to foreign sanitary authorities, as required by international conventions. Immediate steps were taken to manufacture prophylactic vaccine, and a large quantity of antiplague serum was ordered from the United States. There were put in force without delay the accepted prophylactic measures, the effectiveness of which was recently demonstrated during the New Orleans outbreak (deratization, isolation, disinfection, etc.). So far, there have been eight cases reported, six of which were fatal. All these patients had the glandular type of the disease, no case having been observed so far of the pneumonic or septicemic type. The federal and local authorities will place at the disposal of the public health department all the funds required, and enforce strictly the necessary measures. As a gratifying sign of Pan-American solidarity, I must mention the fact that the American Consul at Vera Cruz offered, on behalf of the American government, the necessary assistance to combat the disease. His offer was accepted, as might be expected in view of the liberal policy of the new Mexican government.

Opium Smuggling

In a previous letter, mention was made of the fact that the National Board of Public Health had seized large quantities of opium, as traffic in it was considered unlawful, when not intended for medicinal purposes. It was reported afterward that the board intended to extract the alkaloids and use them in the hospitals. The owner of the opium did not agree to this, and taking advantage of the change of government requested that the drug should be returned to him. It was then found that the opium had been sold to some individual in a condition that he should reexport it. The former owner has brought suit against Dr. Rodríguez, who claims in his defense that he followed the instructions of the government. The only thing certain about the matter is that this opium has shipped out of the country.

The Academy of Medicine

Among recent papers presented before the Scientific Research Association, mention may be made of one by Dr. Ocaranza, on Sixto's sign, in which there were copied several paragraphs from an article by the well known poet Rubén Darío entitled, "Don Juan's Inheritance," which shows that the poet was familiar with this sign of hereditary phthisis. Even more interesting was Dr. Perrin's address reporting the result of the investigation carried out last year in this city by Dr. S. B. Wolbach on the pathology and biology of typhus fever. The Harvard pathologist thinks that the vascular and cutaneous lesions produced by this

disease are identical to those caused by the European typhus fever. He also alleges that in the vascular lesions of the Mexican typhus fever he has found an organism morphologically like the germ of Rocky Mountain spotted fever, but different in its grouping and distribution. Wolbach and his co-worker J. L. Tood have proposed for the new parasite the name of *Derma-centorxenus typhi*, on account of its analogy with the spotted fever germ, *Derma-centorxenus rickettsi*. They consider only barely probable that their organism may be identical to *Rickettsia prowazeki*. An article on this subject was published by them in the *Annales de l'Institut Pasteur* (34, No. 3, 1920). Drs. J. J. Izquierdo and Santiago Ramírez have been admitted as members of the academy, the first one in the section on physiology and the second in the section on medicine. Dr. Izquierdo, who is the incumbent of the chair of physiology in the school of medicine, presented a paper on the volume of glucose in the blood, based on sixty personal cases, and Dr. Ramírez, who is the editor of *El Observador Médico*, took for his subject, "The Syphilitic Plea."

Personal

The most recent political events have brought about several changes in the official medical personnel. Dr. Gabriel Malda has become the president of the superior board of public health, and Dr. Alfonso Pruneda the secretary. Dr. Rosendo Amor has become a senator, having been replaced as dean of the school of medicine by Dr. Guillermo Parra. The presidency of the national university, which was abandoned by Lic. Macías, May 7, has been assumed in succession by Lic. Antonio Caso, director of the postgraduate school, Lic. Balbino Dávalos, and finally by Lic. José Vasconcelos, a former secretary of education, and who until recently lived in the United States. Dr. Darío López has become governor of the state of Mexico, and Dr. Castillo Nájera placed in charge of the army sanitary service. The Real Academia de la Historia, de Madrid, has made a correspondent member Dr. Manuel Mestre Chigliazza, former governor of the state of Tabasco and a well known writer. Dr. Tomás G. Pellicer, who recently was Mexican consul at Philadelphia, has returned to this city and opened his office.

PARIS

(From Our Regular Correspondent)

June 3, 1920.

Amenorrhea and Marriage

Should a young girl who has never menstruated marry? This question, often propounded to the practicing physician, invariably proves embarrassing, as brought out recently in an interesting study by Dr. A. Siredey, physician to Paris hospitals.

Although in the majority of cases amenorrhea is caused by functional disorders resulting from general conditions which do not constitute a real obstacle to marriage, this is not true when the suppression of the periods is due to genital malformations absolutely incompatible with the conjugal state. Sometimes hermaphroditism, or more correctly, a sexual defect, is at fault, the greater number of such subjects being in reality members of the male sex. Even though the condition is somewhat rare, it should be considered. Less uncommon anomalies are the following: complete absence of the uterus with rudimentary vagina from 2 to 3 cm. long, or even without vagina. Siredey lays particular stress on the fact that the characteristics of girls with such anomalies may be exceedingly feminine. Therefore a detailed examination should be made by determining the condition of the external genitals, by introducing a sound or uterometer into the vagina in order to determine its depth, by digital rectal exploration with the aid of a

sound in the bladder to make certain that no other organ is interposed between the bladder and the rectum.

One would be tempted to believe that such self-evident facts make the task of the physician easy; for when he has made known to the family the results of his examination the conclusions may be arrived at with sufficient clarity. However, far from meeting unhesitating acceptance, one is often obliged to combat the obstinate desire of the parents to marry off their daughter, even under such circumstances. In fact, it is absolutely necessary to prohibit the marriage of young girls who by reason of physical malformation are unfitted for conjugal life.

In well-formed young girls and women with normal organs, primary radical amenorrhea constitutes less of a real obstacle to marriage, since it does not exclude all hope of maternity, a factor which has been possible of determination. The amenorrhea following such acute diseases as typhoid fever, scarlatina and influenza is certainly compatible with marriage, as it yields to treatment in almost all cases. The amenorrhea of chronic diseases such as tuberculosis, malaria and cancer would not prove prohibitory if one considers only the physiologic side, for one sometimes sees under these unfortunate circumstances conceptions occur, almost invariably aggravating the condition of the mother who brings forth a stillbirth or a wretched being with little vitality, or one burdened with ineradicable defects. Such marriages are undesirable, and the physician should do everything to prevent or at least to postpone them until recovery has taken place. Transitory amenorrhea dependent on endocrine disorders, being serious only when it accompanies myxedema, Addison's disease and other diseases, does not constitute a contraindication except in these conditions. This can be discussed when rational treatment has led to a cure; there is always occasion to anticipate a relapse, and in reality, those with myxedema and Addison's disease have nothing to gain and very little to give in marriage. Young girls with so-called nervous amenorrhea showing thyroid instability, most often do not lose any of their aptitude for marriage. Encouragement of their designs and hopes sometimes suffices to improve their health and to cause disappearance of even the most inveterate troubles. Many of these girls may make splendid spouses and excellent mothers. In the case of those who have at the time dysmenorrhea and irregular menstruation with long periods of amenorrhea, if there are manifest signs of aplasia, it is preferable to do everything possible in order to put off the marriage. Their chances of maternity are very slight, their feeble constitution makes pregnancy very precarious. It should not be forgotten that very often these subjects are victims of congenital defects (syphilis, tuberculosis, etc.) which will be transmitted in a certain measure to their descendants.

Finally, Siredey calls the attention of physicians to the necessity of informing the relatives that in most cases of persistent or prolonged amenorrhea, marriage should not be decided on without apprising the fiancé or his family of the abnormal condition. The most elementary fairness demands this and it is the best means of diminishing the responsibility of the young lady and her parents. To avoid delicate explanations, the relatives are only too glad to entrust this duty to the physician. Siredey thinks that in order to maintain absolutely the principle of professional secrecy, the physician should refuse to make direct explanations to the fiancé or his family. It is sufficient to write to the parents of the young lady, summarily revealing the situation without going into details and giving the basic conclusions on the subject of marriage. The parents are free to communicate the letter to whomever they please. This method of procedure does not violate professional secrecy in the least and gives the desirable guarantees to the interested parties.

American Gift to the Société de Neurologie

At a recent meeting of the Société de Neurologie de Paris, the secretary-general read a letter from Dr. Hugh T. Patrick, Chicago, a foreign corresponding member of the society, in which the writer expressed his admiration for the work of French neurologists during the war and enclosed a check for 10,000 francs to help the society in continuing the publication of its transactions. The society unanimously voted its thanks to Dr. Patrick for his aid to the diffusion of its works, and expressed the hope that he, together with the new American members would attend the next annual Réunion neurologique at which collaboration could be established between neurologists of France and the United States. This reunion will be held July 9-10. Only one subject will be discussed: "The Clinical Forms and Treatment of Syphilis of the Nervous System." The titles of discussions and the names of those who anticipate being present should be communicated to the secretary-general, Dr. Henry Meige, 55 Rue de Grenelle, Paris.

Death of Pamard

Dr. Alfred Pamard of Avignon, a national associate of the Academy of Medicine since 1899, recently died at the age of 83. Dr. Pamard belonged to a long line of surgeons, perhaps unique in the history of France for it dates back to 1697, when Pierre Pamard established himself as physician and surgeon in Avignon and since which time the Pamard family has given Avignon many generations of surgeons and oculists.

LONDON

(From Our Regular Correspondent)

June 5, 1920.

Vital Statistics

The eighty-first annual report of the Registrar-General, for the year 1918, has just been issued. The estimated total civilian population of England and Wales is given as 13,777,100 civilian males and 19,697,600 females. The difference between the sexes is, of course, largely due to the number of men in the army during the war. The marriage rate was 15.3 per thousand, being 1.5 above the low rate in the preceding year (13.8) and 0.1 below the average in the last ten years, 1905-1914, which were unaffected by war conditions (15.4). The birth rate in 1918 was 17.7 per thousand, being the lowest on record. This rate was 0.1 per thousand below that recorded for 1917, and 6.1 below that for 1914, which, particularly, so far as the birth rate was concerned, might be regarded as the last year unaffected by war conditions. Even this large reduction, however, amounting in all to nearly 26 per cent. in 1918 as compared with 1914, is believed to compare very favorably with the experience of other belligerent countries. The provisional figures for 1919 indicate a recovery, showing an increase of 0.8 per thousand. The civilian death rate in 1918 was 17.6 per thousand, being 3.2 above the rate in the preceding year. The increased mortality was due to the epidemic of influenza. Apart from this, the year was one of extraordinary healthiness. The provisional figures for 1919 indicate a fall of about 3.8 per thousand, notwithstanding the continuance of the epidemic into the early part of the year. Infant mortality was 97 per thousand births, being 1 per thousand above the rate in the preceding year, but 10 per thousand below the average of the ten years 1908-1917. It is one of the four lowest rates hitherto recorded. As a result of the influenza epidemic, phthisis and pneumonia showed considerably increased mortality. On the other hand, decreased mortality was recorded for other forms of tuberculosis and diseases of the circulatory system. The remarkable increase in the deaths from tuberculosis in lunatic asylums, to which attention was drawn in

1917, continued in 1918. The deaths attributed to influenza in the year numbered 112,329, and throughout the epidemic 151,447, and the total mortality was estimated as close on 200,000. A table is given showing the annual average number of persons divorced during the last forty-two years. In the period 1876-1880, the total was 554; 1881-1885, 671; 1886-1890, 707; 1891-1895, 744; 1896-1900, 980; 1901-1905, 1,126; 1906-1910, 1,247; 1911, 1,160; 1912, 1,174; 1913, 1,154; 1914, 1,712; 1915, 1,360; 1916, 1,980; 1917, 1,406; 1918, 2,222. The increase in the latter years was no doubt largely due to the war.

The Crescograph

Sir J. C. Bose, the Indian scientist who has attained the distinction of F.R.S. for his experiments in plant life, has demonstrated at the Royal Society an instrument termed the crescograph which magnifies movements 2,000,000 times and demonstrates the growth of plants. Dr. A. D. Waller, F.R.S., the well known physiologist, who has for many years studied plant life, chiefly by electrical apparatus, holds that the effects shown by the crescograph are not vital but occur in dead tissues. At the Royal Society a discussion took place on the subject. By using an apparatus of his own which magnified only 1,000 times, Dr. Waller showed on a photographic plate the effect of electric stimulation on living plants, on plants killed by boiling, and on fiddle-strings. In the actual demonstration the so-called growth movements of Bose were shown with complete success on a fiddle-string, and with rather less success in the case of living and dead plants. In a somewhat animated discussion, the general feeling was that the crescograph was a valuable instrument, and, that, although Dr. Waller had shown by his own method the existence of responses to electrical stimulation in dead tissues closely similar to those which Sir J. C. Bose attributed to growth, he could not shake confidence in the Bose results unless he showed that the movements in fiddle-strings were also arrested by poisons and varied with other factors known to influence the rate of growth. Dr. Waller offered to leave his apparatus at the Royal Society, so that any fellows might themselves make experiments with it. He expressed the hope that Sir J. C. Bose would take a similar course. If that were done, it would be possible to make parallel experiments on the same materials with the two sets of apparatus, and so arrive at the only object of his criticism, the advancement of knowledge. Sir J. C. Bose, who had joined in the discussion, did not accept the suggestion.

Marriages

WILLIAM H. MONCRIEF, Col., M. C., U. S. Army, Washington, D. C., to Miss Ulah Lee Ensley of Covington, Ky, recently.

JAMES A. BETHEA, Major, M. C., U. S. Army, to Miss Margaret Hazel Bostrum of Philadelphia, June 2.

RUF E. ADAMS, Comanche, Texas, to Mrs. L. Gwyn-doyln Williamson of San Antonio, Texas, June 2.

CLYDE SUMNER CULP of Salineville, Ohio, to Miss Helen McLean Thompson of Toronto, Ohio, May 5.

VICTORIA CALLA A. BERGSTROM, Chicago, to Mr. James Francis Hill of New York City, March 8.

WILLIAM CHARLES BRONS, Queens, N. Y., to Miss Mary E. Stanton of Little Falls, N. Y., May 20.

ANDREW ROY MACAUSLAND, Boston, to Miss Katherine Brayton of Fall River, Mass., June 2.

THOMAS WRAY GRAYSON, Pittsburgh, to Miss Mary E. Bard of Meadville, Pa., June 9.

JULIUS FRISCHER, Kansas City, Mo., to Miss Marion Frances Sickel of Chicago, recently.

JOHN BAKER CARSON to Miss Francis Tyson, both of Philadelphia, May 26.

Deaths

John Warren Little ☉ Minneapolis; Jefferson Medical College, 1883; aged 60; president of the Minnesota State Medical Association in 1916; formerly professor of clinical surgery in the University of Minnesota; local surgeon to the Chicago and Great Western Railway; president and one of the founders of Hill Crest Hospital; surgeon to the Asbury and City hospitals; consulting surgeon to St. Mary's and Swedish hospitals; died, June 5.

Stephen Curtis Priest, Newark, Ohio; Eclectic Medical College of Pennsylvania, Philadelphia, 1869; Cincinnati College of Medicine and Surgery, 1877; aged 72; for thirty-three years medical examiner for the relief department of the Baltimore and Ohio system; once president of the Licking County Medical Society; for seven years major and surgeon, Ohio National Guard; died, May 31, from cerebral hemorrhage.

Edward Hervey Currier, Manchester, N. H.; Dartmouth Medical School, Hanover, N. H., 1881; aged 42; a member of the New Hampshire Medical Society and of the Association of Military Surgeons of the United States; chairman of the State Board of Medical Examiners for several years; physician to the Sacred Heart Hospital, Manchester; died, June 1.

Benjamin George Cool, Washington, D. C.; George Washington University, Washington, D. C., 1879; aged 65; a member of the Medical Society of the District of Columbia, and the Association of Military Surgeons of the United States; surgeon, Fourth Battalion, D. C., N. G., for twenty years; died at the home of his daughter in Washington, May 25.

Grover Cleveland Roberson, Hurricane, W. Va.; University of Louisville, Ky., 1909; aged 36; captain, M. C., U. S. Army, with service abroad, and discharged May 8, 1919; local surgeon for the Chesapeake and Ohio system; died, May 28, from injuries received by the overturning of his automobile while making a professional call.

William S. Harroun, Santa Fe, N. M.; Georgetown University, Washington, D. C., 1865; aged 83; physician to the United States Indian School of Santa Fe until 1917; assistant surgeon, U. S. Army, during the Civil War; at one time physician of Cook County, Ill.; died, about May 23.

Theodore Frelinghuysen Bliss, Springfield, Ohio; Geneva (N. Y.) Medical College, 1869; aged 77; formerly eye and ear surgeon to the Mitchell-Thomas Hospital, Springfield; died in Lansing, Mich., May 29, from cerebral hemorrhage.

Benjamin Addison Sawyer, Haverhill, Mass.; Harvard University Medical School, 1865; aged 77; assistant surgeon of the Fiftieth Massachusetts Volunteer Infantry during the Civil War; died, May 28, from heart disease.

Charles Jackson Pollard, Princeton, Ky.; Southwestern Homeopathic Medical College, Louisville, Ky., 1897; aged 46; a member of the Kentucky State Medical Association; died, May 26, from rheumatic endocarditis.

Frank Dean Patterson, Colorado Springs, Colo.; University of Michigan, Ann Arbor, 1893; aged 51; for several years physician in the United States Indian Service at Schurz, Nev.; died, April 10, from heart disease.

James Tipton Rice, Excelsior Springs, Mo.; University Medical College of Kansas City, Mo., 1889; aged 59; a member of the Missouri State Medical Association; died, April 6, from cerebral hemorrhage.

James Dewitt Clinton Hoit, Elmwood, Ill.; Missouri Medical College, St. Louis, 1885; aged 77; a member of the Illinois State Medical Society; for many years a practitioner of Chicago; died, May 24.

Robert Lee Loftin, Olney, Ill.; Indiana University, Indianapolis and Bloomington, 1919; aged 32; an intern in the Olney (Ill.) Sanitarium; died in that institution, April 23, from meningitis.

Edward Horace Spooner, Park Ridge, N. J.; New York Homeopathic Medical College, New York City, 1869; aged 81; a veteran of the Civil War; also a clergyman; died, May 30.

George W. Garner, Stamps, Ark.; University of Tennessee, Nashville, 1880; aged 77; a practitioner for fifty years; surgeon in the Confederate service during the Civil War; died, May 29.

☉ Indicates "Fellow" of the American Medical Association.

Charles O. Brock, Jefferson, Ga.; Atlanta (Ga.) Medical College, 1880; aged 62; a member of the Medical Association of Georgia; died, May 29, from chronic nephritis.

John Strobel ♂ Philadelphia; Jefferson Medical College, 1880; aged 61; visiting physician to the Northern Day Nursery; died, May 28, from carcinoma of the liver.

Benjamin D'Arcy, Mayville, Mich.; Detroit Medical College, 1870; aged 80; a member of the Michigan State Medical Society; died, May 2, from cerebral embolism.

Thomas D. Hall, Oakland, Calif.; California Eclectic Medical College, Los Angeles, 1886; aged 71; a practitioner of Oakland for forty-five years; died, May 30.

Horace S. Hutchins, Batavia, N. Y.; Homeopathic Medical College of the State of New York, New York, 1861; aged 91; died, May 28, from bronchopneumonia.

Walter S. Hatfield, Walnut Hill, Cincinnati; Hahnemann Medical College of Philadelphia, 1882; aged 66; died, May 25, from carcinoma of the transverse colon.

Emma B. Standley, Alexis, Ill.; Northwestern University Woman's Medical School, 1887; aged 61; died in Kansas City, Mo., March 21, from myocarditis.

William Baxter Threlkeld, Providence, Ky.; University of Nashville, Tenn., 1905; aged 41; died at the home of his brother in Clay County, Ky., May 19.

Henry Barnabas Hill ♂ Logansport, Ind.; Rush Medical College, 1895; aged 53; a specialist on diseases of the eye, ear, nose and throat; died, May 24.

William E. Bell, Osceola, Mo.; Missouri Medical College, St. Louis, 1880; aged 72; died in Kirkwood, Mo., May 20, from carcinoma of the intestine.

Herbert William Wilson, Toronto, Ont.; Trinity Medical College, 1889; aged 58; for many years a practitioner of Tamworth, Ont., died, April 24.

Jesse R. Harrod, Little Rock, Ark. (license, Eclectic State Medical Board of Arkansas, 1903); aged 57; died, May 23, from cerebral hemorrhage.

Gilliford Brown Sweeney, Pittsburgh; College of Physicians and Surgeons, Baltimore, 1886; aged 58; died, May 16, from cerebral hemorrhage.

Joseph Lander Sanborn, North Amherst, Mass.; Atlanta (Ga.) Medical College, 1894; aged 53; died, May 17, from cerebral hemorrhage.

William H. Herrick, Cleveland, Ohio; Western Reserve University, Cleveland, 1866; aged 75; a veteran of the Civil War; died, May 28.

Horace Greeley Boynton, Columbus, Ohio; Starling Medical College, Columbus, Ohio, 1888; aged 60; died, May 22, from heart disease.

Allan Gordon Rice, Toronto, University of Toronto, Ont., 1908; aged 35; division surgeon to the Grand Trunk System; died recently.

George Phineas Haley, Boise, Idaho; Jefferson Medical College, 1879; aged 66; died, May 29, from carcinoma of the stomach.

Orlando P. Shoemaker, Covina, Calif.; Northwestern Medical College, St. Joseph, Mo., 1885; aged 60; died, about May 24.

William Backus Cook, Chicago; Bennett Medical College, Chicago, 1882; aged 69; died, May 19, from cirrhosis of the liver.

Charles Carson Messer ♂ Turner's Falls, Mass.; Dartmouth Medical School, Hanover, N. H., 1880; aged 66; died, May 20.

Elmer Legrand Straub ♂ Minersville, Pa.; Jefferson Medical College, 1890; aged 54; died suddenly, May 31.

Henry James Allen ♂ Corinth, N. Y.; University of Vermont, Burlington, 1884; aged 66; died, May 6.

Milton Grant Conger, Cincinnati; Miami Medical College, Cincinnati, 1890; aged 50; died, May 18.

Ulysses Montgomery, Louisville, Ky.; University of Louisville, Ky., 1873; aged 72; died, March 30.

Alfred Mullhaupt ♂ St. Mary's, Pa.; Jefferson Medical College, 1884; aged 60; died, May 26.

Fred Augustus Hall, Roslindale, Mass.; Boston University, 1899; aged 52; died, about May 12.

John Edward Noble, Fannin, Miss.; Jefferson Medical College, 1870; aged 72; died, May 23.

Joseph Paradis Laverie, Quebec; Laval University, Quebec, 1877; aged 65; died, April 15.

Correspondence

THE WORLD'S FOOD SUPPLY

To the Editor:—A recent issue of THE JOURNAL (June 12, 1920, p. 1650) contains a quotation from Mason to the effect that "today there seems reason to believe that in the whole world there is not all the food which could be consumed by all the people," and "for the first time in history the world at large faces a universal food shortage." Permit me to suggest that statistical foundation for these statements is not available. The United States Food Administration and the American Relief Administration records, supplemented by those of The International Agricultural Institute and the data of the Allied and Associated Powers, indicate that at the close of the present crop year the world may face a new year without a carry-over in bread grains. The future of bread will depend on the new planting and the following yield. Outside of wheat and rye, the world possesses supplies enough in hand and in prospect so that the population could be fed as in the past, if transportation and buying power were normal. Europe is eating less than normal; the rest of the world is eating more than normal, judged by prewar practice. If by a magic wand the transportation and exchanges of 1913 could be restored, the world would find the food in hand. The food supply would be less animal and more vegetarian, but it would be sufficient.

A. E. TAYLOR, M.D., Philadelphia.

Professor of Physiological Chemistry,
University of Pennsylvania.

"PRIORITY IN SUGGESTING TRANSILLUMINATION FOR FOREIGN BODIES"

To the Editor:—With regard to transillumination in locating foreign bodies, the question of priority in suggesting which was mentioned by Dr. Morris H. Kahn of New York (THE JOURNAL, May 29, 1920, p. 1536), I would remark that I used this method occasionally as early as 1900, both to detect foreign bodies and to note the shape of bones, though the rather surprising translucence of bones detracts considerably from the anticipated value of the method. The same remark applies to various foreign bodies. However, nothing is further from my intention than to claim personal priority for the method. The aborigines of Central America are reputed to have shaded areas with a mass of soft feathers where a foreign body was supposed to have lodged and to have inspected it against the sun's rays; and it is not unlikely that the method was used in some form by various peoples in prehistoric times. When our attention was first called to roentgen rays, I made a good many experiments with various methods of transillumination, by artificial light and sunlight, visually and by slow action on covered photographic plates, and doubtless many others did the same. In this connection, it may be of interest to note that my first attempts to locate the stomach with bismuth (and iron tablets which may be useful today for some purposes) were by roentgenography, but the experiments failed through lack of proper plates and unfamiliarity with the necessary technic. The first successful location of the stomach was by bismuth and the fluoroscope, early in July, 1897. Roux of Paris succeeded a few months before this time, but I was unaware of his work for several years afterward.

Transillumination should be more commonly practiced. Gastrodiaphany has properly fallen into disuse, as the results are vague and often misleading, and the roentgen rays or even auscultatory percussion give much more accurate infor-

mation. Transillumination as for hydrocele can often be applied to abdominal tumors and ascites, to give an idea of the consistency of the contents, some form of tube being employed to limit the field of vision. Too much dependence should not, however, be placed on the appearances. For foreign bodies, fractures, etc., especially in the hands and when the limbs are not too thick, transillumination with sunlight or a bright electric lamp, especially that of some form of projecting instrument, is often available when roentgenoscopic examination is not available. As stated, the bones are quite translucent and do not present the distinct shadows that might be expected. Still, a fracture or dislocation would be seen under favorable conditions. Foreign bodies, such as wood, which do not give a shadow with the roentgen rays, may be better seen by ordinary transillumination. Heavy cloth—for example, an old hat with a hole cut in it—may be used to obscure the light about the limb or part examined, and it may be necessary to reduce the illumination by gauze, by the aboriginal method of using feathers, or by some similar device, to secure a degree of transillumination at which the foreign body will show an opacity. Metallic substances will ordinarily give a distinct opacity, even including aluminum, and often the results are quite as decisive as with the roentgen rays. Wood, etc., may at times fail to give a recognizable shadow. It seems to me that the method should be taken up and carefully studied in its various details as a potentially valuable means of diagnosis and not merely as a rough-and-ready substitute for roentgen rays in an emergency.

A. L. BENEDICT, M.D., Buffalo.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TECHNIC OF SACHS-GEORGI REACTION

To the Editor:—Can you give me an outline of the technic of the Sachs-Georgi reaction?

J. C. L.

ANSWER.—The Sachs-Georgi reaction is a precipitation test for syphilis, based on the fact that the addition of cholesterolized organ extract to syphilitic serum will cause a flocculent precipitate.

A cholesterolized extract is prepared with alcoholic extract of beef heart, 100 c.c. (1 gm. of heart to 5 c.c. of alcohol); alcohol, 200 c.c., and 1 per cent. alcoholic solution of cholesterolin, 13.5 c.c. At the moment of use, a quantity of the cholesterolized extract is gently agitated with an equal part of freshly prepared physiologic sodium chlorid solution (0.85 per cent.), after which four parts more of the sodium chlorid solution are rapidly added. It is very important that a 0.85 per cent. sodium chlorid solution be employed. Clear, fresh normal serum is obtained for control tests and is inactivated by heating at 55 C. for half an hour. The technic of the reaction is as follows:

To 1 c.c. of the patient's serum, diluted ten times with physiologic sodium chlorid solution, 0.5 c.c. of the dilute organ extract is added. These are mixed well and placed over a water bath at 37 C. for two hours, then kept at room temperature for from twenty to forty-eight hours, after which the results should be noted. The limit of forty-eight hours must not be exceeded as a false reaction may take place. Some serologists have obtained excellent results by centrifuging the tubes after incubation for three or four hours. A dissecting microscope makes an excellent substitute for the agglutinoscope in reading the results, for the inclined tubes may be placed on the black stage and examined for precipitates with the No. 8 lens. Parallel control reactions are run with the normal serum.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.
ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.
COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: Hartford, July 13-14. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.
CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
INDIANA: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, Crawfordville.
MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
MASSACHUSETTS: Boston, July 13-15. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.
NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.
OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.
OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.
RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Waubay.
UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.
VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.
WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.
WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.
WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Iowa March Examination

Dr. Guilford H. Sumner, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Iowa City, March 29-31, 1920. The examination covered 48 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 48 candidates examined, 47 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University	(1918)	82.7
University of Illinois	(1920)	84.9
State University of Iowa College of Medicine	(1917)	
	92.1, (1920) 83.9, 84.7, 85, 85.4, 86.1, 86.5, 86.6, 86.9, 87, 87, 87.1, 87.1, 87.2, 87.4, 87.5, 87.5, 87.7, 87.9, 88, 88.1, 88.1, 88.1, 88.4, 88.6, 88.7, 88.9, 89.1, 89.2, 89.5, 89.5, 89.6, 89.6, 90.1, 90.4, 90.9, 90.9, 90.9, 91.4, 91.7, 91.7, 92.		
Medical-Chirurgical College of Kansas City	(1900)	82.1
John A. Creighton Medical College	(1919)	83.4
University of Nebraska College of Medicine	(1920)	85.6
FAILED			
Chicago College of Medicine and Surgery	(1918)	69.9

Rhode Island April Examination

Dr. Byron U. Richards, secretary of the Rhode Island State Board of Health, reports the written and practical examination held at Providence, April 1-2, 1920. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Of the 8 candidates examined, 6 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University	(1917)	86.4
Johns Hopkins University	(1916)	85.2
Tufts College Medical School	(1917) 86.1, (1919)	82.1
University and Bellevue Hospital Medical College	(1919)	91.9
Montreal School of Medicine and Surgery	(1901)	90.4
FAILED			
Eastern University School of Medicine	(1913)	77.1
Tufts College Medical School	(1917)	74.2

Book Notices

LABORATORY MANUAL OF PHARMACOLOGY INCLUDING MATERIA MEDICA, PHARMACOPAEDICS AND PHARMACODYNAMICS. By A. D. Bush, B.Sc., M.D., Professor of Pharmacology, University of North Dakota. Cloth. Price, \$3.50 net. Pp. 251, with illustrations. Philadelphia: F. A. Davis Company, 1919.

This manual has been compiled with the object of better training medical students in the fundamentals of therapeutics and not for the development of specialists in pharmacology. Sections are included on pharmacology, materia medica, pharmacopedics and pharmacodynamics. The materia medica consists of testing the main properties of selected drugs from the pharmacopeia. The tests consist mainly of the appearance, odor, taste, solubility and the most important incompatibilities. Stress is laid on the unimportant differences between the obsolete word "pharmacopedics" and the word "pharmacy," though where greater accuracy of definition is attainable and more important, less care is used; for example, the statement is made that alcohol is obtained by the distillation of a fermented amylaceous substance, and two other alcohols are official: alcohol dehydratum and alcohol dilutum. The section labeled pharmacopedics is what is called pharmacy in most texts. It includes the preparation of a representative of each U. S. P. preparation and the examination of shelf samples of all official (U. S. P.) preparations. No "reasons" or "whys" are given for the steps taken in the processes. This section closes with the compounding of ten prescriptions written in Latin. No instruction in prescription writing is given. The section on pharmacodynamics consists of the usual class experiments, with an attempt to connect the laboratory work with work in the hospital. This is an excellent suggestion, altogether too unavailable in most schools. The book closes with an outline of pharmacology based largely on Cushny's Pharmacology, and intended as an outline to guide the student in his studies. This part is well illustrated by diagrams. The student who satisfactorily works through the exercises given in this book should have an adequate knowledge of the foundations of therapeutics.

SWANZY'S HANDBOOK OF THE DISEASES OF THE EYE AND THEIR TREATMENT. Edited by Louis Werner, M.B., F.R.C.S.I., Surgeon to the Royal Victoria Eye and Ear Hospital. Twelfth edition. Cloth. Price, \$6 net. Pp. 671, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1919.

To one familiar with the first edition of this book, published about thirty years ago, it is difficult to realize that the present edition is from the same author. Virtually every chapter has been rewritten and revised, and additions have been made that keep it abreast of the most recent advances in the science of ophthalmology. The value of colored plates in treatises on ophthalmology is becoming more and more recognized, and the editor has made a selection that will be of the greatest help to the student in acquainting himself with the various pathologic fundus conditions. With painstaking care, many things are explained in detail which might seem superfluous to the practitioner, but will be received with gratitude by the student. One of the noteworthy additions in the present edition is the chapter on ocular diseases and symptoms likely to accompany focal disease of the brain, in which a summary is given of Gordon Holmes' investigations on the cortical center of vision. The book will without doubt receive the highest commendation of the profession.

APHASIA AND ASSOCIATED SPEECH PROBLEMS. By Michael Osnato, M.D., Associate in Neurology, Columbia University. Cloth. Price, \$2.50 net. Pp. 190. New York: Paul B. Hoeber, 1920.

This small book gives a very readable account of aphasia and its associated problems. The author, in brief, abandons all the old ideas of cortical localization for speech. To him there is no such thing as sensory or motor aphasia—speech is the result of functioning of the entire brain. With this view most neurologists will not agree, for the many years of painstaking work on cortical localization cannot be thrown out, merely on theory; one must have some pathologic facts, which the author does not give. The book is well written, however, and the subject is adequately presented.

Medicolegal

Liability for Damages from Sale of Opiates

(*Moberg v. Scott* (S. D.), 175 N. W. R. 559)

The Supreme Court of South Dakota affirms a judgment in favor of the plaintiff, who recovered a verdict for \$12,500 damages in this action to recover actual and exemplary damages occasioned by her loss of conjugal consortium, as it was termed, during a period of illness preceding the death of her husband, and for damages resulting from his death, which sickness and death were alleged to have been caused by the defendant's unlawfully, wilfully, maliciously and knowingly furnishing the husband with commodities of which opium was an ingredient. The court says that it deems it unnecessary to review the evidence. It was largely circumstantial in its nature, but, while there was much conflict therein, there was ample from which the jury was warranted in finding that the plaintiff's husband, for the last year or more of his life, was in a physical and mental condition unfitting him to give to his wife that aid, support, society and companionship to which she was entitled, and which she had theretofore enjoyed; that such condition and the death which followed were caused by the husband's use of a drug containing opium; and that such drug was wrongfully, unlawfully and knowingly furnished the husband by the defendant. Lay witnesses could testify as to their observations touching the health, general demeanor, etc., of the husband during the time of his alleged illness and prior thereto. Nor was there error in allowing proof that the defendant had no license as required by local ordinance, authorizing him to sell opium or drugs containing opium. Such evidence was competent, both because it negated any right to sell even on a physician's prescription, and because it had a direct bearing on the good faith of the defendant, and therefore on the right of the plaintiff to recover exemplary damages. This court must presume that the jury found all the facts in favor of the plaintiff. If so, it must have found that the defendant had intentionally and wrongfully sold opium to the plaintiff's husband, knowing the character of the drug, and knowing that the husband was using it and being injuriously affected thereby. To so find was to find malice.

Cold and Fever Constitute a "Disease"

(*Sovereign Camp of the Woodmen of the World v. Treanor* (Texas), 217 S. W. R. 204)

The Court of Civil Appeals of Texas sets aside a judgment recovered by plaintiff Treanor and in its stead renders one for the defendant, in this action on an insurance certificate, because the case was apparently tried on a misapprehension of what was embraced within the term "disease." The court says that when the insured made his application for insurance he answered "No" to the question: "Have you ever consulted or been attended by a physician for any disease or injury during the past five years?" The medical examiner accepted that as correct, although he had himself not long before been called once to see the insured, who had what is designated in the case a "cold and fever." This was perhaps to be explained by the examiner's conception of the word "disease." But the word "disease" comprehends a cold and fever, as Webster defines the word "disease" as "a morbid condition of body; sickness," and gives the words "disorder" and "distemper" and "malady" as synonyms of the word "disease." The insured was sick enough to remain at home and to consult and to be attended by a physician. He was sick enough for his physician to prescribe medicine for him and to tell him to go to bed, and he had a cold and fever. It is clear to the court that his cold and fever was a disease comprehended by the plain and commonly understood meaning of the word "disease" contained in the question. The defendant had a right to ask all such questions, so that the medical examiner would be able to pass on the application to determine the risk or seek further information if

desirable. Neither the applicant nor the physician making the examination had the right to pass on what question to answer or the materiality thereof. Those questions were there for some purpose, and required a truthful answer. The word "disease" embraced the very ailments for which the physician treated the insured prior to his making the application.

Society Proceedings

COMING MEETINGS

Maine Medical Association, Augusta, June 29-30.
Montana State Medical Association, Helena, July 14-15.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., May 3, 1920

(Concluded from page 1738)

The Disappearance of Foreign Bodies from the Circulation, and the Formation of Antibodies

DRS. WARFIELD T. LONGCOPE and GEORGE M. MACKENZIE, New York: The observations included in this report are based on a study of fourteen patients with pneumococcus Type I pneumonia who were treated with antipneumococcus serum, and received in this way from 100 to 630 c.c. of horse serum intravenously. The curves of precipitin and precipitinogen (horse serum) in the circulation, and the relation of these curves to the onset, duration and termination of the serum disease are shown. The presence of precipitinogen in the circulation and the time when it disappeared were determined by specific precipitation, using an antihorse rabbit serum. Repeated efforts to demonstrate the excretion of horse serum in the urine were, without exception, negative. The appearance of precipitins and the length of time during which they persisted in the circulation were followed by titrations of the patient's serum against normal horse serum. Several of the patients, however, were lost to observation before the precipitins had disappeared. Fresh serum was used in all tests, the tubes being set up in most cases the same day that the blood was drawn. In a few of the tests the serum stood in the ice-box overnight before being used. After being set up, the tubes were placed in the water bath for one hour, when the final reading was made. The titrations in each case were made by using dilutions of the antigen and a constant amount of precipitating serum.

With one exception the fourteen patients fall into two distinct groups. In the first group there were eight patients. These were all characterized by (1) severe serum disease; (2) a high titer of precipitins in the circulation, which either first appeared or rose to the crest of the curve synchronous with the termination of the symptoms of serum disease; and (3) disappearance of the precipitinogen near the time that the symptoms were subsiding. The onset of the serum disease in this group varied from the third to the eleventh day after the first administration of serum; the duration varied from eleven to twenty-eight days. The horse serum disappeared during the period between the eighteenth and the thirty-eighth day. Precipitins made their first appearance between the sixth and the fifteenth day, and in four of the eight patients were still present when the patient was lost to observation—from thirty-eight to fifty-seven days after the first dose of serum. In the other four the precipitin reaction was first negative on the twenty-sixth, fifty-seventh, sixty-sixth and forty-first days, respectively. In the second group there were five patients. They were characterized by (1) very mild or complete absence of symptoms of serum disease; (2) inefficient precipitin formation or none at all, demonstrable in the serum, and (3) a persistent reaction for horse serum in the circulation. In four of the five patients the

reaction for horse serum was still positive when the patients were lost to observation, the last test having been made on the forty-ninth, sixty-seventh, fifty-second and sixty-third days, respectively. In the other patient it was negative on the sixty-ninth day.

One patient out of the fourteen showed a marked serum disease of fourteen days' duration, precipitins of high titer and persistence of precipitinogen for seventy-six days. This patient was studied before we began testing the antihorse rabbit serum for traces of antigen, and it is possible that the apparent persistence of precipitinogen in the patient's serum was due to antigen in the rabbit serum, precipitated by the precipitins in the patient's serum.

The full significance of these interesting relations between serum disease, precipitin formation and disappearance or persistence of precipitinogen, which the results indicate, is not yet clear. But obviously, they suggest that those individuals who have mild serum disease or none at all, following administration of heterologous serum, possess something that acts like a protective mechanism and prevents or delays the union of antigen with the cells of the body, and thus limits or makes impossible the formation of precipitins. The results also indicate that when precipitins in high titer are produced, the precipitinogen disappears promptly, and that when there is little or no precipitin formation the precipitinogen persists.

Urea Excretion

DRS. J. HAROLD AUSTIN, EDGAR STILLMAN and DONALD D. VAN SLYKE, New York: In using the rate of urea excretion as an index of kidney capacity, there are certain factors besides the functional capacity of the kidneys which influence the urea excretion rate to such an extent that they must either be kept constant or be allowed for by calculation, before the excretion rate of urea can be taken as even an approximate measure of the functional capacity of the kidney. One of these factors is the concentration of urea in the blood. Contrary to the view of Ambard and in accordance with the observations of Marshall and Davis, we find in dog and in man that, other factors being constant, the rate of urea excretion is directly proportional to the concentration of urea in the blood, and not proportional to the square of the latter.

On the basis of our own observations on normal human subjects, and of those of McLean and Addis, we find that the ratio of urea excretion to blood urea concentration varies considerably in the normal subject. These variations cannot be explained by variations in the concentration of urea in the urine. A constant relation has, however, been observed between these variations and changes in the rate of urine volume output. The relationship that holds may be thus expressed:

$$\frac{D}{W} = K B \sqrt{\frac{V}{W}}$$

D , grams of urea excreted per diem, calculated from seventy-two minute period.

B , grams of urea per liter of blood.

V , liters of urine excreted per diem calculated from seventy-two minute period.

W , body weight in kilograms.

In all observations on normal human subjects as published in the data of McLean and Addis and in our own observations, the value of K is 7.5 ± 3 .

The influence of increasing the rate of urine volume output on the rate of urea excretion holds, however, for all normal subjects studied only up to a certain limit, which we call the "augmentation limit," which appears to be characteristic for the individual, and which has in our experience been between the rates of 3 and 5 liters per diem. Beyond this "augmentation limit," the limit is to be used as V in the formula in place of the urine volume output observed.

For the calculation of the daily rate of urea or of urine volume excretion from urine collected during a short period of time, it has been found desirable in many instances, when the normal daily output of creatinin for the individual in question is known, to calculate the rate of excretion from the ratio of the creatinin contained in the sample of urine collected to the total daily excretion of creatinin for that individual.

Site of the Cardiac Lesion in Two Instances of Intra-ventricular Heart Block

DRS. B. S. OPPENHEIMER and H. E. B. PARDEE, New York: The hearts of two patients were examined in order to locate the site of the lesion associated with electrocardiograms suggesting partial block of either the right or the left branch of the auriculoventricular system. As the main deflections in the two sets of electrocardiograms were in opposite directions, it was to be expected that the lesions, if any, in the two instances, would be found on opposite sides of the heart. There has been considerable theoretical discussion as to which type of electrocardiogram is associated with right-sided and which with left-sided block. The first case showed electrocardiographically a main deflection inverted in Lead I, upright on Leads II and III, a marked widening of the foot-points of the Q. R. S. complex and only moderate voltage; in addition, there was auricular fibrillation. Microscopic examination of serial sections of the auriculoventricular system revealed that the right bundle branch became attenuated almost immediately after its origin from the main stem, and was surrounded by connective tissue. This diminution became more pronounced, until at a distance of 7.5 mm. from the bifurcation, scarcely one or two doubtful muscle fibers could be seen. Below this the right branch increased in size again, until at 4 cm. below the bifurcation it was of normal dimensions. There was marked fibrous myocarditis of the septum, involving chiefly the left side, especially the subendocardial region. The left branch presented no lesion. In the second case on two examinations at an interval of six weeks, electrocardiograms revealed that the main deflection was upright in Lead I and inverted in Leads II and III, and that it was notched, the foot-points being abnormally separated. Wave P was present throughout. Serial sections showed the auriculoventricular node, stem and right branch intact. The left bundle branch was embedded in dense fibrous tissue throughout its course, and at a distance of 3.5 cm. below its origin, its posterior (dorsal) half was replaced by connective tissue continuous with an adherent, organized mural thrombus. In addition, there was a general fibrous myocarditis, which predominated on the left side only.

The direct application of the published electrocardiograms associated with experimental bundle branch lesion in dogs to the interpretations of bundle branch block in man is rendered doubtful by certain anatomic peculiarities of the dog's heart and its relation to the thorax. In view, therefore, of the pathologic findings in these two human cases, it seems that the usually accepted electrocardiographic interpretation of right and left bundle branch block in man may possibly have to be revised.

Study of a Case of Low Carbon Dioxid Combining Power of the Blood

DRS. O. H. PERRY PEPPER and LEON JONAS, Philadelphia: A young man, aged 16, who entered the University Hospital complaining of shortness of breath and a feeling that his heart beat fast, four weeks before admission, while in good health but without previous training, had run for over an hour, "at least 5 miles." Three days later he became conscious of the beating of his heart. Still a week later he had an attack of dizziness and vomiting which lasted for two days. He asserted that he lost ten pounds in the last two weeks. He had not been well since the overexertion in running. His previous medical history was negative, nor was there anything of importance in the social and family history. The boy was a marked mouth breather; the breathing was very deep and the rate more rapid than normal, from 24 to 32 per minute. The hands and fingers were cyanosed, the blood pressure low and the tonsils enlarged. Repeated examinations of the heart by several examiners, by fluoroscopy and by electrocardiography revealed no alteration from the normal. The lungs, also, were normal. The Wassermann reaction and blood count were normal. Neurologic examination was negative. Because of the respiratory behavior, the laboratory was requested to determine whether or not an acidosis was present. Examinations revealed the blood carbon dioxid combining power to be 29 per cent.

by volume, and persistently remained between this figure and 50 per cent. by volume. The urinary urea nitrogen and the titratable acidity were always within normal limits. This unexpected low figure could not be explained on a diabetic basis, as the blood sugar was 0.1 per cent. after starvation, and the urine was always free of sugar and ketones.

It was not felt that renal involvement was the cause, because frequent blood urea nitrogen determinations were always below 15 mg. per hundred c.c. The phenolsulphonephthalein elimination was constantly normal. Urinary analyses occasionally revealed a trace of albumin and a few casts; a marked polyuria occurred at times, although the urine could be easily concentrated to less than 500 c.c. per twenty-four hours and the specific gravity raised to 1.029.

In order to determine whether a hypersensitive respiratory center might not be the cause of the low carbon dioxid combining power through overventilation, the rebreathing of increasing amounts of carbon dioxid was resorted to, but with negative results. Under the influence of morphin the rate and depth of respiration were markedly reduced and the carbon dioxid combining power raised, only to relapse after the influence of the morphin had ceased. In view of these various investigations, the low carbon dioxid remains unexplained.

Studies in Sugar Tolerance

DR. W. R. OHLER, Boston: One hundred and fifteen glucose tolerance tests were made at the Boston City Hospital according to the technic of Janney and Isaacson. Of the entire group, a small group of eleven is here presented for discussion. All of these cases were referred to the diabetic clinic with a diagnosis of diabetes based on the finding of sugar in the urine, in amount varying from a trace to 1 per cent. One patient gave a history of diabetes in father and grandfather; three a history of thirst and polyuria; four had been told by family physicians that they had diabetes; one had been discharged from the army because of diabetes, and two were unaware of any metabolic disorder.

Tolerance tests were made because of the absence of hyperglycemia, and because glycosuria was not always present, even on an unrestricted diet. The results of the tolerance tests were as follows: 1. Glycosuria was present in nine of the eleven cases at the end of the two-hour period. 2. One case gave a so-called typical diabetic curve. 3. Four cases gave curves that were not typical of diabetes but which were distinctly abnormal in that the readings went over 0.16 per cent. at the end of one hour and did not return to within two points of the fasting figure at the end of two hours. 4. Six cases, including the two that did not have glycosuria, gave curves very similar to the curve given by a normal adult.

Comment: 1. Are these cases to be considered true diabetes or so-called renal diabetes? The one patient showing a typical diabetic reaction undoubtedly had true diabetes, despite the fact that glycosuria is not always present on an unrestricted diet. The four cases presenting distinct abnormalities in the curve may represent a transitional stage in the development of the disease, the onset of which we know to be insidious. The six cases giving practically normal reactions, except for the presence of glycosuria in four of the group, may or may not be true diabetes. One case is presented in which a second tolerance test had been made after an interval of nine months on an unrestricted diet. The only striking difference between the two curves was a rise in the fasting blood sugar from 0.06 to 0.09. The answer to the foregoing question can be given only after a long period of observation. 2. There are probably many more such cases in existence than have been previously pointed out. Glucose tolerance studies in such cases add greatly to our knowledge of the diagnosis and development of the disease. 3. It is quite possible that some cases of diabetes which have shown remarkable progress as measured by glycosuria and hyperglycemia readings may belong to a group of the sort here presented. 4. Abnormal glucose tolerance curves are found in a variety of clinical conditions in which there has never been any question of diabetes. In drawing conclusions from glucose tolerance studies, one must be careful to eliminate other conditions that may influence the results.

Current Medical Literature

AMERICAN

Titles marked with an asterisk () are abstracted below.

American Journal of Diseases of Children, Chicago

May, 1920, 19, No. 5

- *Scorbutic Beading of Ribs. A. F. Hess and L. J. Unger, New York.—p. 331.
Water Retention in Pneumonia. H. O. Lussky and H. Friedstein, Chicago.—p. 337.
*Prenatal Syphilis with a Plea for Its Study and Prevention. J. A. Kolmer, Philadelphia.—p. 344.
*Antineuritic and Growth Stimulating Properties of Orange Juice. A. H. Byfield, A. L. Daniels and R. Loughlin, Iowa City, Ia.—p. 349.
*Fluid Injections in Dehydrated Infants. S. McLean and C. A. Lang, New York.—p. 359.
*Length of Large and Small Intestine in Young Children. L. Robbin, New York.—p. 370.
*Treatment of Birth Fractures at Fordham Hospital. S. W. Boorstein, New York.—p. 375.
*Craniotabes and Beading of Ribs as Signs of Rachitis. H. Schwartz, New York.—p. 384.
Artificial Infant Feeding. M. Ostheimer, Philadelphia.—p. 386.
Subcutaneous Emphysema in an Infant Three Days Old. H. K. Faber, San Francisco.—p. 388.
Review of Literature of Past Five Years on Anaphylaxis and Related Phenomena. A. R. Cunningham, Boston.—p. 392.

Scorbutic Beading of Ribs.—According to Hess and Unger, beading of the ribs, the so-called rachitic rosary, should not be regarded as pathognomonic of rickets. It occurs very frequently in connection with infantile scurvy and is one of the typical signs of this disorder, developing in the course of the disease, and disappearing rapidly with the recession of the other symptoms when an antiscorbutic foodstuff is given. This is borne out by clinical observations on man and on animals, as well as by postmortem examinations.

Prenatal Syphilis.—Kolmer believes that it is proper to regard all children as syphilitic when born of parents one or both of whom react positively to the Wassermann test, even though both child and parents are clinically free of the disease, and even to institute specific treatment as a precautionary measure, and especially if such children are manifestly below par in weight and nutrition.

Growth Stimulating Properties of Orange Juice.—The results obtained by Byfield and his associates by the addition of orange juice to or omission from the diet of babies were uniform and constant. Under the conditions maintained, growth, as evidenced by the weight curves, was in all cases stimulated when orange juice was given. On the other hand, orange juice from which the antineuritic vitamin had been removed was without influence.

Fluid Injections in Dehydrated Infants.—The effects of introduction of fluids in the case of dehydrated infants were studied by McLean and Lang. Only infants showing signs of dehydration were given treatment. Seventy-six infants received 269 injections of fluid. Of these, 155 were hypodermoclyses; ninety-two were intraperitoneal injections, and twenty-two were sinus injections. The mortality among these seventy-six cases was 56.6 per cent. The amount of the clyses varied between 90 and 150 c.c., depending on the size and the condition of the child. The following solutions were used: 6 per cent. dextrose in physiologic sodium chlorid solution; 6 per cent. dextrose in distilled water; physiologic sodium chlorid solution; 2 per cent. sodium bicarbonate with 1 per cent. dextrose solution. Among the special effects were the following: The pulse is more frequently affected after sinus and intraperitoneal injections than after hypodermoclyses. The respiratory rate is more frequently affected in peritoneal injections than in sinus injections and hypodermoclyses. The temperature is more frequently elevated in sinus injections than in intraperitoneal injections or hyperdermoclyses. Weight gains are more frequently noted following intraperitoneal injections than after sinus injections or clyses. Certain infants show no improvement until after repeated injections. The shorter the interval between the onset of symptoms and the beginning of treatment, the greater the response.

Length of Intestine in Children.—The length of the large intestine in young children Robbin found was between 80 and

130 per cent. of the length of the body in 91.3 per cent. of 185 bodies of infants examined. The length of the small intestine was found to be between 500 and 900 per cent. of the length of the body in 79.9 per cent. of all cases. An unusually long large intestine was not accompanied by an unusually long small intestine; an unusually short large intestine was not accompanied by an unusually short small intestine. No association of an unusually short or long small or large intestine with the clinical condition could be established. That the anomaly of an unusually long large intestine might be a potential factor in the causation of chronic intestinal indigestion or chronic constipation of later life is worthy of consideration. The indications are that during early life the body grows somewhat more rapidly in length than does either the small or large intestine.

Treatment of Birth Fractures.—Six cases are cited by Boorstein. They show that the Thomas Jones splint can be used with safety in cases of birth fractures affecting the femur or the humerus. It allows easier transportation, permits cleansing of the children and saves a great deal of watching. It permits early massage. The deformity is easily controlled. The union probably occurs earlier on account of the ability of the infant to use the limb, to elevate it together with the brace.

Craniotabes and Beading of Ribs in Rachitis.—Among 4,944 children examined by Schwarz, 734 showed craniotabes some time during the first year, and 301 had evidences of these soft spots during the first months of life. This number decreased regularly as the infants grew older. Thirty-five per cent. of all the children presented beading of the ribs, 13 per cent. during the first month of life, and this proportion changed very little throughout infancy, perhaps becoming slightly less at an age when rachitis is more common. Schwarz is sure that nearly all infants, if examined regularly throughout the first year, will present this condition in a greater or less degree at some time or other in their infancy.

American Journal of Medical Sciences, Philadelphia

May, 1920, 159, No. 5

- Sir William Osler as a Man of Letters. C. W. Burr, Philadelphia.—p. 625.
Sir William Osler as Host to Americans in England During War. G. W. Norris, Philadelphia.—p. 630.
*Diagnostic Significance of Inspiratory Movements of Costal Margins. C. F. Hoover, Cleveland.—p. 633.
*Early Lesions in Gallbladder. W. C. MacCarty and J. R. Corkery, Rochester, Minn.—p. 646.
*Results of Operations for Chronic Appendicitis. Study of 555 Cases. C. L. Gibson, New York.—p. 654.
*Gastric Secretions in Neurocirculatory Asthenia. J. H. Musser, Philadelphia.—p. 664.
*Newer Conceptions of Pathogenesis and Treatment of Empyema. A. V. Moschowitz, New York.—p. 669.
*Rheumatic Fever at Base Hospital No. 6, A. E. F., in Spring of 1918. P. D. White, Boston.—p. 702.
Prenatal Transmission of Syphilis. 1. Syphilis of Testicle. L. Herman and J. V. Klauder, Philadelphia.—p. 705.
Tuberculosis Problem and General Hospital. M. Taschman and B. Stivelman, New York.—p. 722.
*Fibrinuria in Case of Carcinoma of Kidney. V. J. O'Connor, Boston.—p. 729.
Anthrax from Shaving Brush and Primary Anthrax Meningitis. H. W. Carey, Troy, N. Y.—p. 742.

Inspiratory Movements of Costal Margins.—In interpreting the inspiratory movements of the costal margins, Hoover says, one must study the symmetry and asymmetry of not only the entire costal margins but of the inner and outer portions of each costal margin. Movements of the costal margins are modified with changes in the curve of the plane of the diaphragm, by paresis of either the diaphragm or the intercostal muscles, and by synechia between the diaphragm and the thoracic wall. Such studies improve the accuracy with which one differentiates between infraphrenic and supraphrenic disease, and enable one also to estimate the conformation of the heart and the size of the pericardial sac and to differentiate between lesions which cause phrenic displacement and those which do not modify the place of the diaphragm.

Pathology of Gallbladder.—The stimulation of greater interest and more detailed research in conditions of the bile

passages which have heretofore been mistaken for normal is the object of this paper, which is based on an examination of 4,998 gallbladders, of which 4,824, or 96.5 per cent., showed gross pathologic lesions.

Chronic Appendicitis and Continued Ill Health.—Gibson suggests that the presence of other undiscovered lesions may often account for continued ill health after appendectomy. Therefore, it is advisable to make a good sized incision, and, even if a frankly pathologic appendix is found, look for other possible lesions, and if no obviously pathologic appendix is found until every other possibility has been exhausted, making a supplementary incision, if necessary.

Gastric Secretion in Neurocirculatory Asthenia.—Musser has found that in patients suffering with neurocirculatory asthenia there is a very definite increase in the total acidity and the free hydrochloric acid as compared with controls. These figures do not represent abnormal hyperacidity. They do show, however, that almost uniformly soldiers suffering with neurocirculatory asthenia as contrasted with apparently normal soldiers, both eating the same food, under identical routine and under the same conditions of living, show a higher gastric acidity. This is a diagnostic point which may be of value in differentiating the disorder in questionable cases. It seems to add further evidence to that already accumulated that these soldiers are suffering from a neurosis with which is probably associated a hyperirritable vagus.

Pathogenesis of Empyema.—In Moschcowitz' opinion, empyema in most instances results from the rupture of a small subpleural pulmonary abscess. An empyema is the final stage of a process in which the first stage is a serous pleurisy and the second a seropurulent pleurisy. The latter is the so-called "formative" stage of an empyema. The "formative" stage is unaccompanied by pleural adhesions. The stage of final empyema is always accompanied by adhesions. The vast majority of empyemas are of the encapsulated variety. Very few occupy the entire pleural space. Metastatic suppurations accompanying empyema are to be found rather as complications of the causative pneumonia than of the empyema. Moschcowitz outlines in detail the treatment he employs at various stages.

Rheumatic Fever.—In a series of seventy-three soldiers with acute rheumatic fever, 51 per cent. gave a previous history of rheumatic fever and 40 per cent. showed large or ragged tonsils. The joints involved in order of frequency were knee, ankle, shoulder, wrist, foot, elbow, hand and hip. Acute pericarditis was found in 10 per cent. of the cases, usually very transient. Acute pleuritis was found in 19 per cent. of the cases; mitral endocarditis in 40 per cent. of the cases; mitral and aortic endocarditis combined in 8 per cent. Most of these cases were apparently of long standing. Acute temporary heart block was discovered in 4 per cent. of the cases. Response to forced salicylate therapy was very striking. It seemed that the course of the disease was shortened by salicylates.

Fibrinuria in Kidney Carcinoma.—O'Connor reviews twenty-five cases recorded in the literature and adds one personal case. He claims that the fibrin found in the urine in these cases was not a product of the carcinoma itself, but a result of the associated renal destruction. The pathologic condition underlying the etiology of this condition seems to be a nephritis of varying grade and severity.

Annals of Medical History, New York

September, 1919, 2, No. 3

- Ancient Poems on Infant Hygiene. J. Foote, Washington, D. C.—p. 213.
Walter Harris, A Seventeenth Century Pediatrist. J. Ruhräh, Baltimore.—p. 228.
New Observations in Paleopathology. R. L. Moodie, Chicago.—p. 241.
Jean Paul Marat; Physician, Revolutionist, Paranoiac. C. W. Burr, Philadelphia.—p. 248.
Appreciation of Henry Bence Jones, J. Rosenbloom, Pittsburgh.—p. 262.
Finances of Felix Platter Professor of Medicine at Basle. C. G. Cumston, Geneva.—p. 265.
William Paul Crillon Barton, Surgeon U. S. Navy; Pioneer in American Naval Medicine. F. L. Pleadwell, Washington, D. C.—p. 267.

Boston Medical and Surgical Journal

June 3, 1920, 182, No. 23

- Clinical Importance of Anatomic Anomalies in Biliary Surgery. D. N. Eisendrath, Chicago.—p. 573.
Cesarean Section under Local Anesthesia Combined with Morphine and Scopolamine Narcosis. F. C. Irving, Boston.—p. 578.
Surgical Aspects of Syphilis. W. P. Coues, Boston.—p. 582.

June 10, 1920, 182, No. 24

- Control of Influenza. J. M. Taylor, Philadelphia.—p. 601.
*Differential Diagnosis of Diseases of Hip Joint in Children. A. T. Legg, Boston.—p. 602.
Dr. Jacques Belhomme—Prince of Profiteers. J. W. Courtney, Boston.—p. 606.
Psychical Research and Physician. J. D. Taylor, Boston.—p. 610.
*Perforation of Cecum. E. H. Risley, Boston.—p. 612.
*Congenital Cystic Kidney: Report of Case. H. Green, Boston.—p. 614.

Hip Joint Disease in Children.—The points on which Legg insists are: A more careful history should be obtained; a more complete physical examination should be made; a roentgenogram should be made in every case of suspected bone or joint disease, and every laboratory method should be used before making a positive diagnosis. He emphasizes the extreme importance of early differentiation whenever possible.

Perforation of Cecum.—An entirely sloughed-off gangrenous appendix, with a perforation of the cecum 1.75 cm. in diameter was found in Risley's case.

Congenital Cystic Kidney.—The records of the Children's Hospital, Boston, contain only three cases of congenital cystic kidney. Green's patient was 2 years old. The child had spells of "getting blue," coming usually in the morning. He had them every day for a week, usually lasting fifteen minutes. The mother had also noticed a yellowish-white discharge on the diaper. The urine had been dirty white. Eyes had been puffed, but the mother had noticed that the body was swollen. The child died and at necropsy both kidneys were found lobulated and cystic.

Indiana State Medical Association Journal, Fort Wayne

May 15, 1920, 13, No. 5

- The Physician. "A Doctor of the Old School." E. B. Wynn, Indianapolis.—p. 151.
Influenza in Children. N. B. Powell, Marion.—p. 153.
Clinical Manifestations and Sequelae in Influenza. C. P. Emerson, Indianapolis.—p. 155.
Morbid Anatomy and Bacteriologic Findings in Epidemic Influenza. E. N. Kime, Indianapolis.—p. 157.
Chronic Uterine Infections. W. H. Baker, South Bend.—p. 166.
Neurocirculatory Asthenia. M. F. Porter, Jr., Fort Wayne.—p. 169.

Journal of Infectious Diseases, Chicago

May, 1920, 26, No. 5

- *Experimental Pneumococcus Meningitis in Rabbits and Dogs. G. Idzumi, Philadelphia.—p. 374.
*Biologic Studies of Diphtheria Bacillus. L. C. Havens, Iowa City, Iowa.—p. 388.
Bacillus Enteritidis Infection in Laboratory Rats. P. R. Cannon, Chicago.—p. 402.
*Green Producing Cocci of Influenza. R. Tunnicliff, Chicago.—p. 405.
Fermentation of Polysaccharides by Bacillus Aerogenes. R. L. Laybourn, Ames, Iowa.—p. 418.
Experiments on Immunization with Pseudo-Blackleg Pellets. T. P. Haslam and O. M. Franklin, Manhattan, Kan.—p. 424.
Differentiation of Paratyphoid-Enteritidis Group: VIII. Irregular and Variable Strains. E. O. Jordan, Chicago.—p. 427.
Limiting Hydrogen-ion Concentration of Various Types of Pneumococci. H. M. Jones, Chicago.—p. 434.
Sensitized and Nonsensitized Vaccines in Cholera Immunization. M. Takenouchi, Tokyo.—p. 441.
*Action of Leukocytic Extracts on Phagocytic Activity of Leukocytes. R. Tunnicliff, Chicago.—p. 447.
Acid Production by Streptococcus Viridans in Mediums of Different Hydrogen-ion Concentration. L. G. Grace and F. Highberger, Cleveland.—p. 451.
Variations in Hydrogen-ion Concentration in Uninoculated Culture Medium. L. G. Grace and F. Highberger, Cleveland.—p. 457.
*Immunity in Influenza. E. O. Jordan and W. B. Sharp, Chicago.—p. 463.

Experimental Pneumococcus Meningitis.—The experiments reported on by Idzumi show that pneumococcus cerebrospinal meningitis may be produced in rabbits by injecting virulent cultures directly into the subarachnoid of the spinal cord. The reaction is much less marked in dogs, and usually takes

the form of hyperemia without well defined suppurative changes, owing to the high resistance of this animal to the pneumococcus. The intravenous injection of virulent pneumococci was not followed by the development of meningitis. The intravenous injection of these virulent pneumococci into rabbits, followed by spinal puncture and the subtheal injection of sterile broth and serum, was usually followed by the production of acute meningeal congestion and occasionally by suppurative leptomeningitis. In dogs there was invariably acute congestion with no evidence of suppurative changes. The subtheal injection of virulent pneumococci into the lumbar region of the spinal cord of rabbits is usually followed by the development of a fatal suppurative leptomeningitis accompanied by definite changes in the tissues and spinal fluid, fever, leukocytosis and clinical symptoms of meningitis, such as hyperthesia, opisthotonos and convulsions.

Studies on Diphtheria Bacillus.—By the use of the agglutination test two groups of the diphtheria bacillus have been determined. These groups are distinct, showing no evidence of cross agglutination. The members of the two groups show no differences in morphology or in relative virulence. Evidence is presented by Havens showing that the antitoxins of these groups are not so sharply differentiated as are the agglutinins. Group antitoxins seem to exist in small amounts common to both groups. Havens suggests that the effectiveness of therapeutic diphtheria antitoxin could probably be enhanced by the inclusion in its production of a member of the second or smaller group.

New Influenza Coccus.—Tunnickliff has isolated a peculiar green producing coccus from the edematous brain in influenzal bronchopneumonia, and generally in pure culture. In no instance was the Pfeiffer bacillus cultivated from the brain. The serum of rabbits immunized with strains of this coccus from influenza and its complications contained opsonins and agglutinins for other similar, bile insoluble influenzal cocci, and also for certain influenzal cocci, which were bile soluble and agglutinable by antipneumococcus serums. These results indicate that the green producing influenzal cocci form a group, the members of which are closely related immunologically. The results of absorption experiments with reference to agglutinins also suggest that this is a group of closely allied organisms. Immune rabbit serum treated with the homologous influenza coccus lost its agglutinins for the homologous coccus and for allied influenzal cocci. Absorption with allied influenza organisms also removed the immune bodies for the homologous coccus as well as for the closely related cocci, but absorption with pneumococci of Types 1 and 2 not of influenzal origin, did not remove the agglutinin for the influenza cocci.

Effect of Leukocytic Extracts on Leukocytes.—The results of Tunnickliff's experiments show that the subcutaneous injection of leukocytic extract in rabbits produces an appreciable increase in the number of leukocytes in the circulating blood lasting from one to four days. The leukocytes set free by the extract possess considerably more phagocytic power than normal leukocytes. While the intravenous injection of leukocytic extract produces a more rapid rise in the number and activity of the leukocytes, the duration is shorter than that produced by subcutaneous injection. Leukocytic extract appears to exert no influence on the leukopenia produced by benzene.

Immunity in Influenza.—The results reported by Jordan and Sharp indicate that no marked immunity exists from twelve to fifteen months after a previous attack. They do not show that some degree of immunity may not obtain at an earlier period.

New Orleans Medical and Surgical Journal

May, 1920, 72, No. 11

Pollens in Their Relation to Hay Fever. W. Scheppegegrell, New Orleans.—p. 618.

Clinical and Anatomic-Pathologic Aspects of American Trypanosomiasis. C. Chagas, Rio de Janeiro, Brazil.—p. 630.

Speech Disorders and Corrective Work. S. Spyker, New Orleans.—p. 660.

Difficulties of Speech and Acquired Deafness. S. B. Powers, New Orleans.—p. 667.

New York Medical Journal

June 5, 1920, 111, No. 23

*Radium Treatment of Nonmalignant Uterine Bleeding. W. P. Graves, Boston.—p. 969.

*Endocrine Therapy of High Blood Pressure. S. W. Bandler, New York.—p. 972.

Experiences in Obstetrics. G. L. Brodhead, New York.—p. 974.

Relation of Appendicitis to Intrapelvic Disease in Women. F. C. Hammond, Philadelphia.—p. 978.

*Pregnancy in Advanced Carcinoma of Cervix. G. E. Shoemaker, Philadelphia.—p. 981.

Preservation of Procreative Function in Women. F. W. Langstroth, New York.—p. 982.

Case of Uterus and Both Ovaries in Indirect Inguinal Hernia Sac. N. A. Ludington, New Haven, Conn.—p. 986.

Technic of Vaginal Palpation of Ureter and Ureterotomy. A. M. Judd, Brooklyn.—p. 986.

Bloodless Removal of Vulvovaginal Glands. D. H. Stewart, New York.—p. 991.

Uterine Hemorrhage. J. T. Schell, Philadelphia.—p. 992.

Care of Patient During Puerperal Period. R. McPherson, New York.—p. 994.

Chloresane in Gonorrheal Vaginitis in Children. C. Wachs and C. Mazer, Philadelphia.—p. 997.

June 12, 1920, 111, No. 24

Lethal Dose of Radium in Malignancy. R. H. Boggs, Pittsburgh.—p. 1013.

Standardization of Operations for Internal Hemorrhoids. L. J. Hirschman, Detroit.—p. 1017.

Sodium Carbonates. W. H. Porter, New York.—p. 1019.

Physiology of Carbonated Brine Baths. N. P. Norman, New York.—p. 1022.

Dental Hygienist as a Factor in Dental Progress. A. H. Stevenson, New York.—p. 1024.

Physician and Social Hygiene Problem. W. Bierman, New York.—p. 1027.

Importance of Fundus Examinations as Clinical Evidence of General Disease. S. Morse, New York.—p. 1034.

Tuberculosis Complement Deviation Test. B. Stivelman, Bedford Hills, N. Y.—p. 1037.

Treatment of Patients with Slight Cardiac Failure. H. E. B. Pardee, New York.—p. 1048.

Radium Treatment of Uterine Hemorrhage.—Certain disagreeable sequels from intra-uterine radiation are reported by Graves. Though mentioned by several writers they have received minor attention or have been lost sight of in the reports of brilliant end results. Some of these symptoms are significant chiefly from the psychologic influence which they may exert on the patient, but even these may be of considerable import to the patient's general welfare. The symptoms are nausea, continuation or reappearance of the bleeding, for the cure of which the operation was undertaken, leukorrhea, pain, acute nephritis and nervous symptoms. Graves warns those who have not yet used radium in the treatment of nonmalignant uterine hemorrhage that the immediate convalescence from a given treatment is by no means always a bed of roses. Radium is a powerful and dangerous agent, and in certain cases, not always recognizable. Its use is attended with the gravest risks. The possibilities of radium for harm have not been sufficiently exploited in the literature, and it is the duty of those who are using it to spread the propaganda of caution, in view of the general and, perhaps, indiscriminate distribution which radium is inevitably soon to enjoy.

Endocrine Therapy.—To illustrate the action of thyroid in its protective rôle over the renal epithelium, two cases are reported by Bandler. Observation and therapy have convinced him also that the pituitary, particularly the posterior lobe, plays the most important rôle in fibromyomata of the uterus.

Pregnancy in Advanced Cancer of Cervix.—Shoemaker's patient was 47 years of age, para VII, who was brought in by ambulance when actually in labor, with a history of pulmonary tuberculosis and asthma of long standing. There had been no early symptoms of pregnancy. For six months there had been irregular uterine hemorrhage and increasing abdominal enlargement, with loss of weight. Within two days the hemorrhage had been extreme, requiring packing by her physician. There were labor-like pains, chills, temperature of 102 F., pulse 124, leukocytosis 28,000, rising to 32,000. Apparently the membranes had ruptured within twenty-four hours. The diagnosis was pregnancy with dead child; epithelioma of cervix. A craniotomy was done, the body of the child delivered and the uterus packed. At the end of three

weeks, the patient was out of bed, eating a full diet, with no soreness or pain, very slight vaginal discharge, no bleeding. As radical operation for removal of the disease is out of the question, the future treatment will be palliation with radium.

Philippine Journal of Science, Manila

January, 1920, 16, No. 1

- Intestinal Animal Parasites Found in One Hundred Sick Filipino Children. F. Haughwout and F. S. Horrilleno.—p. 1.
Trypanosome Associated with Fatal Disease in Carabao. F. G. Haughwout and S. Youngberg.—p. 77.
Remote Manifestations of Focal Dental Infections, with Case Reports. B. Fernandez.—p. 89.
Case of Human Synophthalmia. S. De Los Angeles and A. Villegas.—p. 99.

Surgery, Gynecology and Obstetrics, Chicago

May, 1920, 30, No. 5

- *General Method of Repairing Loss of Bony Substance and of Reconstructing Bones by Osteoperiosteal Grafts Taken from Tibia. H. Delangenière, Le Mans, France, and P. Lewin, Chicago.—p. 441.
*Operative Treatment of Vesicovaginal Fistula. E. S. Judd, Rochester, Minn.—p. 447.
*Congenital Anomaly of Duodenum; Surgical Significance. L. Freeman, Denver.—p. 454.
Endo-Aneurysmorrhaphy. R. Matas, New Orleans.—p. 456.
Treatment of Duodenal Fistula. S. McGuire, Richmond.—p. 460.
Some Abdominal Complications of Influenza. A. McGlannan, Baltimore.—p. 462.
Repair of Peripheral Nerve Injuries. G. C. Huber, Ann Arbor.—p. 464.
Clinical Signs of Nerve Injury and Regeneration. L. J. Pollock, Chicago.—p. 472.
Cervical Ribs; Cases and Bibliography. J. A. Honeij, New Haven.—p. 481.
Brachial Birth Palsy and Injuries of Similar Type in Adults. A. S. Taylor, New York.—p. 494.
*Recurrent Vesical Calculi Associated with Calculus in Diverticulum and Contracture of Vesical Orifice. E. G. Davis, Omaha.—p. 503.
Latent Stage and Period of Reinfection in Mastoiditis Due to Streptococcus Mucosus Capsulatus. F. Whiting, New York.—p. 506.
*Syphilis and Pregnancy. W. J. Young, Louisville.—p. 508.
Fractures of Patella, Os Calcis and Olecranon Treated by Fischer's Apparatus. D. Foldes, Cleveland.—p. 510.
*Indications for Cholecystectomy and a Method of Performing It. J. L. Yates, Milwaukee.—p. 514.
Cases of Arthroplasty of Temporomaxillary Joint and of Elbow Joint. A. A. Kerr, Salt Lake City.—p. 518.
Rubber Band Catheter Retainer. B. H. Caples, New York.—p. 521.
Open Reduction Operations of Fractures of Long Bones with Two New Bone Clamps. J. S. Wight, Brooklyn.—p. 522.
Apparatus for Implantation of Radium Emanation Points. R. M. Lewis, Baltimore.—p. 528.

Osteoperiosteal Transplants.—This report is based on 273 observations of osteoperiosteal grafts, and covers the use of the method under normal and abnormal conditions.

Vesicovaginal Fistula.—According to Judd all vesicovaginal fistulas should be considered operable as long as the sphincter muscle of the bladder is intact or can be repaired. If the sphincter has been completely destroyed it will be necessary to consider some other procedure. Suprapubic extraperitoneal operations seem to be indicated if the cystoscopic examination reveals injury to a ureter as well as to the bladder, or it may be indicated if the fistulous tract is adherent to the pubic bone. The plastic vaginal operation consists in completely separating the bladder from the vagina, and closing the two separately and obliterating all dead space. A large percentage of complete and permanent cures follow such operations.

Congenital Occlusion of Duodenum.—Freeman has operated in six cases of partial occlusion of the duodenum at the duodenojejunal angle, simulating pyloric obstruction, which occasionally occurs from the persistence of a condition normally existing in fetal life. In this, the duodenum, instead of appearing in the abdominal cavity from beneath the transverse mesocolon to the left of the spine, as it should, emerges to the right, its transverse and ascending portions possessing a peritoneal covering and mesentery of their own, similarly to the rest of the small intestine, instead of being fixed in fibrous tissue, as is normally the case. At the duodenojejunal angle, however, the bowel is hung up to the root of the colonic mesentery by a firm adhesion (duodenal fold of fetal life), the "kink" thus produced being intensified by the downward pull of the free duodenal loop. This kink is deeply situated and in freeing it care must be taken not to injure the bowel, the inferior mesenteric vein or the left

colic artery. A considerable denudation of the gut may be necessary, which should be covered either by reuniting the peritoneum or by means of a free omental graft.

Recurrent Bladder Calculi and Diverticulum.—The case reported by Davis is of unusual interest, in that the recurrent vesical calculi were associated with a residual urine due to a contracture of the vesical orifice, and in that it was definitely shown that the recurrent vesical calculi formed in turn on a spicule projecting into the bladder from a calculus contained in a diverticulum.

Syphilis and Pregnancy.—A routine Wassermann test made by Young on twenty-five pregnant women was positive in about 25 per cent.; of these 18.7 per cent. were either 3 plus or 4 plus.

Cholecystectomy.—Yates describes a submucous separation of the gallbladder and cystic duct from the serosa and subserosa largely by blunt dissection.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Bulletin of Naval Medical Association of Japan, Tokyo

April, 1920, No. 28

- *Case of Sudden Death from Syphilitic Lesion of Heart. E. Nakajima and J. Ishiguro.—p. 1.
*Case of Hirschsprung's Disease in Old Age. J. Ueda.—p. 2.

Death from Syphilis of Heart.—A man, aged 24, fainted with symptoms of angina pectoris, and died suddenly, while undergoing strenuous muscular exercise, three years after contracting syphilis. At the postmortem two gummas were found in his heart, one situated in the auricular septum, and the other in the aortic orifice and its connecting part with the ventricular septum. The latter pressing on the left coronary artery caused the formation of cicatricial tissue in the posterior wall of the left ventricle near the apex and among posterior papillary muscles. The cause of the sudden death was presumed to be extravasation in the gummas, resulting from muscular strain and followed by total compression of the left coronary artery.

Hirschsprung's Disease in Aged.—Ueda's patient was aged 61. He had suffered from Hirschsprung's disease since the age of 57.

Edinburgh Medical Journal

April, 1920, 24, No. 4

- Scurvy in North Russia. J. D. Comrie.—p. 207.
Causes of Persistence of Puerperal Septicemia Since End of Pre-Antiseptic Times. D. Berry Hart.—p. 216.
Provisional Point Scale for Blind. W. B. Drummond.—p. 232.
Perforated Gastric and Duodenal Ulcer; Ninety Cases. J. W. Struthers.—p. 248.
*Effects of Tuberculin in Lupus Vulgaris. R. Aitken.—p. 251.
Bacterial Types. W. R. Logan.—p. 257.

Tuberculin in Lupus Vulgaris.—Koch's tuberculin was used by Aitken with good results in eleven cases.

Glasgow Medical Journal

April, 1920, 11, No. 4

- Work of Ophthalmic Department of 3rd Scottish General Hospital, Glasgow, from May 27, 1915, to Feb. 1, 1919. A. M. Ramsay and J. H. McIlroy.—p. 145.
*Case of Diffuse Symmetrical Scleroderma. J. Henderson.—p. 160.
"Concentrating" and "Centrifugal" Vibrations. E. F. Cyriax.—p. 165.

Diffuse Symmetrical Scleroderma.—The mode of onset of Henderson's case with muscular and articular pains, is quite in accord with classical descriptions of the disease. The deformities produced in the hands, as the disease progressed, strongly resembled those of rheumatoid arthritis. The steadily progressive character under observation was very striking, despite nourishing diet, tonics, and abundant lubrication of the skin. The very remarkable degree of emaciation reached before death is of itself almost unique. Some idea of the extreme degree of emaciation may be derived from the following measurements taken a few days before death: neck, 9 inches; chest, 24 inches; waist, 18 inches; hips (around), 26 inches; upper and forearm (maximum),

4½ inches; thighs (maximum), 8 inches; calves (maximum), 6 inches. The patient weighed 54 pounds. The mode of death by intercurrent complication is usual, but the exact nature of the pulmonary condition was rendered doubtful by the scarcity of physical signs, the absence of spit, and the scanty degree of febrile reaction. No lesion was found to shed any light on the cause of such a marked condition.

Indian Medical Gazette, Calcutta

April, 1920, 55, No. 4

- *Result of Trials of Sodium Hydnocarpate and Sodium Morrhuate in Thirteen Indian Leper Asylums. E. Muir.—p. 121.
- Case of "Hypospadias Perinealis." S. Chelliah.—p. 123.
- Case of Hernia (Inguinal) of Bladder. Y. V. Chabukswar.—p. 124.
- *Treatment of Leprosy. L. Rogers.—p. 125.
- *Gynocardate and Morrhuate Treatment of Leprosy Based on Forty Cases Treated in Kashmir State Leper Hospital. E. F. Neve.—p. 128.
- *Sodium Morrhuate in Tuberculosis. P. Ganguli.—p. 131.
- Cases of Leprosy in Bangkok, Treated with Sodium Gynocardate "A." M. Cathew.—p. 134.
- Stone in Scrotum. B. R. Gohl.—p. 138.
- Two Cases of Cerebrospinal Meningitis due to Diplococcus Intracellularis, Treated with Intrathecal Injections of Antimeningococcic Serum in Field Ambulance in Mesopotamia. J. C. John.—p. 139.
- After-Treatment of Leprosy. E. Muir.—p. 139.

Sodium Hydnocarpate and Sodium Morrhuate in Leprosy.

—The results obtained from the use of sodium hydnocarpate, and sodium morrhuate in the treatment of 300 cases of leprosy are analyzed by Muir. These cases were of the anesthetic, mixed and nodular types, 179, 81 and 40 cases, respectively. The dosage of both drugs varied from ½ c.c. to 5 c.c. of a 3 per cent. solution, beginning with the smaller dose and gradually increasing to the larger. Injections of hydnocarpate were chiefly given intravenously and the morrhuate was given hypodermically or intramuscularly, and in some cases intravenously. Of the patients treated with hydnocarpate, there was improvement in 132, and much improvement in fifty-eight. In several cases the lesions disappeared entirely. With sodium morrhuate no patients were recorded as being worse, 33 were not improved, 48 were slightly improved, and 36 were much improved. Thus 71 per cent. showed some measure of improvement, of which 31 per cent. showed much improvement. The opinion is that the best results are obtained in anesthetic cases with sodium hydnocarpate, but that the veins soon become blocked, and that sodium morrhuate has then to be resorted to as it can be given hypodermically and intramuscularly. In nodular leprosy sodium morrhuate does not appear to be in any respect behind sodium hydnocarpate, and it has the advantage that it may be injected in small doses into the nodules where it acts locally on the bacilli, causing first a swelling of the nodule infiltrated and thereafter a shrinking and softening, while the local lymphatics become temporarily red and swollen.

Morrhuate in Leprosy and Tuberculosis.—Rogers has recently been giving an ethyl ester morrhuate in both leprosy and tuberculosis by the subcutaneous method with very little trouble to the patient and apparently distinctly favorable results, although much further experience will be necessary before the exact value of the new preparation can be decided.

Gynocardate and Morrhuate in Leprosy.—Neve's investigation shows that on an average treatment of six months about half the patients appear to derive benefit from the gynocardate and morrhuate treatment. Those not definitely improved appear to remain stationary. Only about 10 per cent. show fresh manifestations of disease while under treatment, some of which have been due to the freeing of toxins by overaction of the drug. Laryngeal and ocular leprosy require great caution in the exhibition of these remedies.

Sodium Morrhuate in Tuberculosis.—Ganguli is thoroughly convinced of the value of sodium morrhuate treatment in pulmonary tuberculosis. It was noted that in cases where intravenous injections were given, the results were far more satisfactory than those obtained by the subcutaneous method. Rogers' directions were strictly followed, beginning with ½ c.c. of a 3 per cent. solution, gradually increased by ¼ c.c. once or twice a week up to 2 c.c. after which doses were

increased by ½ c.c. weekly till the maximum of 4 c.c. had been reached. Besides bacteriolytic action as shown first by beading and then disappearance of the tubercle bacillus from the sputum, there is some fibrolytic action marked in cases where sodium morrhuate has been tried.

Journal of State Medicine, London

April, 1920, 28, No. 4

- Public Health Administration in Belgium. R. Sand.—p. 97.
- Infection and Predisposition in Tuberculosis. S. Delépine.—p. 107.

Journal of Tropical Medicine and Hygiene, London

March 15, 1920, 23, No. 6

- Four Cases of Bilharzia Disease Treated by Tartar Emetic. F. G. Cawston.—p. 69.
- Case of Bronchospirochetosis (Castellani's) Bronchitis. I. Iacona.—p. 70.

April 1, 1920, 23, No. 7

- Larvae-Destroying Action of Small Fish in Malay Archipelago. N. H. Swellengrebel and J. M. H. Swellengrebel-de-Graaf.—p. 77.

April 15, 1920, 23, No. 8

- Some Soudanese Diphtheroids. A. J. Chalmers and N. MacDonald.—p. 85.

May 1, 1920, 23, No. 9

- Higher Fungi in Relation to Human Pathology. A. Castellani.—p. 101.
- *New Vehicle for Emetin Bismuthous Iodid. T. J. G. Mayer.—p. 110.

Mutton Fat as Vehicle for Emetin Bismuthous Iodid.—The problem of finding a vehicle for this drug which would pass through the stomach unchanged and be digested by the intestinal juices, was solved by Mayer by rubbing up the drug with sixteen parts of mutton fat, molding the mass into rounded pills of about 7 grams each in weight, and covering each with a layer of melted mutton fat applied with a paint brush. These pills pass through the stomach unchanged. The fat is solid at body temperature, is not digested until it is too far from the pyloric orifice to be regurgitated and cause vomiting or even nausea. That the drug is altered by the intestinal juices is shown by the discoloration of the feces and the cure of the dysentery in a case in which these pills were used.

Quarterly Journal of Medicine, Oxford

April, 1920, 13, No. 51

- *Segmental Hyperalgesia in Visceral Lesions. D. W. C. Jones.—p. 241.
- *Anaphylaxis in Treatment of Hemophilia. H. W. C. Vines.—p. 257.
- *Fat Metabolism in Health and Disease with Special Reference to Infancy and Childhood. H. S. Hutchison.—p. 277.
- Mechanism of Postoperative Massive Collapse of Lungs. J. C. Briscoe.—p. 293.

Segmental Analgesia in Visceral Lesions.—Inflammation of any viscus induces a state of hyperalgesia in the skin supplied by the same segments of the spinal cord as the viscus. If this is true, it follows that if the nerve supply of the viscera is known, it is possible to diagnose inflammation in any viscus by demonstrating hyperalgesia in the corresponding area of the skin. The area of distribution which Jones mapped out for each segment is described in detail. The number of persons examined for the data in this paper was 1,040, of which 120 were normal men, used as controls. But many of the patients were suffering from more than one disorder, as for instance trench fever and bronchitis, or dysentery or endocarditis, so that more lesions than patients were examined. The results obtained show that segmental hyperalgesia is not universally present in visceral disease. In cases of very acute illness, although symptoms may be marked, hyperalgesia is often not demonstrable, probably because the attention cannot be concentrated. In the most favorable circumstances, segmental hyperalgesia will not be found in more than three cases out of four, and it will rarely be found in any case of very acute illness. Segmental hyperalgesia in the diagnosis of visceral lesions has considerable value in positive cases but is not infallible, and its negative value is negligible.

Anaphylaxis in Treatment of Hemophilia.—The intradermal reaction is a modified form of anaphylactic shock of general as well as of local significance, and in which the stimulation of the thrombogenic functions of the somatic cells is a salient feature. The changes in coagulability of

the blood in anaphylactic shock occur in two stages: a period of acceleration which occurs early, followed by a period of retardation; further, that the predominance of the former or the latter depends on the lesser or greater severity of the shock. The intoxicating injection in a sensitized individual may act as a catalytic agent in inducing the intracellular reactions which constitute the anaphylactic phenomena. In cases of hemophilia, Vines says, the duration of the effect of the intradermal reaction is dependent on the duration of the anaphylactic period. But the shorter or longer duration of this effect is also directly dependent on the greater or lesser severity of the hemophilic condition.

Fat Metabolism in Marasmus.—Observations made on the digestion and absorption of fats in cases of marasmus or infantile atrophy are reported by Hutchison. They show that the digestion of fats in infantile atrophy, rickets, and tetany is carried out as efficiently as in healthy children. There is a slightly greater loss of fat in infantile atrophy, due to the motions being larger than in healthy children, but the excessive loss, which amounts to 0.88 gm. per day, cannot be neglected so far as nutrition is concerned. There is no true deficient absorption. In rickets, the excess loss of fat per day over that in healthy children averages 0.6 gm., an amount which is quite sufficient to affect nutrition. In tetany, the excess loss is 2.4 gm. per day. This is due chiefly to the passage of larger motions than normal, viz. 14.4 gm. compared with 9.9 gm., and to a less extent to a true deficient absorption, since the fat in the feces averages 38 per cent. This loss is sufficient to affect nutrition. Other facts point to a normal fat absorption in atrophy, viz. the increased amount of fat absorbed with an increased intake; and the fact that improvement frequently follows the lowering of the fat content of the milk. Saponification of fats in the intestine does not affect the absorption of fats. The fairly constant percentage of fat in the feces of man and other animals suggest that fecal fat has a function to perform, and that it is not a pure excretion. There is no evidence, however, to indicate what this function is.

Annales de Médecine, Paris

January, 1920, 7, No. 1

Pathologic Anatomy of Lethargic Encephalitis; Four Cases. P. Marie and C. Trétiakoff.—p. 1.

*The Arterial Tension in Chronic Pulmonary Tuberculosis. A. B. Marfan and J. B. Van Nieuwenhuysse.—p. 16.

*The War as Factor in Pulmonary Tuberculosis. L. Bernard, C. Mantoux and P. Jacquet.—p. 37.

*Rectocolitis of Uremic Origin. R. Bensaude and others.—p. 41.

*Bronchopulmonary Spirochetosis. M. Salomon.—p. 53.

The Blood Pressure in Tuberculosis.—The results of the research reported indicate that when the systolic, the maximal, arterial tension is normal, or even slightly above normal, in chronic pulmonary tuberculosis, the trend of the disease is toward recovery, or at worst the course is very slow. With a low systolic pressure, a favorable course is the exception. The minimal or diastolic pressure does not vary much from normal. The arterial tension cannot be estimated by a single examination; several readings are required, the tests made all under the same conditions.

The War and Pulmonary Tuberculosis.—Bernard and his co-workers analyze conditions in 872 cases of pulmonary tuberculosis in soldiers some of whom had been on active service at the front for nearly the entire war. They could not have stood the strain of the campaign for so long if they had not been sound to begin with, and the disease got a foothold in them as the direct consequence of the war conditions at the front. These vigorous men were "wounded" by the tubercle bacillus just as surely as their mates were wounded by the enemies' projectiles.

Hemorrhagic Rectocolitis of Uremic Origin.—Bensaude, Cain and Antoine refer to dysenteriform enteritis in the course of acute and chronic uremia. In a case reported, with the microscopic findings, the woman's mental confusion, the dysenteriform stools with red blood and the intense albuminuria and terminal coma were explained by the pronounced atrophy of both kidneys and adenomatous condition of the suprarenals. Nearly all the organs showed congestion and

hemorrhages, most pronounced in the lower bowel—all evidently of toxic origin. In a second case, hypertrophy of the prostate had induced retention, distention of the bladder and nephritis, the consecutive uremia causing intestinal hemorrhages, but there was no ulceration; the lesions in the intestines were exclusively mechanical, and they were found throughout the entire digestive tract from stomach to anus. Instead of ascribing the blood in the stools to hemorrhoids, the rectoscope will reveal the toxic injury of the intestine.

Bronchopulmonary Spirochetosis.—Salomon gives a critical review of the literature on this subject since Castellani's first report in 1904. The disease has been reported from most parts of the tropics, from Missouri, Ohio, Switzerland, Italy, and in 1918 was noted in France. The spirochetes in the sputum can be readily seen with the dark field, and the disease is highly contagious. The diagnosis is based usually on the discordance between the profuse and protracted, blood stained expectoration and the relative mildness of the auscultation findings. No fatal pure case has been recorded as yet; the subacute cases keep up usually for two months, and the chronic for years. Isolation is indispensable not only to protect others but to protect the patient against superposed infection which is liable to be particularly injurious. In treatment of the chronic form, general hygiene and fresh air, arsenic and other tonics are useful, supplemented by some form of arsphenamin by the vein, especially in the fetid and gangrenous cases. Intratracheal injections or inhalations of balsamics might be tried as also intramuscular injections of iodipin as recently recommended by Najib Farah.

Paris Médical, Paris

April 17, 1920, 10, No. 16

*Amblyopia from Carbon Disulphid Poisoning. F. Terrien.—p. 317.

*Pulsation at the Arch of the Aorta. Babes and Dumitresco.—p. 321.

*Fistulization of the Trachea. G. Rosenthal.—p. 325.

Case of Pulmonary Mycosis. Jourdan.—p. 326.

Open Plaster Jacket. L. Thyss-Monod and G. Monod.—p. 328.

Amblyopia from Poisoning with Carbon Disulphid.—The two men were employed in making commercial mustard plasters, the mustard being spread on a base of a solution of rubber and carbon disulphid. After doing this work through the hot weather in a poorly ventilated workroom, both developed bilateral central scotoma with considerable restriction of the visual field, the clinical picture of alcohol or tobacco retrobulbar axial neuritis. The scotoma was more extensive than with alcohol or tobacco poisoning, and objects were seen as through a veil. The poisoning may induce general symptoms, besides, vomiting, colics and nervous disturbances, dizziness and delirium, and sensations of chilliness and of electric currents, especially in the arms, tremor and even paralysis. In the cases on record, recovery ensued in 33 per cent. and improvement in 25 per cent. In the two cases reported here, there has been no improvement in the impaired sight during the three months to date. Intoxication occurs by inhaling the vapor. Treatment may include strychnin and weak doses of iodids, diaphoresis, steam baths and infusions of jaborandi. Ample ventilation of the workrooms is imperative.

Pulsation in the Aorta Above the Sternum.—Babes and Dumitresco refer to pulsation in the aorta when the finger is worked down between the two sternocleidomastoid muscles where they join the sternum. The pulse beat is vertical and strong, and in 500 persons examined they found this pulsation not only with dilatation of the aorta but also whenever the heart was pushed up toward this region by hypertrophy of the left ventricle or by pressure in the chest or abdomen from pericarditis with effusion, ascites, abdominal tumor or great enlargement of the liver.

Induced Fistulization of the Trachea.—Rosenthal comments on our inconsistency as we do not hesitate to do tracheotomy at once when an acute throat trouble threatens suffocation, but we seldom think of doing this when the throat disease is slowly progressive although the ultimate outcome is the same suffocation in both. With tuberculosis of the larynx, he advises an early small opening into the trachea, a mere fistula, with a miniature tracheotomy tube. He introduces first a curved needle, only 6 or 7 mm. in diameter, in the

cricothyroid space. The curving of the needle prevents injury of the posterior wall of the larynx, and it permits local medication. He follows this with the tracheotomy tube; the diameter of the tube is child's size for an adult, although the outside portion is standard adult size.

Presse Médicale, Paris

May 1, 1920, 28, No. 27

The Fundamental Laws for Bone Grafting in Treatment of Pseudarthrosis. F. A. Albee (New York).—p. 261.

*The Saliva in Diabetes. F. Rathery and L. Binet.—p. 263.

*The Blood Pressure and the Gallop Sound. A. Amblard.—p. 263.

*Plurality of Spirochetes of Syphilis. P. Pagniez.—p. 266.

The Saliva in Diabetes.—Rathery and Binet present evidence that the salivary glands are involved in the production of diabetes; sugar may be eliminated in the saliva as well as or in the place of its elimination in the urine. They noted elimination of glucose under pilocarpin in the saliva of a dog, after pancreatectomy, that had 3 gm. of glucose per liter of blood. Ferrannini has reported the case of a man of 70 with grave diabetes but no sugar in the urine. There was a constant flow of saliva, to a total of several liters a day, and it contained from 1 to 2.5 per cent. glucose. On an antidiabetic diet the secretion of saliva returned to normal and the sugar disappeared from it. Pellegrino has also published a case in which glycosuria alternated with sialorrhea, with much sugar in the saliva.

The Gallop Sound.—The midsystolic and the presystolic gallop sounds, with their different mechanisms and origins, both indicate that the heart is weakening. They appear as the blood pressure rises and disappear as the maximal pressure drops. With the midsystolic gallop sound, phosphorus, strychnin or spartein should be pushed to tide the myocardium along until it has regained strength. The high blood pressure is not permanent. The presystolic gallop sound is heard with permanently high blood pressure, and this has to be combated with venesection, diuretics, purges, and dieting, and the weak heart must be sustained with digitalis and absolute repose. Digitalis is required whenever the ear or the hand detects a tendency to the presystolic gallop after a test exertion.

Plurality of Syphilis Spirochetes.—Pagniez reviews recent research by Levaditi and others which is rendering more and more plausible the assumption that the spirochetes which induce cutaneous syphilitic manifestations, the dermatropic, are a different strain from those which induce general paresis. Animals inoculated with the one can develop a new primary chancre when inoculated with the other. The dermatropic strain after passage through rabbits continues to be pathogenic for monkeys, while the neurotropic loses its virulence for monkeys after a single passage through a rabbit. The neurotropic virus was applied to a scarification on the arm of a man who volunteered for the purpose, but there have been no local or general symptoms during the months since, while the dermatropic virus got into a scratch on the hand of one of the workers and induced a typical chancre with positive Wassermann reaction. A rabbit that had recovered from a dermatropic chancre was inoculated in one testicle with the dermatropic and in the other with the neurotropic virus; the latter alone developed a chancre. Virus from persons with general paresis behaves quite differently from the virus from skin lesions. A number of instances are cited in which persons infected from the same source all developed general paresis in the course of time. In the experiments in animals, the dermatropic incubation period was about six weeks; with the neurotropic, four months, and the lesions presented quite a different aspect.

May 5, 1920, 28, No. 28

*Pylorospasm. F. Ramond.—p. 273.

Sclerosis in Patches from Shell Concussion. Ducamp and Milhaud.—p. 275.

Apparatus for General Anesthesia with Ethyl Chlorid. H. Abrand.—p. 276.

Pylorospasm.—Ramond remarks that aerophagia may simulate pylorospasm but the tape measure will show that the distention with this is real, while it is only subjective

with true pylorospasm. With the latter a little of the bismuth suspension always passes at once through the pylorus before it has a chance to contract. The cylindrical shadow in this upper part of the duodenum is separated from the shadow cast by the stomach by a nearly horizontal open band in which there is no shadow.

Revue Neurologique, Paris

January, 1920, 27, No. 1

Cerebral Paraplegia. P. Marie and C. Foix.—p. 1.

Early Reflex Contracture. S. Davidenkof.—p. 9.

Senile Skin in Child. P. Haushalter.—p. 15.

*Electric Tests of Skin Sensibility. V. Neri.—p. 19.

Constitutional and Periodical Alternations of Excitement and Depression. R. Benon.—p. 30.

Electric Tests of Sensibility of the Skin.—Neri remarks that although electric tests of the sensibility of the skin are not particularly instructive in normal conditions, in pathologic conditions they reveal characteristic changes of great importance for the diagnosis and progress of the case. He prefers the unipolar Erb electrode; this reveals the differences between the two halves of the body, the sensation just below the sensation of pain, in examining organs and individual nerves, in connection with the conductivity of the nerve. Several illustrations are given showing the more important points. In conclusion he emphasizes the possible medicolegal importance of the findings, confirming or refuting the subjective claims. With central lesions he always found complete parallelism between the afferent tracts and the sensitive organs.

Schweizerische medizinische Wochenschrift, Basel

April 22, 1920, 50, No. 17

Auto-Urine Reaction in the Tuberculous. W. Lanz.—p. 321.

Apparatus for Measuring and Exercising Pronation and Supination of the Hand. F. v. Mandach.—p. 333.

*Ascaris as Cause of Pulmonary Disease. G. Steiner.—p. 334.

Ascaris as Cause of Pulmonary Disease.—Steiner comments on the importance of the statements in Ransom's recent article with this title in *THE JOURNAL* 73:1210, 1919.

Pediatrics, Naples

May, 1920, 28, No. 9

*After Osteosynthesis. A. Curcio.—p. 401.

Bulbar Paralysis in Children. F. Amenta.—p. 408.

Relations Between Pulse and Viscosity of Blood. Nizzoli.—p. 419.

After-Treatment of Fractures.—Curcio emphasizes the necessity for utilizing the traction of the muscles in the healing of fractures, so that this will promote instead of interfering with regeneration of the part and restoration of function. He insists that perfect anatomic reconstruction is mainly the result and not the cause of perfect recovery of function.

Policlinico, Rome

March 29, 1920, 27, No. 13

*Present Status of Vagotonia. P. Alessandrini.—p. 379.

*Eruptive Disease. D. Falcioni.—p. 385.

Vagotonia and Sympathicotonia.—Alessandrini admits that the assumption of vagotonia as opposed to sympathicotonia as the explanation of visceral neuroses has much promoted the study of neuroses. But his experience with drug tests in 100 persons has confirmed the general view that the subject is not so simple. No two of his subjects responded alike, some of the organs showing greater susceptibility than others, and the findings testifying to dissociation; some reacted alike to both epinephrin and pilocarpin; others did not respond to either. Each organ has its isolated balance, independent of all the other analogous systems in the organism. Clinical distinctions based on vagotonia and sympathicotonia are artificial.

Eruptive Disease with Rheumatoid Symptoms.—Falcioni has encountered a number of cases of an acute disease which commenced with rheumatoid pains, stomach derangement and rising temperature, and at the fourth or fifth day an intense eruption of a maculopapulous type but no pruritus; the temperature may reach 40 C., but declines as the eruption appears. The whole course of the disease is about two weeks,

and it is not contagious. Women form the main contingent, and there is always a history of overexertion or exposure. The eruption differs from those of the usual contagious eruptive diseases although there is some resemblance to the incipient stage of smallpox. In two of his cases typhus was diagnosed at first, but there was not the sudden onset of typhus nor the tendency to hemorrhage, and the nervous system did not seem to be involved in any of his cases.

Riforma Medica, Naples

April 3, 1920, **36**, No. 14

*Diathermy and Stomach Functioning. G. Setzu.—p. 342.

Arteriovenous Aneurysm in Internal Carotid. De Raffe.—p. 345.

*Injections of Milk in Venereal Disease. M. Trossarello.—p. 350.

Influence of Diathermy on Stomach Functioning.—Setzu found that thermopenetration applied to the stomach had a constant and uniform stimulating and regulating action on both motor and secretory functioning and on the relief of pain, far beyond what can be realized with heat from without. The temperature of the stomach was raised by about 2 degrees C.

Protein Therapy in Gonococcus Infection.—Trossarello has been giving parenteral injections of milk in treatment of forty-five cases of gonococcus infection and in fifteen cases of venereal bubo. In the apyretic there is an interval of two or three hours before the chill follows the injection, and this allows ambulatory treatment as the patients are able to reach home before it. No benefit was apparent in the cases of urethritis, prostatitis, epididymitis and arthritis, but in ovarian and tubal disease marked benefit was realized. All were improved, some after a single injection. His results in these twenty cases of adnexitis surpassed, he says, those obtained with specific vaccines or antiserums; the pain subsided promptly even before any objective improvement was apparent. The outcome in his fifteen cases of venereal adenitis justifies the tentative application of the simple and easy treatment to abort the lesion. He injected into the buttocks 5 or 10 c.c. of ordinary milk, at intervals of three or four days, to a total of five injections. The febrile reaction seems to be the main factor; the best results were noted in the patients that presented the strongest reactions.

Rivista Critica di Clinica Medica, Florence

Feb. 25, 1920, **21**, No. 6

*Chemotherapy in Rabies. A. Martiri.—p. 61. Conc'n.

March 5, 1920, **21**, No. 7

Echinococcus Cysts in Liver. F. Schupfer.—p. 73. Cont'n.

Scrap of Shell in Myocardium. A. Carlesi.—p. 79.

Chemotherapy of Rabies.—Martiri has been experimenting with drugs known to act on protozoa, and states that quinin and its derivatives seem to neutralize rabies virus in vitro but no action was apparent in the living body.

Brazil-Medico, Rio de Janeiro

March 20, 1920, **34**, No. 12

*Gastric Pains. Rocha Vaz.—p. 183.

*Retromalar Foreign Body. Renato Machado.—p. 185.

*Dysenteroid Syndrome with Inherited Syphilis. Calixto de Medeiros.—p. 189.

Ergographic Findings with Fatigued Muscles under Esmarch Bandage. M. Ozorio de Almeida.—p. 190.

March 27, 1920, **34**, No. 13

Eruptions. F. Terra.—p. 199.

Leishmaniasis in São Paulo. Romeu da Silveira.—p. 200.

Action of Collargol on Micro-Organisms in Human Conjunctiva. H. Xavier.—p. 206.

Acute Fatal Diverticulitis. O. Clark.—p. 207.

Pain in the Stomach.—In this third instalment of his study of gastric pains, Rocha Vaz reviews the conflicting theories that have been advanced to explain hunger pain. His own view is that hunger pain is merely an exaggeration of the normal sensation of hunger; in his own cases of duodenal ulcer, the hunger pain occurred constantly only when the ulcer was close to the pylorus, and the stomach and the bowel below were intact. Necropsy showed ulcers in the second part of the duodenum in two cases in which there had not been the slightest symptoms from the stomach. The hunger pain with

duodenal ulcer usually merges into the pain after eating and finally into the clinical picture of stenosis of the pylorus.

Access to Foreign Body Behind the Malar Bone.—Renato Machado gives an illustrated description of the removal by way of the vestibule of the mouth of a scrap of shell close to the lower margin of the orbit, behind the malar bone.

Dysenteroid Symptoms with Inherited Syphilis.—De Medeiros' two cases warn that when the symptoms of dysentery persist unmodified by the usual measures, the possibility of syphilis should be borne in mind. One patient was a girl of 2, the other a woman of 32. The latter had had the rebellious diarrhea for three years, the stools sometimes containing blood, with no benefit from persevering antidyenteric treatment of all kinds. Improvement began at once from the first mercurial injection. The symptoms had been noted for fifteen months in the infant who had become extremely debilitated and apathetic, with ten or twenty passages a day.

Cronica Médica, Lima, Peru

March, 1920, **37**, No. 681

*Tuberculous Floating Kidney. E. Odriozola.—p. 85.

Simplified Ureosecretory Ambard Index. M. A. Velásquez.—p. 88.

Teaching of Anatomy in Early Peru. F. Quesada.—p. 92.

*Diagnosis of Ascariasis. E. A. Martínez.—p. 99.

Localization of Disease in the Heart. M. Arias Schreiber.—p. 102.

Tuberculous Floating Kidney.—Odriozola remarks that a floating kidney in the young should suggest possible tuberculosis. In a case reported the first symptom in the youth of 18 had been hematuria without known cause and without pain. The urine also contained much sediment. The absence of uremia confirmed further the tuberculous nature of the process. Even in advanced cases of tuberculosis the intact portions of the kidney seem to become more functionally active and thus ward off uremia.

Ascariasis.—Martínez compares four cases in adults to show the wide variety of symptoms for which the ascaris may be responsible. Its effects are felt not only in the digestive tract but in the nervous system, although there are no pathognomonic disturbances. Even eosinophilia may be absent, and the clinical pictures are of the most varied types. In these cases the diagnosis had been a neurosis, epilepsy, essential anemia or enteritis at first. No ova could be detected in the stools, but the voiding of one or more ascarides and the subsidence of the clinical picture thereafter apparently confirmed their causal connection.

Gaceta Médica de Caracas

Jan. 15, 1920, **27**, No. 1

Opening Lecture of Clinical Medicine Course. F. A. Risquez.—p. 2.

Jan. 31, 1920, **27**, No. 2

Chaulmoogra in Treatment of Tuberculosis. E. González Rincones, and others.—p. 13.

Repertorio de Medicina y Cirugía, Bogota

March, 1920, **11**, No. 6

*Acidosis in Children at Bogotá. C. Torres.—p. 283.

Mechanical Stenosis of Pylorus from Fibrous Band. A. Echeverri Marulanda.—p. 311.

Treatment of Fractures. L. Leyva Pereira.—p. 313.

Acidosis in Children.—Torres made a special study of acidosis in children when in this country, publishing his conclusions in the *Am. J. Dis. Child.* **14**:365, 1917. He here expatiates on the exceptional frequency of acidosis in children at Bogotá, especially in infants, and its exceptional gravity, which he ascribes to racial factors, the altitude and the tropical climate. The perversion of the metabolism responsible for it may be primary from insufficiency of the liver or ductless glands, entailing overproduction of acids, or secondary to some disturbance which depletes the alkali reserves or causes retention of acids normally produced, or there may be acidosis from digestive or renal disturbance. The reaction of the blood is the only reliable criterion, and he describes the simple exosmosis test for this. The urine can be made and kept alkaline much more readily when the food contains little protein and abundance of vegetables. Normal fat and protein metabolism is contingent on keeping the digestion of carbohydrates as perfect as possible. The

uncontrollable vomiting in acidosis may entail hematemesis, and the only means to ward this off is by allowing nothing, not even water, by the mouth. We must be firm to enforce this, knowing that children have got along for a whole month without water by the mouth, when fluids were supplied by the rectum or by infusion. The needed carbohydrate is best supplied in the form of a 5 per cent. solution of dextrose by the rectum, or by the mouth in small repeated doses if the stomach will bear anything. Alkalines, sodium bicarbonate or sodium citrate can be given by rectum, vein, or subcutaneously until they can be given by the mouth. He injected 100 c.c. by the vein of a mixture of 12 gm. of dextrin; 10 gm. of sodium bicarbonate; 0.10 gm. calcium chlorid and 300 c.c. of distilled water, repeating the injection once or twice a day. In four infants less than a year old he saved two by this means, injecting the mixture directly into the longitudinal sinus at the anterior fontanel. Transfusion of blood also proved successful in one infant of 14 months. Dextrin, well boiled vegetables and skimmed milk are the main reliance as the child improves.

Revista de la Asoc. Médica Argentina, Buenos Aires

December, 1919, 31, No. 181

- Pathogenesis of Diabetes. A. Pi y Suñer.—p. 517. Cont'n.
Lymphogranulomatosis. F. C. Arrillaga.—p. 535. Cont'n.
*Cancer of Male Mamma. B. N. Calcagno.—p. 558.
*Arterial Anesthesia. B. N. Calcagno.—p. 566.
Palliative Trephining. J. M. Jorge.—p. 568.
*Correction of Cicatricial Atresia of the Nose. J. M. Jorge.—p. 597.
*Conservative Treatment of Fracture. Rauenbusch.—p. 606.
Treatment of Acute Stenosis of the Larynx. G. Zorraquin.—p. 620.

Cancer of Male Mamma.—Calcagno's patient was a man of 70 with weak heart and lungs, and he removed the malignant growth under infiltration anesthesia supplemented by blocking the brachial plexus. Postoperative radium treatment for twenty-four hours induced immediate necrosis, leaving two cavities which were long in healing, as was also a focus of congestion in the lung beneath.

Arterial Anesthesia.—Calcagno was compelled to amputate after the foot of the man of 43 had been injured in a railroad accident, the symptoms by the third day indicating severe infection and incipient gas gangrene. Both general and local conditions were alarming. He applied an Esmarch bandage at the middle and upper thirds of the thigh and then punctured the femoral artery through the skin and injected 0.25 gm. of procain with epinephrin, compressing the artery above at once. The anesthesia was complete in five minutes, and the temperature dropped the same day to normal. He reiterates in conclusion that the smooth and rapid recovery in this and his other cases refutes the objection that has been made to this arterial technic that it might favor the spread of the infectious process. It is merely a form of local anesthesia, and leaves vital organs unmolested.

Atresia of the Nasal Passages.—Jorge gives an illustrated description of the technic with which he corrected atresia following smallpox. The flaps for the purpose were taken from the cheek and there has been no retraction during the more than a year since. In another case he corrected the atresia by means of a flap from the arm.

Compound Fractures.—Rauenbusch gives twenty roentgenograms of different types of serious war fractures observed during his service in military hospitals in Germany during the war, and the treatment for each type.

Semana Médica, Buenos Aires

Jan. 1, 1920, 27, No. 1

- Tuberculosis in Argentine Navy. J. W. Howard.—p. 1.
Hot Beverages as Factor in Gastric Cancer. Bullrich.—p. 15.
*Evolution of Syphilography in France. E. Jeanselme.—p. 18.

Syphilography in France.—Summarized in THE JOURNAL, Oct. 25, 1919, p. 1315, when published elsewhere.

Jan. 8, 1920, 27, No. 2

- Influenza as Pathologic Entity. J. Méndez.—p. 37.
Organized Prophylaxis of Tuberculosis. W. Alvarcz.—p. 48.
Vaccine Therapy of Diphtheria. M. Spangenberg.—p. 56.
Psychophysiology of the Aviator. J. A. López.—p. 58. Cont'n.
Urologic Examination. E. Castaño.—p. 65.
*Normal Serum in Treatment of Anthrax. F. v. Hutyra and R. Maninger.—p. 71.

Normal Serum in Treatment of Anthrax.—The tabulated results show that no protection was afforded rabbits inoculated with anthrax by treatment with normal beef, horse or sheep serum.

Siglo Médico, Madrid

Feb. 28, 1920, 67, No. 3455

- *Congenital Tumors of the Head. Goyanes.—p. 141.
Cerebral Syphilis and Syphilitic Psychoses. Lafora.—p. 144. Cont'n.

March 6, 1920, 67, No. 3456

- Tabes and Disturbance in Vision. E. Fuchs (Vienna).—p. 161.

March 20, 1920, 67, No. 3458

- Cesarean Section in Pneumonia During Pregnancy. J. Torre y Blanco.—p. 204.
Malacia of Medulla Oblongata. J. M. de Villaverde.—p. 206. Begun in No. 3457, p. 181.

Congenital Tumors of the Head.—In the first of the two cases illustrated by Goyanes, a large tumor at the vertex swung to and fro on a small pedicle. It had been noted from birth, and the child was a little over a year old when the meningocele was successfully removed. The second patient, a robust young man, had a congenital tumor corresponding to the superior longitudinal sinus of the dura. It fluctuated in size and was about as large as an egg when removed. On compression the tumor flattened out, confirming its hematocele nature. The profuse hemorrhage was arrested by tamponing which had to be kept up for eight days, the skin sutured over the gauze.

Deutsches Archiv für klinische Medizin, Leipzig

June 12, 1919, 129, No. 3-4

- *The Auricle Electrocardiogram. G. Ganter.—p. 137.
*Sphygmovolumetric Research in Heart Disease. A. Reinhart.—p. 167.
*War Nephritis. E. R. Toenniessen.—p. 183.
*Agglutination After Vaccination against Typhoid. Brösamlen.—p. 208.
Classification of Stages of Tuberculosis. III. K. E. Ranke.—p. 224.
*Improved Index of Kidney Functional Capacity. J. T. Peters.—p. 253.
*Pathologic Physiology of Innervation of Stomach. P. Klee.—p. 275.
*Roentgenographic Examination of the Liver. E. Rautenberg.—p. 296.

Electrocardiogram of the Auricle.—Ganter found that the electrocardiogram of the auricle behaved differently from the electrocardiogram of the ventricle under the application of heat and cooling. He accepts this as evidence that the electrocardiogram from these two regions differs in its nature. The findings throw light further on the conduction of the impulse, as he explains.

Volume of the Pulse.—Reinhart was unable to find any characteristic feature in the systolic increase in the volume of the pulse peculiar to certain types of valvular disease. With failing compensation, the improvement under the influence of certain drugs is plainly evident.

War Nephritis.—Among the practical conclusions from Toenniessen's study of 254 cases of war nephritis (mortality, 3 per cent.) is that the diuretics to be selected should be those which act on the elements in the kidneys which are least damaged by the disease. This can be determined by the water and concentration tests and by estimation of the residual nitrogen, the amount of urine, the specific gravity and the behavior of the blood pressure. He warns that theobromin-sodium salicylate sometimes materially exaggerated the albuminuria in his total of 296 nephritis cases.

Agglutination Test After Vaccination Against Typhoid.—Brösamlen reports a positive response to the Gruber-Widal agglutination test in 74 per cent. of 482 healthy persons who had been vaccinated against typhoid. The reaction was still positive in 100 per cent. in a week or two after the vaccination, in 50 per cent. by the end of a year, and in 41 per cent. by the end of the second year. When any of the vaccinated developed typhoid, the titer ran up rapidly in 53 per cent., so that a rapid rise is corroboratory evidence of the typhoid nature of a febrile disease when at least three months have passed since the vaccination.

Improved Ambard Index of Kidney Functioning.—Peters describes a method with which it is possible to estimate approximately the weight of the kidneys in the living subject. The figure thus obtained he incorporates in the Ambard formula, and expatiates on the greater precision thus realizable, especially in children, instead of applying the Ambard

formula to them as if their kidneys were as large as those of adults. In one case, for example, the Ambard formula after nephrectomy was 0.121, which represents a loss of 66.5 per cent. Including the weight of the remaining kidney, showed a loss of only 48 per cent. The remaining kidney had hypertrophied and was compensating its lost mate to a most satisfactory extent.

Innervation of the Stomach.—In this second communication, Klee reports research on decerebrated cats, severing the splanchnic or other nerves to study the pathologic physiology of the gastric innervation.

Injection of Air in Roentgen Study of the Liver.—Rautenberg gives some roentgenograms to confirm the much clearer pictures obtained in examining the liver when about 3 liters of air are allowed to enter the abdominal cavity. One of his earliest communications on the subject was summarized in *THE JOURNAL*, July 11, 1914, p. 204, but, as a late editorial remarks (April 10, 1920, p. 1029), the importance of this advance in roentgenographic technic was not recognized until comparatively recently.

Deutsche medizinische Wochenschrift, Berlin

Jan. 15, 1920, 46. No. 3

Chemotherapeutic Antisepsis: II. Morgenroth and Abraham.—p. 57.

Cholesterinized Extracts in Serodiagnosis of Syphilis. H. Sachs.—p. 60.

Seroscopy and Some of its Results. H. Dold.—p. 62.

*Diagnosis of Syphilis of the Heart. H. Luce.—p. 64.

*Roentgen Therapy in Polycythemia. A. Böttner.—p. 66.

*Deficiency Disease of Bone. O. Hamel.—p. 68.

*Stenosis of Small Intestine. J. Kretschmer.—p. 69.

*Organotherapy in Atrophy of Prostate. Rohleder.—p. 70.

*Bladder Function with Myelodysplasia. Sieben.—p. 72.

*Autogenous Vaccine in Glanders in Man. Fischer.—p. 73.

Epidemic Influenza in Infants. Reiche.—p. 75.

My Recovery from Apical Tuberculosis. E. Brann.—p. 76. Comment. W. Holdheim.—p. 76.

Method of Dissolving Eosin-Methylene Blue, Hollborn.—p. 77.

Syphilis of the Heart.—This may be diagnosed, says Luce, if, all other etiologic factors having been excluded, heart symptoms suddenly or gradually appear without any apparent clinical cause, especially in young subjects with a positive blood Wassermann reaction. The localization of syphilis in the septum may sometimes be established clinically by the appearance of symptoms of valvular rupture, spontaneous or following trauma, when a gummatous nodule in the region of the septum has broken through and opened communication between the right and left heart. Under such conditions clinical physical findings will be the same as characterize other defects of the interventricular wall especially the intensity of the heart sounds and the presence of a marked thrill over the whole heart area. The prognosis for life following specific treatment of syphilis of the heart is uncertain on account of the frequency of obliterative endarteritis occurring in the centers of irritation located in the heart.

Roentgen Therapy in Polycythemia.—In polycythemia Böttner strongly recommends roentgen therapy with strict control of the blood picture; especially of the leukocyte findings. Both the short and the long bones should be rayed. As to what extent, will depend on the severity of the illness. The long bones should receive the most attention, especially those that are paining. Only irritant doses should be applied to the spleen. Raying of the spleen alone is almost useless. Raying of the pelvic bones is contraindicated on account of possible injury to the genital glands. In leukemia, an intense raying of the spleen should precede raying of the osseous system.

Deficiency Bone Disease.—Hamel summarizes five cases representing all stages of osteopathies in adolescents due to the restricted war diet. At the general hospital in Hamburg, a highly nutritious diet, combined with cod liver oil and almost complete rest of body, together with intense active hyperemia and massage locally, brought good results. At first passive hyperemia (induced congestion) had been tried in various cases four, six and ten weeks, respectively, without improvement, but the effect of active hyperemia brought about by hot air baths, partial light baths, thermopenetration, energetic massage and light active and passive gymnastic exercise was marked. In fourteen days the patients were symptom-free

and in three weeks they were cured, as was shown by roentgenographic examination.

Clinical and Roentgenologic Aspects of Stenosis of the Small Intestine.—Kretschmer states that this stenosis may present no characteristic subjective symptoms. The more or less pronounced attacks of pain are the only constant feature. The well known clinical signs of intestinal stenosis are not regularly observable. Perhaps the most regular symptom is a form of meteorism—either tympanitic or assuming the aspect of intestinal rigidity, general or local. If the clinical symptoms are insufficient for a diagnosis, the roentgen picture will decide. There is often excessive peristalsis in the stomach.

Testicle Organotherapy in Hypertrophy and Atrophy of the Prostate.—Rohleder emphasizes that not hypertrophy but atrophy of the prostate is characteristic of old age. The symptoms of atrophy of the prostate are much the same as those of hypertrophy of the prostate: residual urine, dilatation of the bladder, difficult micturition, in the first stage. Chronic (partial or total) retention of urine with constant residual urine in the bladder, decrease in the curvature of the jet, desire to urinate immediately following evacuation of the bladder, mark the second stage. Incontinence, with the gradual development of insufficiency of the urinary organs, necessity of catheterization, painful micturition and possibly cystitis are the symptoms of the third stage. Rohleder gives an account of his results from testicle organotherapy, which were favorable in the first stage, palliative in the second and noneffective in the third stage.

Disturbance of Bladder Function with Myelodysplasia.—Sieben states that in the treatment of refractory cases of enuresis nocturna one should look for abnormalities or fissures in the sacral region. Of special importance is the presence of a circular indentation in the vicinity of the upper sacral vertebrae, which on palpation feels like a fistulous tract and is to be regarded as a rudimentary fissure. With purely functional enuresis nocturna, there are no signs of bladder disturbance during the day time, that is, so long as the patient is awake; but in the presence of myelodysplasia, bladder automatism and possibly hypofunctioning of the sphincter internus are constant, which often give rise to involuntary evacuation of the bladder during the day time.

Autogenous Vaccine Treatment of Glanders in Man.—Fischer reports a case of glanders that during a period of three years had been falsely diagnosed, first as tertiary syphilis and later as carcinoma or lupus. Until vaccine treatment was instituted the lesions showed no tendency to heal. Following vaccine treatment, as soon as a certain degree of immunity could be established, rapid and steady improvement began. At the beginning of the vaccine treatment it looked as if the patient would lose soon his whole nose, but after five injections the nose, which had partly necrosed, began to heal and the healing process continued to keep pace with the further injections. Fischer regards this as strong evidence that the autogenous vaccine was responsible for the cure, and that a spontaneous cure would scarcely have been effected, although he admits that it might otherwise be urged that in a large proportion of cases of glanders (50 per cent. according to Kolle and Hetsch) a spontaneous cure can be anticipated.

Jahrbuch für Kinderheilkunde, Berlin

January, 1920, 91. No. 1

*Influenza and Predisposition in Children. F. Jamin and E. Stettner.—p. 1.

*Metabolism in Moeller-Barlow Disease. M. Frank.—p. 21.

*Action of Magnesium Sulphate on Calcium and Magnesium Metabolism in Infants. E. Schiff.—p. 43.

*Differentiation of Nephrosis and Brain Tumor. E. Janzen.—p. 51.

Influenza and Predisposition in Children.—The term used by Jamin and Stettner is "preparedness for disease" rather than "predisposition," and they discuss in particular the age of the child as a factor in susceptibility to infections.

Moeller-Barlow Disease.—Frank gives an illustrated description of the technic used in obtaining material from infants for research on metabolism, and tabulates the find-

ings from two cases. They confirm the retention of ash substances in the early stage of the disease and the abnormally high elimination of calcium during convalescence.

Action of Magnesium Sulphate on Calcium and Magnesium Metabolism in Infants.—Schiff injected the magnesium sulphate subcutaneously in three infants, and found that the output of calcium in the urine was much increased thereafter. Most of the magnesium salt was retained for several days.

Kidney Disease and Brain Tumor.—The coincidence of the nephrosis and the brain tumor in the boy of 6 was not suspected until death over two years after the first symptoms. The symptoms from the kidneys had masked those from the brain tumor or had been accepted as of uremic origin.

Medizinische Klinik, Berlin

March 21, 1920, 16, No. 12

- Rare Complications with Typhoid. F. Marchand.—p. 303.
Predisposition to General Paresis. F. Meggendorfer.—p. 305.
Effect of Epinephrin on Blood. P. Schenk.—p. 309. Conc'n.
*Barium Shadow of Bronchial Tree in Man. O. A. Rösler.—p. 312.
War Diet in Relation to Hypothyroidism. C. Hinz.—p. 313.
Further Experiences with Silver Salvarsan. J. Sellei.—p. 315.
"Epidemic" of Plant-Vincent Angina. E. Kronenberg.—p. 317; Idem. Seligmann.—p. 317.

Roentgen Shadow of Entire Bronchial Tree in Man.—Rösler reports with roentgenogram the case of a man of 50 with carcinoma of the esophagus. The lumen was nearly completely closed, and in straining to swallow the suspension of barium for roentgenoscopy, it went astray into the air passages, and suddenly the entire bronchial tree cast a distinct and perfect shadow, the thin barium paste having rapidly spread throughout the whole. The man soon succeeded in coughing or hawking up the barium paste, stooping over, and did not seem to be any the worse for this mishap; there was no dyspnea and no cyanosis, and merely slight inconvenience. The cancer was removed sixteen days later but the patient did not long survive. The complicating paralysis of the vocal cords was evidently responsible for this alarming experience. In another case the opaque suspension found its way into part of the bronchi through a communication in the cancerous region. The cases warn against straining to swallow with cancer in the upper esophagus.

Münchener medizinische Wochenschrift, Munich

Jan. 16, 1920, 67, No. 3

- Diagnosis of Bronchopneumonia in Children. J. Duken.—p. 63.
*Serologic Test for Syphilis. H. Sachs and W. Georgi.—p. 66.
Prolapse of Umbilical Cord. E. Zweifel.—p. 67.
*Leukemia with Skin Infiltration. Saphier and Seyderhelm.—p. 69.
Salvarsan Prophylaxis in Metasyphilis. W. Mayer.—p. 71.
Weight and Height of Schoolchildren at Augsburg. Bachauer.—p. 72.
Forceps to Close Laceration in Cervix. Democh-Maurmeier.—p. 73.
Adjustable Retractor for the Mouth. Hölscher.—p. 74.
Differentiation of Bacteria by Capillary Attraction. Klinger.—p. 74.
The Fundamental Conception of Cause. B. Fischer.—p. 74.

The Serologic Test for Syphilis by the Precipitin Method and the Use of Cho'lesterinized Organ Extracts.—Sachs and Georgi admit that in the application of their method there are some positive results that are not specific. They do not deny that this fact militates against the value of their test as a whole, and state that they have been endeavoring for some time to so modify the conditions of the test that unspecific reactions cannot occur. They find that the simplest way to avoid such reactions is to keep the test tubes the full time (eighteen to twenty-four hours) in the incubator instead of two hours in the incubator and the balance of the time at room temperature. However, this method is slightly less sensitive than the technic first recommended.

Chronic Myeloid Leukemia with Myeloid Skin Infiltration.—Saphier and Seyderhelm describe some peculiar skin phenomena appearing eleven days before death in a case of myeloid leukemia. Fairly hard, reddish nodules about as large as a pea developed on nose, jaw and brow and a small tumor on the cheek. The latter was movable on its base and was found to be suppurating in the depths. The efflorescence finally extended and presented the appearance of a flat infiltrate, the face cyanotic.

Wiener klinische Wochenschrift, Vienna

Jan 15, 1920, 33, No. 3

- Indications for Operation on the Brain for Foreign Body. Demmer.—p. 55.
Variants of the Proteus X₁₀ Strain. F. Weil.—p. 61.
Spinal Fracture without Nerve Symptoms. Rosenfeld and Zollschan.—p. 62.
Lipoma of the Large Intestine. K. Kothny.—p. 64.
Criticism of Official Malaria Circular. F. Maliwa.—p. 65.

Jan. 22, 1920, 33, No. 4

- An Austrian Historical Medical Museum. K. F. Wenckebach.—p. 75.
*Neo-Arsphenamin in Syphilis of Heart and Aorta. K. Kothny and A. Müller-Deham.—p. 77.
*Meningitis Following Bacillary Dysentery. H. Herschmann.—p. 83.
Symptomatology of Tumors of Frontal Lobe. Sztanojevits.—p. 85.
*Splenectomy in Pernicious Anemia. G. Spandler.—p. 86.

Neo-Arsphenamin in Syphilis of the Heart and the Aorta.—Müller-Deham gives several detailed case reports and emphasizes the need of beginning neo-arsphenamin therapy with very small doses (0.05 or 0.075 gm.) and rejects as dangerous beginning doses of 0.3 gm. or more, as used by some. After seven years' experience treating syphilitics of this type he recommends that as soon as the general condition of the patient permits, in all cases of syphilitic aortitis, neo-arsphenamin treatment should be begun. The general condition of the patient and the Wassermann reaction will decide whether the treatment should be repeated. He recommends along with neo-arsphenamin the usual mercury and iodine therapy.

Meningitis Following Bacillary Dysentery.—Herschmann reports a case of meningitis following bacillary dysentery in a woman of 27, in which intravenous injections of polyvalent staphylococcus vaccines (Wagner-Jauregg) were successfully employed, a therapy that had repeatedly given good results in cases of acute, purulent meningitis. Toch recently reported a case of otogenous meningitis in which this therapy effected a complete cure. Herschmann thinks that these favorable results in etiologically different types of meningitis confirm the view of Wagner-Jauregg that in staphylococcus vaccine therapy we are dealing with the formation of nonspecific antibodies. He believes that when we consider how powerless we are in the face of meningitis if compelled to rely on the usual remedies, a wide field is here opened to vaccine therapy, especially since no untoward effects from this treatment have been observed.

Splenectomy in Pernicious Anemia.—Spengler gives an account of a case of pernicious anemia in which the red cell count became permanently normal following splenectomy. Before the operation the red cell count had been 1,140,000.

Zentralblatt für Chirurgie, Leipzig

April 10, 1920, 47, No. 15

- Surgery of Blood Vessels. J. Keppich.—p. 346.
Successful Resection of Intestine in an Infant. P. G. Plenz.—p. 350.
*Sign of the Viability of the Colon. A. Hedri.—p. 352.

Reliable Sign of Viability of the Colon.—Hedri states that during operations in which it is necessary to ligate the mesentery or the mesocolon, the condition of the blood supply of the corresponding intestine can be learned by examination of the appendices epiploicae. If the stretch of intestine is suspected of not being adequately nourished, he cuts off one of these pouches of fat. If the artery in its stump bleeds, the suspected portion of the intestine may be regarded as adequately nourished and can be left without danger. If the artery in the stump does not bleed, the corresponding stretch of intestine cannot be safely left, and the resection must be more extensive.

Zentralblatt für Gynäkologie, Leipzig

April 10, 1920, 44, No. 15

- Transformation during Delivery of Brow into Occiput Presentation. P. Lindig.—p. 369.
*Carcinomatous Ovarian Dermoid. O. Frankl.—p. 373.

A Carcinomatous Ovarian Dermoid.—Since carcinomatous ovarian dermoids are comparatively rare, something over sixty being reported in the literature, as Frankl finds, he reports a case that presented marked anatomic peculiarities.

The carcinomatous growth nearly as large as a man's head had doubtless arisen from multiple dermoids, as seemed evident from the fact that three separate locks of hair were found in three separate cavities.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

July 26, 1919, 2, No. 4

- Auscultation of Blood Pressure. L. Kaiser.—p. 233.
Contract Practice in Family Sickness Insurance. Vrendenberg.—p. 239.
Oil of Laurel a Dangerous Household Remedy N. A. Scheers.—p. 244.

Nov. 22, 1919, 2, No. 21

- *Medical Examinations. G. van Rijnberk.—p. 1615.
*Cause of Pseudohermaphroditism. A. J. P. van den Broek.—p. 1625.
*Fracture of Neck of Femur. W. F. Wassink.—p. 1632.
*Constitutional Diseases in the Tropics. C. D. de Langen.—p. 1638.
Contraction of Muscle from Corneal Reflex. Anna Schoondermark.—p. 1642.

Medical Examinations.—Van Rijnberk remarks that the medical examination usually pays no attention whatever to the three things which yet are of the greatest importance as demonstrating fitness for the practice of medicine, namely, physical cleanliness, moral character and common sense. Some day some young professor on the examining board is going to surprise his colleagues by declaring that a certain candidate must be turned down "because no one with such dirty hands and black fingernails should be allowed to practice medicine." Dirty fingernails can do much harm in the sickroom, but no examining board now rejects a candidate on this account or for known pilfering tendencies.

Cause of Pseudohermaphroditism.—Van den Broek explains that the embryo stands under the influence of the mother's blood during its development in the uterus. It is thus all the time under the influence of the hormone from the mother's sexual glands. A male embryo develops its male sexual organs but, under the influence of the maternal ovarian hormone, female characteristics develop at the same time; the mammary glands are as well developed in newly born male infants as in female infants. After birth the maternal influence ceases. If the maternal hormone is secreted in excess it may outbalance the effect of the embryo's own male organs, and spurious hermaphroditism may result. This explains why male spurious pseudohermaphroditism is so much more common than the female.

Fracture of the Neck of the Femur.—Wassink gives illustrations of his method of immobilizing the fractured neck of the femur with a frame which holds two metal skewers driven parallel into the head and the great trochanter of the femur. A metal tube is mounted lower down on the frame, at right angles to the skewers, and this tube is held against the femur in a prolongation of the axis of the neck. Through this tube a drill is worked up into the neck. The frame ensures stability and exact localization of the parts, and healing occurs without chance for deformity, even without a plaster cast.

Constitutional Diseases in the Tropics.—De Langen writes from Java to confirm his previous statements in regard to the predominance of the sympathetic nervous system in the tropics. This modifies the chemical processes and the composition of the blood, and may explain the rarity of gastric ulcer and of some pathologic conditions common in Europe, and the extraordinary preponderance of others. Among the 422,943 patients in the hospitals of the interior of Java during the last ten years, no case of myxedema was encountered; only 6 of hypertrophied prostate; 30 of gallstones; 31 of leukemia; 10 of exophthalmic goiter, and 39 of diabetes, but there were 139 cases of appendicitis and 460 of cancer. Comparing these figures with similar material in Europe, shows the striking difference in the proportionate numbers of different diseases. He queries whether the tropical sympatheticotony may not be responsible for this.

Mededeelingen v. d. Burg. Geneesk. Dienst, Java

1919, No. 8. Dutch-English Edition

- *Immunity of Common Fowls to Plague. P. C. Flu.—p. 1.
*Experiments on Immunization against Plague. P. C. Flu.—p. 18.
*The Nitric Acid Test for Indol. J. Groenewege.—p. 61.

Immunity of Common Fowls to Plague.—Flu found that hens and roosters inoculated by intramuscular injection of plague bacilli, bore them without harm, and also even direct injection into a vein of half an agar culture of plague bacilli. Guinea-pigs injected with blood from the fowls, taken during the four following days, all died, showing that the bacilli had retained their virulence. None could be found in the fowl blood by the fifth or sixth day. The plague bacilli are engulfed by the phagocytes but retain their virulence to the last moment until they are seized by the phagocytes. As the most favorable temperature for development of plague bacilli is about 25 to 32 C, the naturally high temperature of fowls, 42 C., may have a bearing on their lack of susceptibility to the infection.

Immunization Against Plague.—Flu remarks that if the garrison at Malang had been vaccinated against plague, the fact that only one case of plague occurred in the garrison during the four years when thousands of civilians were dying of plague in the town, would undoubtedly have been ascribed to the protection from vaccination. But as it happened no vaccinations had been done in the garrison; rat-proof buildings were evidently responsible for the immunity of the soldiers. He warns that not unless conditions are exactly the same in the group of the vaccinated and the group of the unvaccinated are conclusions as to the efficacy of any vaccination justified. Inoculation of animals is more instructive, and Flu has been conducting extensive experiments in this line since the untimely death of his co-worker, Borger, who succumbed to laboratory plague infection not long ago. Flu used distilled water extracts from plague bacilli, inoculating guinea-pigs, monkeys and rats, and reports that the results with this compare favorably with those from the best of other methods, but even at the best we cannot hope to immunize up to 90 per cent. against the disease, as even the natural infection does not confer immunity to this degree.

The Nitric Test for Indol.—Groenewege presents evidence that all bacteria that form indol and do not reduce nitrate further than to nitrite, induce a positive response to the Salkowski test. To avoid error he has modified the technic somewhat, as he describes.

Ugeskrift for Læger, Copenhagen

March 18, 1920, 82, No. 12

- *Deforming Osteochondritis of the Spine. H. Scheuermann.—p. 385.
*Tuberculosis and the First Born. S. Hansen.—p. 393.

Kyphosis in the Young.—Scheuermann has been studying 105 cases of what he calls kyphosis dorsalis juvenilis, with or without lateral curvature. It forms a group in which the curvature in the dorsal region cannot be corrected by an effort. Fully 88 per cent. of those affected were boys, and the ages ranged from 10 to 17, with three of 18 and 19. In all the cases there was a history of hard work, either on a farm or in a smithy or the like, or factory or bicycle messenger work, or in athletics. He reproduces the roentgen findings, and concludes from his analysis of conditions that the trouble is a process in the spine analogous to that of the Calvé-Perthes deforming osteochondritis of the hip joint. Instead of the usual name for it, "muscular kyphosis" or "apprentices' kyphosis," it should be called juvenile deforming osteochondritis of the spine.

Tuberculosis and the First Born.—Hansen refers to Karl Pearson's works on the handicapping of the first born, and relates that at two sanatoriums in Denmark there was a much larger proportion of the first born among the total 5,635 inmates than would seem to be probable unless the number of births does have some influence on the resisting powers. Investigation of large series of schoolchildren, however, failed to confirm that positive reactions to the skin tuberculin test were proportionately more frequent among the first born than among others, and no physical differences could be detected between them. He accepts the possibility, however, of endogenous factors determining the flaring up later of latent tuberculosis. One such factor may be a congenital inferiority of the lung tissue, restricted to the first born, and traceable to undernourishment. It is possible also that this inferiority may be heritable.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1920

The following journals have been abstracted in the Current Literature Department of THE JOURNAL during the past six months. Any of the foreign journals will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Only one journal may be borrowed at a time. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where he may be located.

- Acta Medica Scandinavica. Irregular. 20 kronor. Stockholm.
Acta Scholae medicinalis universitatis imperialis in Kioto. Irregular. 1.50 yen. Kioto.
American Journal of Anatomy. Bi-m. \$7.50. 36th St. and Woodland Ave., Philadelphia.
American Journal of Diseases of Children. M. \$4. American Medical Association, 535 N. Dearborn St., Chicago.
American Journal of Insanity. Q. \$5. Johns Hopkins Press, Baltimore.
American Journal of the Medical Sciences. M. \$5. Lea & Febiger, 706 Sansom St., Philadelphia.
American Journal of Ophthalmology. M. \$10. 7 W. Madison St., Chicago.
American Journal of Physiology. M. \$5. Johns Hopkins Medical School, Baltimore.
American Journal of Public Health. M. \$3. 126 Massachusetts Ave., Boston.
American Journal of Roentgenology. M. \$5. 69 E. 59th St., New York.
American Journal of Syphilis. Q. \$6. C. V. Mosby Co., St. Louis.
American Review of Tuberculosis. M. \$3. 2419 Greenmount Ave., Baltimore.
Anales de la Facultad de medicina, Montevideo. Bi-m. \$2. Montevideo.
Anales de la Facultad de medicina, Universidad de Lima. Bi-m. 6 soles. Lima, Peru.
Annales de gynécologie et d'obstétrique. M. 22 francs. Paris.
Annales de médecine. M. 23 francs. Paris.
Annali d'igiene. M. 20 lire. Rome.
Annals of Medical History. Q. \$6. Paul B. Hoeber, 67 E. 59th St., New York.
Annals of Otolaryngology, Rhinology and Laryngology. Q. \$6. Mermod-Jaccard Bldg., St. Louis.
Annals of Surgery. M. \$6. J. B. Lippincott Co., 227 S. 6th St., Philadelphia.
Annals of Tropical Medicine and Parasitology. Q. \$5. Liverpool.
Archiv für Verdauungskrankheiten. Bi-m. 36 marks. Berlin.
Archives of Dermatology and Syphilology. M. \$5. American Medical Association, 535 N. Dearborn St., Chicago.
Archives of Diagnosis. Q. \$2. 141 W. 36th St., New York.
Archives of Internal Medicine. M. \$5. American Medical Association, 535 N. Dearborn St., Chicago.
Archives des maladies de l'appareil digestif et de la nutrition. M. 14 francs. Paris.
Archives des maladies du cœur, des vaisseaux et du sang. M. 22 francs. Paris.
Archives médicales belges. M. 18 francs. Paris.
Archives de médecine des enfants. M. 18 francs. Paris.
Archives mensuelles d'obstétrique et de gynécologie. M. 25 francs. Paris.
Archives of Neurology and Psychiatry. M. \$6. American Medical Association, 535 N. Dearborn St., Chicago.
Archives of Ophthalmology. Bi-m. \$5. G. P. Putnam's Sons, 2 W. 45th St., New York.
Archives of Radiology and Electrotherapy. M. \$5. London.
Archivos españoles de pediatría. M. 18 pesetas. Madrid.
Archivos Latino-Americanos de pediatría. Bi-m. \$3. Buenos Aires.
Arquivos do Instituto bacteriológico Camara Pestana. Price varies. Lisbon.
Berliner klinische Wochenschrift. W. 40 marks. Berlin.
Boston Medical and Surgical Journal. W. \$5. 126 Massachusetts Ave., Boston.
Brain. A Journal of Neurology. Irregular. \$4. London.
Brazil-medico. W. 20 milreis. Rio de Janeiro.
Bristol Medico-Chirurgical Journal. Irregular. 5 shillings.
British Journal of Children's Diseases. Q. \$5. London.
British Journal of Surgery. Q. \$6.50. William Wood & Company, 51 Fifth Ave., New York.
British Journal of Tuberculosis. Q. \$1.25. G. E. Stechert & Co., 151 W. 25th St., New York.
British Medical Journal. W. 8d per issue. London.
Bulletin de l'Académie de médecine. W. 23 francs. Paris.
Bulletin médical. Semi-w. 14 francs. Paris.
Bulletin of the Johns Hopkins Hospital. M. \$3. Baltimore.
Bulletin of the Lying-In Hospital of the City of New York. New York.
Bulletin of the Medical and Chirurgical Faculty of Maryland. M. (except June, July, August and September) 25 cents. 1211 Cathedral St., Baltimore.
Bulletin of the Naval Medical Association of Japan. Irregular. Tokio.
Bulletin of the Porto Rico Medical Association. Q. San Juan, Porto Rico.
Bulletins et mémoires de la Société médicale des Hôpitaux de Paris. W. 32 francs. Paris.
California State Journal of Medicine. M. \$1. Butler Bldg., San Francisco.
Canadian Journal of Mental Hygiene. Q. \$2. 121 Bishop St., Montreal.
Canadian Medical Association Journal. M. \$5. 386 Victoria St., Toronto.
China Medical Journal. Bi-m. \$5. Shanghai.
Chirurgia degli organi di movimento. Bi-m. 35 lire. Bologna.
Colorado Medicine. M. \$2. Metropolitan Bldg., Denver.
Correspondenz-Blatt für schweizer Aerzte. See Schweizerische medizinische Wochenschrift.
Crónica médica. Semi-m. 15 francs. Lima, Peru.
Delaware State Medical Journal. M. \$1. Wilmington.
Deutsche medizinische Wochenschrift. W. \$5.04. Leipzig.
Deutsche Zeitschrift für Chirurgie. Irregular. 28 marks. Leipzig.
Deutsches Archiv für klinische Medizin. M. 24 marks. Leipzig.
Dublin Journal of Medical Science. M. \$5.
Edinburgh Medical Journal. M. \$6.
Endocrinology: Bulletin of the Association for the Study of Internal Secretions. Q. \$5. 1100-1103 Title Insurance Bldg., Los Angeles.
Finska Läkaresällskapets Handlingar. Bi-m. Helsingfors.
Gaceta médica de Caracas. Semi-m. 16 bolívares. Caracas, Venezuela.
Gaceta médica de México. Irregular. \$6. Mexico City.
Gann. Irregular. Tokio.
Glasgow Medical Journal. M. \$5.
Grèce médicale. Semi-m. 12 francs. Athens.
Hospitalstidende. W. 27.5 kronen. Copenhagen.
Hygiea. M. \$5. Stockholm.
Illinois Medical Journal. M. \$3. 155 N. Ridgeland Ave., Oak Park.
Indian Journal of Medical Research. Q. 10s. Calcutta.
Indian Medical Gazette. M. \$5. Calcutta.
Jahrbuch für Kinderheilkunde und physische Erziehung. Irregular. 32 marks. Berlin.
Japan Medical World (Nippon No Ikai). W. Tokio.
Journal of Abnormal Psychology. Bi-m. \$5. 194 Boylston St., Boston.
Journal of the American Medical Association. W. \$5. 535 N. Dearborn St., Chicago.
Journal of the Arkansas Medical Society. M. \$2 Boyle Bldg., Little Rock, Ark.
Journal of Bacteriology. Bi-m. \$5. Williams & Wilkins Company, Baltimore.
Journal of Biological Chemistry. M. \$3. 2419 Greenmount Ave., Baltimore.
Journal of Cancer Research. Q. \$5. Williams & Wilkins Company, Baltimore.
Journal de chirurgie. M. 44 francs. Paris.
Journal of Experimental Medicine. M. \$5. Rockefeller Institute for Medical Research, 66th St. and Avenue A, New York.
Journal of the Florida Medical Association. M. \$1.50. P. O. Box 136, Jacksonville, Fla.
Journal of General Physiology. Bi-m. \$5. Rockefeller Institute for Medical Research, 66th St., and Avenue A, New York.
Journal of Immunology. Bi-m. \$5. Williams & Wilkins Company, Baltimore.

W.—Weekly; M.—Monthly; Semi-m.—Semi-monthly; Bi-m.—Bi-monthly; Q.—Quarterly.

- Journal of the Indiana State Medical Association. M. \$2. 406 W. Berry St., Fort Wayne, Ind.
- Journal of Industrial Hygiene and Abstract of the Literature. M. \$6. Harvard University Press, Cambridge, Mass.
- Journal of Infectious Diseases. M. \$5. 629 S. Wood St., Chicago.
- Journal of Iowa State Medical Society. M. \$2. Des Moines.
- Journal of Kansas Medical Society. M. \$2. 303 Commerce Bldg., Topeka, Kan.
- Journal of Laboratory and Clinical Medicine. M. \$5. C. V. Mosby Company, St. Louis.
- Journal of Laryngology, Rhinology and Otology. M. \$5. London.
- Journal of Maine Medical Association. M. \$2. Portland, Maine.
- Journal of Medical Association of Georgia. M. \$1. Lamar Bldg., Augusta, Ga.
- Journal of Medical Research. Bi-m. \$4. 240 Longwood Ave., Boston.
- Journal of Medical Society of New Jersey. M. \$2. 12 Cone St., Orange, N. J.
- Journal de médecine de Bordeaux. M. 15 francs.
- Journal of Mental Science. Q. 20 shillings. London.
- Journal of Michigan State Medical Society. M. \$3.50. Powers' Theatre Bldg., Grand Rapids, Mich.
- Journal of Missouri State Medical Association. M. \$2. 3517 Pine St., St. Louis.
- Journal of Nervous and Mental Diseases. M. \$8. 64 W. 56th St., New York.
- Journal of Oklahoma State Medical Association. M. \$2. Muskogee.
- Journal of Orthopaedic Surgery. M. \$4. Lincoln, Nebraska.
- Journal of Parasitology. Q. \$2. Urbana, Ill.
- Journal of Pathology and Bacteriology. Irregular. £1.1s. Cambridge, England.
- Journal of Pharmacology and Experimental Therapeutics. M. \$6. 2419 Greenmount Ave., Baltimore.
- Journal de radiologie et d'électrologie. M. 28 francs. Paris.
- Journal of South Carolina Medical Association. M. \$2. Greenville, S. C.
- Journal of State Medicine. M. 2 shillings. London.
- Journal of Tennessee State Medical Association. M. \$2. 601 Cedar St., Nashville, Tenn.
- Journal of Tropical Medicine and Hygiene. Semi-m. \$5. London.
- Journal d'urologie médicale et chirurgicale. M. 42 francs. Paris.
- Journal of Urology. Bi-m. \$5. Williams & Wilkins Co., Baltimore.
- Kentucky Medical Journal. M. \$2. State and Twelfth Sts., Bowling Green, Ky.
- Kitasato Archives of Experimental Medicine. Twice a year. 60 cents. Tokio.
- Lancet. W. 10d per issue. London.
- Laryngoscope. M. \$6. 3858 Westminister Place, St. Louis.
- Lyon chirurgial. M. 25 francs.
- Lyon médical. M. 15 francs.
- Médecine. M. 18 francs. Paris.
- Mededeelingen van den Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indië. Irregular. Price varies. Batavia, Java.
- Medical Journal of Australia. W. 6 d. Sydney.
- Medical Journal of the Siamese Red Cross. 5 ficals. Bangkok.
- Medical Journal of South Africa. M. £1.1. Johannesburg.
- Medical Record. W. \$5. W. Wood & Co., 51 Fifth Ave., New York.
- Medizinische Klinik. W. 60 marks. Berlin.
- Mental Hygiene. Q. \$2. National Committee for Mental Hygiene, 50 Union Square, New York City.
- Military Surgeon. M. \$3.50. Army Medical Museum, Washington, D. C.
- Minnesota Medicine. M. \$2. Lowry Bldg., St. Paul.
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SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "B," "D" and "S." Matter pertaining to the Association is indexed under "American Medical Association." The name of the author follows the subject entry in brackets.

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Davis, E. P., Manual of Obstetrics, 1665
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Paneth, L., Praktische Bakteriologie für Aerzte und Studierende, 1277
Pasteur: History of a Mind, 1595
Peterson, F., Nervous and Mental Diseases, 693
Pharmacology, Experimental, 821
Pharmacology, Laboratory Manual of, 1792
Pharmacopoeia of the United States of America and the National Formulary, Digest of Comments on, 693
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Physiology, Introduction to General Physiology, with Practical Exercises, 1477
Psychoses of War, 52
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Rachianesthésie Générale, 1277
Rambling Recollections: An Autobiography, 1277

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- Römer, P., *Lehrbuch der Augenheilkunde*, 1736
- Ross, J. S., *Handbook of Anaesthetics*, 1736
- Schaeffer, J. P., *Nose, Paranasal Sinuses, Nasolacrimal Passageways and Olfactory Organ in Man. A Genetic, Developmental and Anatomico-Physiological Consideration*, 1418
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- Surgery, Manual of, (Rose and Carless) for Students and Practitioners, 1538
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- Swanzy's *Handbook of Diseases of the Eye and Their Treatment*, 1792
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SOCIETIES

A.—Association
Acad.—Academy
Am.—American
Coll.—College
Conf.—Conference
Cong.—Congress
Conv.—Convention
Dist.—District
Hosp.—Hospital
Internat.—International
M.—Medical or Medicine
Nat.—National
Phar.—Pharmaceutical
Phys.—Physicians
Ry.—Railway
S.—Society
Surg.—Surgical or Surgeon, Surgery

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Full details as to the aims, character and editorial supervision of the “Archives of Surgery” may be secured by referring to the above mentioned announcement in your JOURNAL A. M. A. for June 12. The purpose of this notice is to stress the importance of placing your subscription immediately; otherwise, owing to limited issue, early numbers will not be available.

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Arizona Medical Association.....	C. E. Yount, Prescott.....	D. F. Harbridge, Goodrich Bldg., Phoenix.....	Hot Springs, 1921
Arkansas Medical Society.....	Gus A. Warren, Black Rock.....	Wm. R. Bathurst, 810 Boyle Bldg., Little Rock..	San Diego, 1921
California, Med. Soc. of the State of	John C. Yates, Coronado.....	Saxton Temple Pope, Butler Bldg., San Francisco	Glenwood Sprgs., Sept., '20
Colorado State Medical Society.....	F. H. McNaught, Denver.....	Crum Epler, Pueblo.....	Hartford, May 18-19, '21
Connecticut State Medical Society...	George Blumer, New Haven.....	C. W. Comfort, Jr., 1193 Chapel St., N. Haven	Wilmington, Oct. 11-12, '20
Delaware State Medical Society....	H. M. Manning, Seaford.....	W. O. La Motte, 2011 Monroe Pl., Wilmington	Pensacola, 1921
District of Columbia, Med. Soc. of..	Francis R. Hagner, Washington...	H. C. Macatee, 1478 Harvard St., N.W., Wash'n	Honolulu, Nov., 1920
Florida Medical Association.....	William E. Ross, Jacksonville....	Graham E. Henson, Jacksonville.....	Springfield, 1921.
Georgia, Medical Association of....	Edward G. Jones, Atlanta.....	Allen H. Bunce, Healey Bldg., Atlanta.....	So. Bend, Sept. 23-25, '20
Hawaii, Medical Society of.....	H. H. Blodgett, Honolulu.....	Harry T. Hollmann, Kalihi Hosp., Honolulu....	Topeka, 1921
Idaho State Medical Association...	C. P. Stackhouse, Sandpoint.....	E. E. Laubaugh, Overland Bldg., Boise.....	Lexington, Sept. 27-30, '20
Illinois State Medical Society.....	William F. Grinstead, Cairo.....	W. H. Gilmore, Mt. Vernon.....	Augusta, June 29-30, '20
Indiana State Medical Association..	Charles H. McCully, Logansport...	Chas. N. Combs, Terre Haute.....	St. Paul, Sept. 29-30, '20
Iowa State Medical Society.....	Donald Macrae, Jr., Council Bluffs.	T. B. Throckmorton, Equitable Bldg., Des Moines	Laurel, 1921
Isthmian Canal Zone, Med. Assn. of	W. E. Hubbard, Ancon.....	N. B. Kupfer, Ancon.....	St. Joseph, 1921
Kansas Medical Society.....	Clements Klippel, Hutchinson.....	John F. Hassig, 966 Central Ave., Kansas City	Helena, July 14-15, '20
Kentucky State Medical Association.	John G. South, Frankfort.....	A. T. McCormack, 532 W. Main St., Louisville..	Lincoln, 1921
Louisiana State Medical Society...	Hommer J. Dupuy, Jr., New Orleans.	P. T. Talbot, Maison Blanche Bldg., New Orleans	
Maine Medical Association.....	H. B. Mason, Calais.....	B. L. Bryant, 265 Hammond St., Bangor.	
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Massachusetts Medical Society....	Alfred Worcester, Waltham.....	W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston	
Michigan State Medical Society....	Charles H. Baker, Bay City.....	F. C. Warnshuis, 531 Powers Bldg., Gr. Rapids..	
Minnesota State Medical Assn.....	J. H. Adair, Owatonna.....	Earle R. Hare, 730 LaSalle Bldg., Minneapolis..	
Mississippi State Medical Assn....	John W. Barksdale, Winona.....	T. M. Dye, Clarksdale.....	
Missouri State Medical Association.	Wilson J. Ferguson, Sedalia.....	E. J. Goodwin, 3529 Pine St., St. Louis.....	
Montana, Medical Association of...	Edward M. Larson, Great Falls....	E. G. Balsam, Stapleton Bldg., Billings.....	
Nebraska State Medical Association.	H. W. Orr, Lincoln.....	Jos. M. Aikin, 519 McCague Bldg., Omaha....	
Nevada State Medical Association..	M. A. Robison, Reno.....	H. J. Brown, Goldfield.....	
New Hampshire Medical Society...	Alpha H. Harriman, Laconia.....	D. E. Sullivan, 7 No. State St., Concord.....	
New Jersey, Medical Society of....	Gordon K. Dickinson, Jersey City.	William J. Chandler, South Orange.....	
New Mexico Medical Society.....	C. A. Frank, Albuquerque.....	F. E. Tull, Albuquerque.....	
New York, Med. Soc. of the State of	John Richard Kevin, Brooklyn...	Edward L. Hunt, 17 W. 43d St., New York..	
N. Carolina, Med. Soc. of the State of	Thomas E. Anderson, Statesville...	L. B. McBrayer, Sanatorium, Act'g Sec'y.....	
North Dakota State Med. Assn....	William P. Baldwin, Casselton...	H. J. Rowe, Lisbon.....	
Ohio State Medical Association...	Charles Lukens, Toledo.....	Mr. D. K. Martin, Ex. Sec., 131 E. State St., Columbus	
Oklahoma State Medical Assn.....	John W. Duke, Guthrie.....	C. A. Thompson, 508 Barnes Bldg., Muskogee	
Oregon State Medical Association..	Burpee L. Stceves, Salem.....	Clarence J. McCusker, Corbett Bldg., Portland..	
Pennsylvania, Med. Soc. of State of	C. L. Stevens, Athens.....	W. F. Donaldson, Jenkins Arcade, Pittsburgh...	
Philippine Islands Medical Assn....	Fernando Calderon, Manila.....	Arturo Garcia, Manila.....	
Porto Rico, Med. Assn. of.....	Pedro Malaret, Ponc.....	Augustin R. Laugier, San Juan.....	
Rhode Island Medical Society.....	John M. Peters, Providence.....	I. W. Leech, 111 Broad St., Providence.....	
South Carolina Medical Association.	W. P. Timmerman, Batesburg....	Edgar A. Hines, Seneca.....	
South Dakota State Med. Assn....	H. T. Kenney, Pierre.....	Frederick A. Spafford, Flandreau.....	
Tennessee State Medical Assn.....	Leon L. Sheddan, Knoxville.....	Olin West, 601 Cedar St., Nashville.....	
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Utah State Medical Association....	Geo. E. Robison, Provo.....	Wm. L. Rich, Boston Bldg., Salt Lake City.....	
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West Virginia State Med. Assn....	Henry R. Johnson, Fairmont.....	J. Howard Anderson, Marytown.....	
Wisconsin, State Med. Society of..	Charles R. Bardeen, Madison.....	Rock Sleyster, Wauwatosa.....	
Wyoming State Medical Society...	G. P. Johnston, Cheyenne.....	Earl Whedon, Sheridan.....	

List of National Societies appeared in this space two weeks ago: officers of the A. I. A. last week.

Corrections will be appreciated

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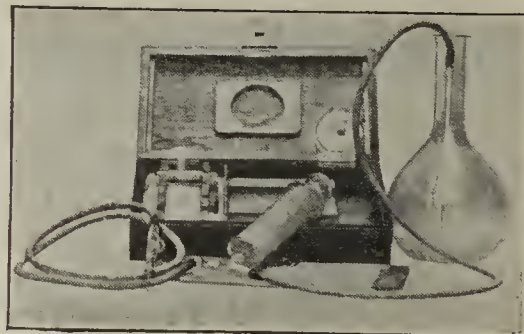
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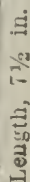
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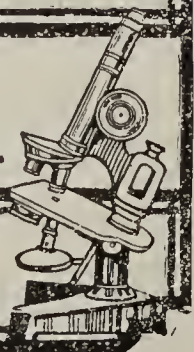
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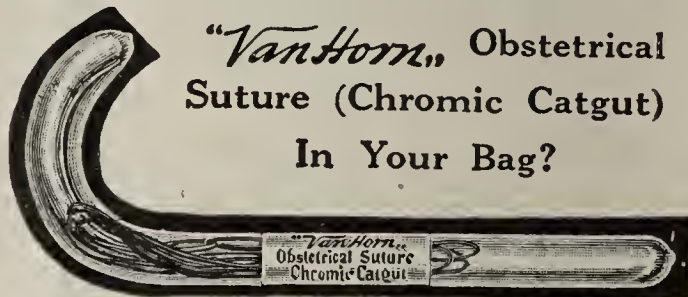
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PURE GLYCERINE — Soothing, softening and cleansing.

SWEET VEGETABLE OILS — Emollient, healing.

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Adapting Cow's Milk to Infant Requirements

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DENNOS FOOD makes up the carbohydrate deficiency of cow's milk, giving it approximately the natural food balance of the mother's milk.

DENNOS FOOD makes a marked alteration in digestibility of cow's milk, changing it from a hard curdling to a soft curdling food—very similar, in fact, to breast milk.

DENNOS modification is not recommended as superior or even equal to mother's milk, but when breast feeding is impractical, Dennos does make possible a food closely adapted to the infant's nutritional and physiological requirements.

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DENNOS FOOD

Western Office
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Because of its exceeding blandness and high nutritive value, Dennos with proper amount of milk is highly suitable for a fever diet.

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535 N. Dearborn St. Chicago, Ill
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Those interested in perfecting surgical skill in minimum time should write for descriptive folder. See our adv. on page 17.

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Demonstration on Cadaver by INSTRUCTOR

Operation on animal by STUDENT

DEMONSTRATIONS AND OPERATIONS include Thyroid, Stomach, Intestine, Gall Bladder, Appendix, Hernia, Prostate, etc., etc.

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One month's course in TECHNIQUE AND INTERPRETATION, using the three colorimeters, Duboseq, Bock-Benedict and Hellige. Classes limited to SIX. Personal instruction. Enroll now.

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SCHOOL of PATHOLOGY and OPERATIVE SURGERY

Gives special courses in Individual Instruction, in General Surgery, Gynecology, Genito-Urinary, Ear, Nose and Throat, Brain and Bone Surgery on the Cadaver. For information address

John McAllister, M.D., 43 W. 48th St., New York City

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With extensive additions to our space and equipment made during the year 1919, we are in a position to offer you in 1920 better service than ever before.

Telephone MEDICAL DEPT. Randolph 7688 DENTAL DEPT. Randolph 7689

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Advertisements under the following headings cost \$2 for 30 words or less; additional words 5c each. This rate applies for each insertion.

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RESULTS are better when an advertisement receives several insertions, and to those who remit (\$8.25 if answers are to be sent through this office) for four consecutive insertions of a classified advertisement we will give, free, two more insertions provided the first four do not consummate a deal.

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Occasionally we receive notification from one who has answered an advertisement stating that he has had no reply and asking if his letter was transmitted. Letters sent in our care are forwarded promptly, but naturally we cannot compel an advertiser to answer all replies he receives.

It is advisable to send copies instead of original references.

For current issue, ad must reach us by 4:30 p. m. Monday.

Journal A.M.A., 535 N. Dearborn St., CHICAGO

N. B.—We exclude from our columns all known questionable ads. and appreciate notification from our readers relative to any misrepresentation.

ASSISTANTS WANTED

WANTED — WOMAN AS ASSISTANT physician, graduate of Class A Medical School; a recent graduate with experience in a general hospital preferred. Apply to Dr. J. A. Houston, Supt., State Hospital, Northampton, Mass., stating qualifications and experience. B

WANTED — ASSISTANT PHYSICIAN, single, for contract mine practice in southern West Virginia; want graduate and one with some hospital experience preferred; must be able to get reciprocity or take the July Board; salary \$200 per month with furnished room; send references in first letter. Add. 9013 B, % AMA.

WANTED — ASSISTANT TO SURGEON and general practitioner, \$200 month; ordinary laboratory work, assist at operations and general practice; plenty of experience for young man willing to work. Add. 8996 B, % AMA.

WANTED — ROENTGENOLOGIST WHO has had good training in x-ray of the gastrointestinal tract; good salary for right man. Add. 8989 B, % AMA.

WANTED — ASSISTANT IN PENNSYLVANIA mining practice; single; able to do industrial surgery and general practice; salary \$185 per month and all supplies furnished; if not qualified do not reply. Add. 9008 B, % AMA.

(Continued on page 22)



"It seems almost miraculous to extract caffeine from coffee without changing in any way the appearance of the roasted bean."

"Really, I think with the caffeine removed the coffee is improved!"

KAFFEE HAG is choice bean coffee, decaffeinated by our patent process so that it retains the snappy coffee taste. It is a blend of selected high-grade coffees, perfectly roasted, and comes to your table full of fragrance. **SOLD BY GROCERS EVERYWHERE.**

Healthful And Good

*Sold by grocers everywhere in the whole bean, or ground,
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General Offices
CLEVELAND

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"KAFFEE HAG

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Special Course in Diagnosis of TUMORS AND CURETTEMENTS

Dr. Edwin G. Kirk

Beginning July 5, 1920. Duration, 4 weeks
Gross tumors; over one thousand
selected microscopic sections; stere-
opticon gross and micro-photographs;
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of endometrium.

Secure reservation at once
POST-GRADUATE MEDICAL SCHOOL OF CHICAGO
2400 S. Dearborn St.

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Special course in general surgery, operative
technique and gynecologic surgery given to
physicians. Enrolment limited to THREE.
First assistantship. No cadaver or dog-work.

For particulars address,

DR. MAX THOREK

AMERICAN HOSPITAL, 846-856 Irving Park Boulevard, CHICAGO

A Private Post-Graduate Course

in Urology includes all modern
methods of diagnosis and treat-
ment. Classes limited.

For particulars address the

BREMERMAN UROLOGICAL HOSPITAL
1919 Prairie Ave., Chicago

X-Ray Technique Fluoroscopy, Plate Reading X-Ray Therapy

Special Personal Instruction
Complete Course (6 Weeks)

Arrangements can be made for short
courses of parts of work.

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Individual instruction in refraction, in diseases of the
eye, and ophthalmoscopy clinical and theoretical,
leading to proficient working knowledge in short
time. University instructor of ability. Address

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pretation. Limited to physicians only. Small classes
permitting individual instruction. Large clinic in gas-
tro-intestinal, pulmonary and cardiac lesions, bone and
joint diseases. Also available an extended course in tech-
nique, therapy, diagnosis, etc.

For detailed information or reservations, write
EDW. S. BLAINE, MD. (Roentgenologist,
1825 W. Harrison Street Cook Co. Hospital.) CHICAGO

Fomon Medical Review Course

1608 W. Madison Street
Chicago, Ill.

Prepares physicians for State Board,
Army, Navy, Civil Service Examina-
tions. Write for Free Booklet and
Mail quiz particulars.

Names of Classified Advertisers using key
cannot be given out by THE JOURNAL.
Kindly do not ask for them.

Tonics and Sedatives

A SONG FOR JULY

Con passionata

*The doctor leads a busy life;
He's always on the go.
He has no time to give his wife,
His kids he does not know.*

*What matter if the lake be warm,
He cannot have a frolic,
The phone rings out a shrill alarm
Some baby has the colic.*

*He cannot see a baseball game
Where players strike and hit,
He hears somebody call his name,
His neighbor has a fit.*

CAUSE AND EFFECT

"Hello," said Brown to Jones, "Haven't
seen you in a long time. What you doing
now?"

"Oh, I've got a swell job," said Jones. "I'm
working in a wholesale drug house. I'm the
taster. I sample all the stuff that comes in."

"Does it pay well?" asked Brown.

"Sure," said Jones. "I get \$50 a week and
two weeks vacation."

"Well," said Brown, "what do you do when
a big consignment of castor oil comes in?"

"Well, it is after that that I get my vaca-
tion."

PASSING THE BUCK

From the advertisement of the Parry Medicine
Company, Inc., 1143 Penn Avenue,
Pittsburgh, Pa.

Affidavit of Mrs. Mary Gilmore, 147
Oneida Street, Monessen, Pa. "Passed
cancer and gallstones." Affidavit of
Mrs. M. Patterson, 919 Winslow Ave-
nue, New Castle, Pa. "Passed three
cancers." Affidavit of Miss Mary
Newby, of Woodlawn, Pa. "Passed
blood clot from brain." Affidavit of
Mrs. S. Mullolly, of Turtle Creek, Pa.
"Vomited cancer."

A GOOD DEFINITION

Printer's Devil.—Why is an
ideal manuscript like an up to date
woman's dress?

Copy Editor.—Well, smarty,
why is it?

P. D.—Because it is short enough
to be interesting but long enough to
cover the subject.

Unusual to Say the Least Houston (Texas) Chronicle

UNUSUAL EFFORTS BEING MADE TO SAVE LIFE OF O. M. LIPPER; MAKING MEDICAL HISTORY HERE

O. M. Lipper, Houston capitalist, has sur-
vived for one week a dose of 21 grains of
bichloride of mercury, and, most astounding
of all, may completely recover.

Ordinarily a single grain, once it has entered
the body tissues, kills a man of 150 pounds
in three or four days.

Mr. Lipper is being kept alive upon milk
alone and this is fed to him through the veins
in order that it may be the quicker assim-
ilated. A hot pack over the most seriously
affected parts is included in the treatment.

Although he is suffering with acute nephritis
caused by the bichloride, bleeding from the
stomach and mouth has been halted.

(Continued on page 24)

(Continued from page 20)

WANTED—UNMARRIED MAN TO ASSIST
in large eye, ear, nose and throat practice
in industrial city in middle west; \$175 per
month; state age, religion and nationality;
give particulars as to qualifications and send
photo. Add. 9005 B, % AMA.

WANTED—AT THE WRENTHAM STATE
School, a male assistant physician; splendid
opportunity to study the various forms of men-
tal defect. For further information add. Geo.
L. Wallace, Supt., Wrentham, Mass. B

WANTED—MEDICAL ASSISTANT—
Splendid opportunity for experience and
practice; practically an externship; married man
preferred; must be registered in Michigan;
salary \$150 a month, drugs, supplies and in-
struments furnished; large clinical and obstet-
rical service; modern dispensary and labora-
tory; modern city; state age, experience, when
and where graduated, religious and fraternal
connections, weight, height and references;
photo if convenient, which will be returned;
state when available. Add. Dr. Arthur F.
Fischer, % Quincy Mining Company, Han-
cock, Mich. B

WANTED — GENERAL PRACTITIONER
and surgeon, in Seattle; salary and outside
practice compensation or privilege; must be
able to do abdominal surgery and register in
Washington; have executive ability; give full
particulars, experience, training, age, etc. Add.
2439, % F. V. Kniest, Bee Bldg., Omaha, Neb. B

WANTED—ASSISTANT PHYSICIAN,
male or female, single preferred, for Stony
Wold Sanatorium, Lake Kashaqua, N. Y.; sal-
ary \$1,600 per year with maintenance; sana-
torium is 16 miles from Saranac Lake. Apply
to Walter L. Rathbun, M.D., Superintendent. B

WANTED — A DEPENDABLE MARRIED
physician to take charge of contract practice
in mining district of upper peninsula of Michi-
gan; salary \$250 a month; perquisites make
the income larger; must be able to do some
major surgery and be a good refractionist; in
replying state fully all particulars: age, na-
tionality, college, hospital and other experience;
give references and if possible will want per-
sonal interview. Add. 8956 B, % AMA.

WANTED—PATHOLOGIST, BACTERIOLO-
gist and serologist, thoroughly familiar with
laboratory routine; also desirous of engaging
in genito-urinary practice and literary work
with well-known urologist; young man pre-
ferred; state qualifications. Add. 8954 B, %
AMA.

WANTED—AT ONCE — ASSISTANT IN
Colorado mining and general practice; young
married Protestant Christian man preferred;
must be up to date, ethical, sober, active and
energetic, in good health and able to do in-
dustrial surgery; salary \$200 per month with
advancement; all supplies furnished and if
suitable a better proposition later; fine climate
on north and south state highway. Add. 8953
B, % AMA.

WANTED—ASSISTANT FOR CONTRACT
mining practice in Pennsylvania, with
license; must be able to come at once; write
full details of previous experience and educa-
tion and give references; this is a good op-
portunity to those wishing industrial work;
\$175 and other considerations as outside work
and confinements; if married, house with elec-
tric lights, heater and bath; previous experi-
ence along these lines will be given prefer-
ence. Add. 8916 B, % AMA.

WANTED — ASSISTANT IN EYE AND
ear office, who will take care of the refrac-
tion; state approximate salary in first letter
and when applicant can start work. Add. 8924
B, % AMA.

WANTED—TWO MALE PHYSICIANS FOR
Western State Hospital, Hopkinsville, Ky.;
first assistant must have at least two years'
training in psychiatry; salary fixed at \$2,000
per year with maintenance for self; second as-
sistant must be an experienced pathologist and
bacteriologist; salary \$1,200 per year with an
increase of \$100 each year for three years;
also maintenance for self. Add. Superintendent. B

WANTED—YOUNG MEDICAL MAN, UN-
married, with laboratory and x-ray experi-
ence, to act as assistant to surgeon in 50-bed
private hospital; salary to begin with \$100 per
month and maintenance; x-ray knowledge es-
sential. Dr. W. L. Cousins, St. Barnabas
Hospital, Portland, Maine. B

(Continued on page 24)

HEYDEN

SALICYLATES

Fifty years of experimental work and practical experience in the manufacture of salicylic acid and salicylates are behind every product in this group turned out by the Heyden Chemical Works.

Our long experience alone would not compel specification of these Heyden products on prescriptions, but when this is coupled with our elaborate checking system that guarantees every product to be of U. S. P. strength and purity or better, physicians are amply justified in specifying "Heyden" on all prescriptions for salicylates in the treatment of rheumatism, colds and other conditions where the use of salicylates is indicated.

Send for our booklet.

THE HEYDEN CHEMICAL WORKS

Main Office, Research Laboratories and Works, Garfield, N. J.

New York Office, 135 William Street

FINE CHEMICALS

Four weeks SPECIAL COURSES in

Ear, Nose and Throat

Beginning June 28 in Chicago
Beginning August 2 in Seattle
Beginning Sept. 6 in Chicago

For information, address

ALBERT H. ANDREWS, M.D., 32 North State Street, CHICAGO

Cystoscopy Urethroscopy

Genito-Urinary & Venereal Diseases

Dr. Leo Michel and staff will continue their classes and courses of individual instruction in these subjects at the N. Y. School of Clinical Medicine. Apply to

Dr. Leo Michel

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By Victor Robinson, M.D.

A unique contribution to the history of American medicine, containing information not elsewhere available. Illustrated with thirty portraits and facsimiles.

Price, \$2.50, postpaid.

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Creosote Medication

is freed from the objectionable features without lessening therapeutic efficiency when CALCREOSE is administered. And it can be taken as long as needed without untoward effect on the stomach.

Samples on Request

THE MALTBIE CHEMICAL CO.

Newark, N. J.

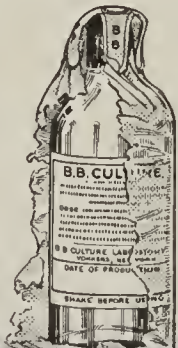
B. B. CULTURE

Especially valuable at this season in the treatment of infant enterocolitis. The high viability of

B. B. CULTURE

insures a quick inhibitory action in the tract with consequent rapid recovery.

Samples for clinical trial and literature on request.



B. B. CULTURE LABORATORY
YONKERS NEW YORK

A CLASSIFIED Advertisement Inserted in THE JOURNAL is accessible to about TWO-THIRDS of the medical profession.

(Tonics and Sedatives continued)

A CHILD'S SUMMARY OF HEALTH RULES

The following resumé of a forty-five-minute talk on health and hygiene, given in a school room down in the mountains of North Carolina, was made by a child nine years of age, to take home to her mother. The child certainly caught the essential points:

If ye wash yourself inside and out no pisin will stick to you and make you sick.

Your mouth was made to eat with and yer nose to breath with. Ef ye don't do hit this a way ye might get a sickness.

Ef you haft to spit, kiver it up with dirt.

Ye needn't have varmints in yer hed ef ye don't want him. I fergit the name she give the stuff that will kill 'em, but if ye keep clean they won't be any.

Ef sores air made clean and kep clean ye won't git blood pisin.

Worms is dirt come to life in you, as should not be thar. Wash all garden stuff keerful and clean your spring.

Ef ye don't scour your teeth yer mouth might be a swill pail and ef waste is not got rid of ye might get a fever.

Ef ye keep yer finger nails clean ye can scratch yer hid without danger of pisin. And hit air not polite to hev dirty nails.

Ef ye have sore eyes, don't spread 'em among others. Be keerful not to use no one's basin or towel or handkerchiew.

Ef you see a baby with sore eyes, tell a doctor. Little babies don't belong to have nothing the matter with 'em.

Ef you get hurt get fixed right away or tomorrer it will be a bigger hurt. A house afire is too late."

THE CLEVERNESS OF MERRICK

From Leonard Merrick's "Conrad in Quest of His Youth"

"Much may be done in six months; his parents gave Keats to the world in seven," said Conrad.

He drifted into a music hall, where quailing brutes who had been created to scamper on four legs were distorted to maintain a smirking brute who was unworthy to walk on two.

Anticipating Trouble

Marion Republican

I wish to extend my heartfull thanks to my many friends, who during my recent illness gave me roses of sympathy and even gave me a sip of the milk of human kindness. I wish to thank them that they did not wait until the Doctors, looking wise, said: "He's dead." Immediately they send for the undertaker to be sure that I am dead. He cuts my veins, lets out what blood I have in me, pumps me full of poison, sews my eyes and lips together so I can't speak or wink at my friends, puts me in a casket, screws the top down on it so I can't get out. Taking more precautions they put me in another box and fasten it good and tight; a few more precautions, they put me in a deep hole six by six by three; then put soft dirt all around the side of my box; then at a signal, for fear that I come back all hands join in piling dirt on me as long as they can get it; then to give me trouble to get up if I could, they take their spades and pat the dirt on me good and strong, then here comes the friends with flowers and pile them on my grave as long as they can, then stand back and look down on where I am and say smell them flowers if you can. I say I thank you for giving me my flowers while I make this earth my habitat. Yours for passing a smile. A. W. SPRINGS, M.D.

PRIME FACTORS

Examination in Medical Jurisprudence

"What are the qualifications of a medical expert?"

Two candidates replied, respectively,

"Truthfulness; sanity."—W. C. R.

(Continued on page 26)

(Continued from page 22)

WANTED—ASSISTANT PHYSICIAN IN state hospital for insane, middle west; single man preferred; state age, qualifications and references. Add. 8945 B, % AMA.

WANTED—ASSISTANT PHYSICIAN—Applications will be received for the appointment of a resident physician at the State Psychopathic Hospital, University of Michigan, Ann Arbor, Mich.; the position offers unusual opportunities for training in psychiatry and neuropathology; salary \$1,200 per year with full maintenance; service to begin July 1 or soon after. Add. Dr. A. M. Barrett, Ann Arbor, Mich. B

PHYSICIANS WANTED

WANTED—PHYSICIAN—THERE IS A good field open for a young physician of experience in the Town of Southwick, Hampden County, Mass., and vicinity. Southwick is one of the most prosperous farming towns in western Massachusetts. Its residents are successful and well to do, and there seems to be an excellent opportunity for any young man in the medical profession to make a success if he will locate in said town. Address Town Clerk. C

WANTED—MALE PHYSICIAN, GRADUATE of A-1 school; general hospital experience necessary; with or without experience in psychiatry; in applying give college of which you are a graduate, age, nationality, civil condition, etc. R. A. Stewart, M.D., Supt., Independence, Iowa. C

WANTED—PATHOLOGIST, BACTERIOLOGIST, serologist, connection diagnostic laboratories; progressive city middle West; salary \$250 to \$300 per month; position open immediately. 9012 C, % AMA.

WANTED—BY A COMPLETE WELL organized Medical Group a Class A-1 graduate with hospital training, to do general practice and work into eye, ear, nose and throat. Add. 9009 C, % AMA.

WANTED—PHYSICIAN TO TAKE OVER practice in Montana town of 12,000; good outlying district; collections 99 per cent. good; for further particulars add. 9011 C, % AMA.

WANTED—A WOMAN PHYSICIAN AT the Rochester State Hospital, Rochester, Minn. Add. Arthur F. Kilburne, Supt. C

WANTED—COMPETENT ROENTGENOLOGIST to take charge of independent x-ray laboratory controlled by group of physicians and surgeons; state age, qualifications, experience and salary desired. Add. Dr. Allan Foster, 2212 S. Adams St., Peoria, Ill. C

WANTED—PHYSICIAN—EXCELLENT small town location; doctor is moving to a larger place; nothing to sell; can make good living from the beginning. Add. 8990 C, % AMA.

WANTED—A JUNIOR PHYSICIAN, RECENT graduate, for Workmen's Circle Sanitarium at Liberty, N. Y.; salary \$1,000 and full maintenance. Communicate with Dr. J. Halpern, 16 E. 96th St., New York, N. Y. C

WANTED—A PHYSICIAN AND SURGEON past middle life must divide his practice and limit it to office and surgery; wants good man about 30 or 35 years to whom he can turn the outside work, which is very large; location in Missouri in city of 25,000; none but the best need apply. Add. 8980 C, % AMA.

WANTED—A RECENT GRADUATE OR young physician to take charge of one of my offices; good proposition; nothing to sell. Add. 8978 C, % AMA.

WANTED—RECENT GRADUATE OF A-1 school to do eye, ear, nose and throat work of group in western city 18,000; salary to start and gradually increasing percentage of business with demonstration of ability (loyalty and energy; answer, giving credentials, age, nationality, religion and whether married or single; must report quickly. Add. 9003 C, % AMA.

WANTED—DOCTOR TO LOCATE IN small North Dakota town; large territory. For further information add. Secretary Commercial Club, Englevalle, N. D. C

WANTED—PHYSICIAN—IN WESTERN North Dakota town with large territory; established practice and nothing to buy; young practitioner preferred. Add. Commercial Club, Powers Lake, N. D. C

(Continued on page 26)

Grape Ola

is a natural fruit beverage full of body, strength and flavor and containing all the constructive and refreshing properties of ripe grapes.

Because it is so easily assimilated and supplies elements which are essential in a drink for invalids, convalescents and children, Grape Ola is used and recommended by many physicians and leading dietitians.

Grape Ola also serves as a pleasant vehicle to disguise the taste of oil, salts, iron, etc.

It is a more pleasing drink than ordinary grape juice and more economical.

Grape Ola is very quickly and easily made by mixing 4 or 5 parts of water with one part of

Grape Ola

CONCENTRATE

*One Quart Makes 30 Glasses
Just Add Water—No Sugar Required*

Grape Ola Concentrate also makes delicious desserts and is a very appetizing sauce for puddings, sundaes, etc. A tablespoon in Grapefruit gives a delightful flavor that adds zest to the appetite.

A sample of Grape Ola Concentrate sufficient to make 7 or 8 glasses of Grape Ola will be mailed to any physician on receipt of 25c to cover cost of mailing.

Fill out attached coupon and mail to

GRAPE OLA PRODUCTS CORPORATION

12 WEST 22nd STREET, NEW YORK

Enclosed
is 25c for which
mail sample of
Grape Ola Concen-

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ADDRESS

DOCTOR: Write Us—**FRACTURES**

Hip, Thigh or Leg Set. Splints rented ready to apply. Patients pay \$35.00 for 2 months or less. Your treatment with the AMBULATORY PNEUMATIC SPLINT, in or out of bed, secures good bone union, comfort, strength and health in the least possible time.

To Order: State sex of patient; fracture; which limb; length of perineum to heel; circumference of chest; hips; and thigh at perineum. Wire and mail orders expressed on receipt, adjusted to fit, with complete directions for application.

Specify this modern splint and our patented

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Made laced or buckled, to order only, for any person for any condition, requiring efficient and comfortable up-lift or binder support. Send for samples of materials and order blanks.

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Elastic hosiery, trusses, braces, artificial hands, arms, legs, extension shoes, surgical corsets, crutches, invalid wheel chairs, and supplies are corrective and the best made.

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Forbes Field

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Doctor: Use the NU, clean, convenient, simple, accurate, up-to-date, time-saving Urinometer.

No separate jar required; no pouring of urine back and forth.

Simply draw specimen from bottle or any other container; read findings, and continue urinalysis by dropping onto litmus paper and conveying to test tubes for further examination, controlling flow with exactness and retaining your sense of cleanliness. It requires smallest specimen consistent with accuracy and saves disappointment when large quantity is not available. It saves time in any event, especially in ureteral catheterization. One of the greatest improvements in the urinometer for centuries. Send your name and address today with check or money order for \$3.00 and use this modern instrument.

THE NU URINOMETER CO.

Donaldson Bldg., Minneapolis, Minn.

(Tonics and Sedatives continued)

THE NATURAL INFERENCE

He was a good speaker and had been invited to the state asylum to make an address to the inmates. He was going along fine when suddenly one of the audience stood up and remarked in a loud voice:

"The speech is rotten. It's the worst speech I ever heard."

To say the least the speaker was nonplussed. He stopped and turning to the superintendent, who had introduced him he asked:

"What shall I do? Shall I stop?"

"No, go ahead," said the superintendent. "That man has only one lucid interval every seven years."

SAYINGS OF THE PRESS

Cornell Widow

We fought for the freedom of Cuba in '98 and now we have to go there to enjoy it.

New York World

When sugar at twenty-five cents a pound can be made into candy that sells for a dollar and a quarter a pound, it is not surprising that there is a shortage.

WHY NOT?

The day coach was crowded. On one seat sat a sheriff conveying a manacled lunatic to the state asylum and in the seat behind was a little old Irishman, tremendously interested in the sheriff and his prisoner. Finally, overcome by his curiosity he leaned forward and said to the sheriff in a boarse whisper:

"Phwats' the mather wid 'im?"

The sheriff pointed to his head. "Buggy," he said, "buggy; full of bugs."

"Phwat?" gasped the Irishman.

"He's crazy," said the sheriff.

"An' why wouldn't he be. Buggy—an' wid his hands tied!"

SYNONYMOUS

Man with belt Optimist
Man with one suspender Slouch
Man with pair of suspenders Conservative
Man with belt and suspenders Pessimist

A GOOD OPPORTUNITY

O'Brien was soliciting funds for Ireland. After he finished his appeal he offered to answer any questions. "How much of this money that we're contributing to Ireland sticks in your pockets, Mr. O'Brien?" asked a big rough in the audience. Immediately the man on his right hit him in the jaw and knocked him down. His neighbor to the left jumped up and down upon his prostrate body. Two big policemen carried him up the aisle and threw him into the gutter. Finally, when quiet had been restored, the chairman advanced to the front of the platform and said, "Is there anybody else who would like to ask a question?"

See the doctor—he is happy—he is fixed up bright and snappy and he's brimming with elation for he's off on his vacation. Naught cares he of Brown's phlebitis or the baby's stomatitis; the pimples on sweet Susy can not make him frown or fret; has Jones got encephalitis or perhaps appendicitis; while the doc's on his vacation he'll not worry you can bet. He'll play golf, also lawn tennis and between he'll read a book: in the evening you will find him in some cozy sheltered nook. Gee it's great to have the pleasure; he'll enjoy it without measure. When he comes back he'll do better for the little rest he took.

(Continued from page 24)

WANTED—PHYSICIANS — YOUNG SINGLE men preferred; excellent opportunity for rapid advancement after examination; salaries range from \$1,200 to \$2,600 and full maintenance; write full details, giving age, nationality, education and experience. Brooklyn State Hospital, Brooklyn, N. Y. C

WANTED—A DOCTOR TO START A PRIVATE hospital in our town. For further information add. P. O. Box 93, Nazareth, Pa. C

WANTED—AN EXPERIENCED PATHOLOGIST, competent to do Wassermann and tissue work; salary \$200 and maintenance if single man. Add. Louisiana Hospital for Insane, Pineville, La. C

WANTED — SINGLE MALE RESIDENT physician at the Norwich State Tuberculosis Sanatorium, Norwich, Conn. For further particulars write the Superintendent, Dr. Hugh B. Campbell, Norwich, Conn. C

WANTED — AT ONCE—A GOOD HUSBANDING physician in a town of about 1,500; good surrounding territory. For further information apply Sandlin Bros. Drug Co., Coal Hill, Ark. C

WANTED—PHYSICIAN TO TAKE charge of general clinical laboratory for group in middle west; city of 50,000; state qualification and salary expected. Add. 8937 C, % AMA.

WANTED — PHYSICIAN, LICENSED IN Pennsylvania, to take over \$6,000 practice in community of 3,000; main line P. R. R.; Pittsburgh region; no dispensing; people educated to prescription work; number good appointments transferable; no real estate in deal; all modern improvements in town; leaving July 15 for city. Add. 8894 C, % AMA.

WANTED — TWO PHYSICIANS FOR staff male department, State Hospital for the Insane, Norristown, Pa. Add. applications to Medical Committee, State Hospital, Norristown, Pa. C

WANTED—RESIDENT PHYSICIAN, SINGLE, for sanatorium for tuberculosis; average number of patients 40; also daily visits to sanatorium for colored consumptives one quarter of mile away; also one afternoon at the city dispensary; these services for the purpose of enlarging experience and increasing interest in the work; opportunity for advancement; state qualifications and salary expected. Add. Dr. Albert Robin, 1011 Washington St., Wilmington, Del. C

WANTED — DOCTOR CATHOLIC COMMUNITY Central Missouri; railroad town of 500; competition very light; made \$5,000 past year; practice given to purchaser of drugs; specializing. Add. 8866 C, % AMA.

INTERNS WANTED

WANTED—INTERN—CHANCE TO COME to California; for internship at La Vina for six months; capacity 100 beds; tuberculosis; 5 miles from Pasadena; two other medical men present; salary \$100 per month, room and board. Add. Director, La Vina, Calif. D

WANTED — THREE INTERNS FOR ONE year, beginning July 1; fully equipped 125-bed hospital, giving mixed services; reasonable remuneration. Apply Supt. Pittsburgh Hospital, Frankstown Ave., Pittsburgh, Pa. D

WANTED—TWO INTERNS FOR REGINA General Hospital, 225 beds; one year's general service; salary \$50 per month and maintenance; substantial increase after three months if satisfactory. Apply at once to Superintendent Regina General Hospital, Regina, Sask., Canada. D

WANTED—INTERNS AT THE NATHAN & Hiram Barnert Memorial Hospital, Paterson, N. J.; 85 beds, comprising medical, surgical, obstetrical, ambulance and dispensary; good opportunity; service 1 year to 18 months; monthly allowance. Apply to Superintendent. D

WANTED—INTERN FOR STATE INSTITUTION; salary \$600 per year. Add. 8280 D, % AMA.

NURSES WANTED

WANTED—DIRECTRESS OF NURSES IN private hospital, southern Ohio; present building completed 1918; 35-bed addition in process of construction and new nurses' home being planned; work mostly surgical; special departments in radium and urology; have used

(Continued on page 28)



OVALTINE

IN DIFFICULT ALIMENTATION

The capacity to absorb nutriment is, as a rule, directly proportional to the state of the patient's health and to the digestibility and assimilability of the food chosen as a diet.

When the health is poor, therefore, there is a lowered absorptive capacity. To compensate for this the digestive and assimilative value of the food must be increased.

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Maltose being the ultimate end-product of malt diastase action, requires little if any digestion.

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It places a minimum tax on the digestive apparatus, hence its ready tolerance by weak, malnourished infants as well as by those who are in normal tone.

Correction of Constipation—

Maltose invariably increases the frequency of the stools. With the high percentage of maltose furnished by Borchardt's Malt Sugar the diet may be quickly and definitely adjusted to overcome constipation.

Borchardt's Malt Sugar may be obtained at most druggists. Descriptive literature, samples and analysis sent on request.

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Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

PATHOGENIC MICROORGANISMS. A Practical Manual for Students, Physicians and Health Officers. By William Hallock Park, M.D., Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College, and Anna Wessels Williams, M.D., Assistant Director of the Bureau of Laboratories of the Department of Health. Assisted by Charles Krumwiede, Jr., M.D., Assistant Director of the Bureau of Laboratories. Seventh edition. Cloth. Price, \$6. Pp. 786, with 223 illustrations. Philadelphia: Lea & Febiger, 1920.

WILLIAM HENRY WISHARD: A DOCTOR OF THE OLD SCHOOL. By His Daughter, Elizabeth Moreland Wishard, With Memorial Services; His Historical Addresses and Papers, and a Brief History of His Wife's Ancestry. Printed for Relatives and Friends. Cloth. Pp. 340, with illustrations.

PRINCIPLES AND PRACTICE OF INFANT FEEDING. By Julius H. Hess, M.D., Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine. Second edition. Cloth. Price, \$2.50 net. Pp. 343, with illustrations. Philadelphia: F. A. Davis Company, 1919.

A TEXT-BOOK OF DERMATOLOGY. By J. Darier, Physician to the Hôpital Saint-Louis. Authorised Translation from the Second French Edition. Edited with Notes by S. Pollitzer. Cloth. Price, \$8.50. Pp. 769, with 208 illustrations. Philadelphia: Lea & Febiger, 1920.

MENTAL DISORDERS BRIEFLY DESCRIBED AND CLASSIFIED WITH A FEW REMARKS ON TREATMENT AND PREVENTION. By Charles B. Thompson, M.D., Medical Director of the Mental Hygiene Society of Maryland. Paper. Pp. 48. Baltimore: Warwick & York, 1920.

A DIABETIC MANUAL FOR THE MUTUAL USE OF DOCTOR AND PATIENT. By Elliott P. Joslin, M.D., Assistant Professor of Medicine, Harvard Medical School. Second edition. Cloth. Price, \$1.75. Pp. 191 with illustrations. Philadelphia: Lea & Febiger, 1919.

REGIONAL ANESTHESIA (VICTOR PAUCHET'S TECHNIQUE). By B. Sherwood-Dunn, M.D., Officier d'Académie. Paris. Cloth. Price, \$3.50. Pp. 294, with 244 illustrations. Philadelphia: F. A. Davis Company, 1920.

AN ANALYSIS OF 15,584 OPHTHALMIC CASES TREATED AT A HOME HOSPITAL. Medical Research Committee, Statistical Reports, No. 6. Paper. Pp. 22. London: His Majesty's Stationery Office, 1920.

AMERICAN CHILD HYGIENE ASSOCIATION, FORMERLY AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY. Transactions of the Tenth Annual Meeting, 1919. Paper.

EXPERIMENTAL ORGANIC CHEMISTRY. By Augustus P. West, Ph.D., Professor of Chemistry, University of the Philippines. Cloth. Price, \$3. Pp. 469, with illustrations. Yonkers-on-Hudson: World Book Company, 1920.

KNOWLEDGE ENHANCED: PHENOMENON OF SLEEP SOLVED. By Luther Stockton Fish. Cloth. Price, \$5. Pp. 297, with illustrations. Cleveland: C. Hauser, 1920.

GLI ADDOMINALI DI GUERRA. Por N. Giannettasio. Paper. Pp. 265, with illustrations. Bologna: L. Cappelli, 1920.

TRANSACTIONS OF THE ROYAL ACADEMY OF MEDICINE IN IRELAND. Vols. XXXVI and XXXVII. Cloth. 1920.

TRANSACTIONS OF THE AMERICAN NEUROLOGICAL ASSOCIATION. Forty-Fifth Annual Meeting, 1919. Cloth.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Volume 44 for the Year 1919. Cloth.

MALARIA BUREAU REPORTS, FEDERATED MALAY STATES. Paper, 1919.

(Continued from page 26)

all graduate nurses previously; want to open training school September 1; anxious to secure superintendent of nurses to give full time from July 15 that she may organize school, select her own materials, etc.; excellent salary offered the person with the right training and experience. Add. 8995 T, % AMA.

WANTED — OFFICE NURSE. ADD. DR. R. G. Eaton, Ethan, S. D. T

WANTED—MANAGER NURSE FOR NEW modern hospital, twenty rooms, in attractive residence city of eight thousand population, near Cleveland, Ohio, and Lake Erie; state experience, qualifications and salary. Add. 8863 T, % AMA.

WANTED — SUPERINTENDENTS, SUR- gical, general duty, industrial, nurses, dietitians; write for free book. Aznoe's Central Registry for Nurses, 30 N. Michigan Ave., Chicago.

NURSES FURNISHED FOR ANY KIND work any where. Quick service; also attendants, institutional employees, office help, etc. F. V. Kniest, Bee Bldg., Omaha, Neb.

LAB. TECHNICIAN WANTED

WANTED—FOR HOSPITAL OF 75 BEDS in city of 25,000 in the northwestern part of Massachusetts, an experienced woman laboratory technician; only a well-qualified person need apply; make application with references and salary expected. Add. 8985 V, % AMA.

WANTED—X-RAY TECHNICIAN—PROMI- nent internist in large southern city wishes to engage x-ray technician, man or woman; must be thoroughly trained and competent to take charge of up-to-date laboratory doing exclusively diagnostic work. Add. 8984 V, % AMA.

WANTED—A LADY X-RAY AND LABORA- tory technician for a group in a Missouri city of 25,000; send references and state salary; expect only the best to answer. Add. 8981 V, % AMA.

WANTED—TECHNICIAN WITH EXPERI- ence in pathology and tissue work; man or woman acceptable; congenial surroundings; large private laboratory; state qualifications and salary expected in first letter; permanent position to right person. Drs. Ellis and Butler, P. O. Box 201, Shreveport, La. V

WANTED—A PHYSICIAN TECHNICIAN to take charge of a well-established laboratory connected with hospital, in city of 80,000; must be able to do all kind of laboratory work; please state qualifications, references and salary expected. Add. 8938 V, % AMA.

WANTED — COMPETENT LABORATORY technician for small hospital; must be R.N. who can assist in operating room; salary \$1,000 per year with full maintenance. Add. 8884 V, % AMA.

WANTED—TWO TECHNICIANS — ONE to do serology and bacteriology and one for general laboratory work, including bacteriology and serology and clinical pathology. Add. 8896 V, % AMA.

PARTNERS WANTED

WANTED—AT ONCE—YOUNG MAN, RE- cent graduate, to form partnership with an older doctor who has more than can handle; country work; town 1,200, state Iowa; must be man of good character and willing to hustle. Add. 8991 G, % AMA.

WANTED—COMPETENT EYE, EAR, NOSE and throat man of experience to join group clinic in Indiana; position must be filled immediately; excellent opportunity for right man. Add. 8971 G, % AMA.

WANTED—ESTABLISHED GROUP, GROW- ing city middle west, requires thoroughly qualified otolaryngologist, also gynecologist, obstetrician with view to equal partnerships; must be expert operators; moderate capital necessary; detailed qualifications first letter. Add. 9006 G, % AMA.

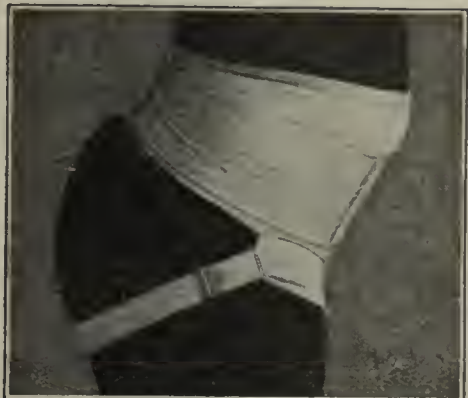
PARTNERSHIP WANTED

WANTED — BY OBSTETRICIAN, WITH wide experience; partnership, position or location; can do obstetric surgery and teach clinical obstetrics; age 40; single; graduate A+ school 1903; highest references given and expected. Add. M. P. O. Box 332, Rochester, Minn. H

(Continued on page 30)

The Storm Binder and Abdominal Supporter

(Patented)



For GENERAL SUPPORT



SACRO-ILIAC SPECIAL



MATERNITY



INFANT'S SUPPORTER

Recognized by the Medical Profession in America and across both oceans as in harmony with modern surgery.

For General Support in visceroptosis, obesity, general relaxation of abdominal walls, etc., etc.

For Special Support in hernia, relaxation of the sacro-iliac articulations, floating kidney, descent of stomach, colon and intestines.

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For Maternity Cases, for the nausea and discomforts of pregnancy.

For Any Purpose for which man, woman, child or infant needs an abdominal supporter.

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Every Binder Is Made to Order from data furnished us by the physician. None are "ready-made." Each is designed for special needs of the case.

Washable as Underwear. No leather, no whalebones, no rubber elastic in Storm Binders.

Send for New Folder which describes construction of the Binder and shows its adaptability to varied needs. Also contains illustrations, prices and samples of our specially made materials, with instructions for measuring and testimonials of physicians.

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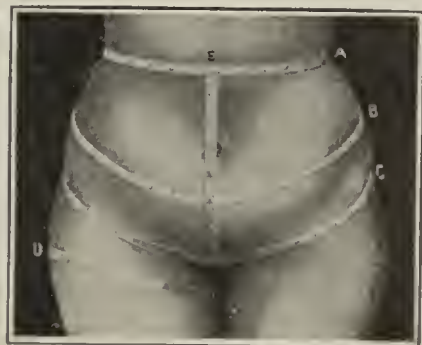
SPECIAL KIDNEY BELT combined with general abdominal support



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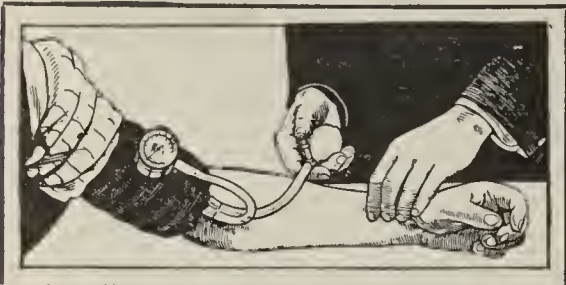
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Draw the tape line snugly around the body over the skin.

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This Sanborn Blood Pressure Outfit is sold under the following agreement and guarantee:

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Selling direct to physicians, reduces the cost 30 per cent.

PRICE.....\$17.50

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SANBORN COMPANY.

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You may send me a Sanborn Blood Pressure Outfit for trial. I shall return it if not satisfied.

If I keep it, I'll remit \$17.50.

Name.....

Address.....

(Continued from page 28)

WANTED — PARTNERSHIP — HIGHLY trained and experienced young general surgeon, with special training in urology, desires affiliation with retiring surgeon, or clinical group; best references; want hard work, responsibility and ethical association; state full details. Add. 8865 H, % AMA.

WANTED — EXPERIENCED GENERAL surgeon wants partnership with clinical group preferably; have large Victor Wantz x-ray equipment which will move if desired; prefer central or western states; must bear investigation; can furnish best references. Add. 8682 H, % AMA.

WANTED — EYE, EAR, NOSE AND throat association with high class specialist; good refractionist, capable operator; five years' connection in large city hospitals; would consider purchasing promising location. Add. 8999 H, % AMA.

WANTED — BY UROLOGIST, ASSOCIATION with group, hospital or general surgeon or opportunity to work independently with either by ex-house urologist of largest urological service in America; best references; graduate A1 school Add. 8977 H, % AMA.

WANTED—BY SURGEON, PARTNERSHIP or association with group or well-established general practitioner, south or southwest preferred; town of not less than 5,000; practicing 8 years; highest possible references as to character and ability; hold high college and hospital connections; must bear investigation. Add. 8948 H, % AMA.

WANTED — MAJOR, MEDICAL CORPS. Regular Army, over 5 years' service, considerable surgical experience, wants position as assistant to competent and established general surgeon with living salary and prospect of partnership or interest later, in fair sized town in Ohio or Colorado; aged 33, married, character, habits and personality excellent. Add. 8935 H, % AMA.

WANTED — EYE, EAR AND THROAT man. house surgeon 2½ years Manhattan Eye and Ear Hospital, desires partnership with elderly man of large practice, association with group or to purchase practice. Add. 8837 H, % AMA.

WANTED — PARTNERSHIP WITH SURGEON or physician where surgery can be developed by graduate A plus university; A.B. before medicine; aged 33; Protestant; 6 foot, perfect health; married, no children; five years' general work and surgery; also postgraduate. Add. 8908 H, % AMA.

LOCATIONS WANTED

WANTED — PRACTICE IN ILLINOIS town with large territory, practically unopposed. Add. 8992 E, % AMA.

WANTED—TO BUY WELL-ESTABLISHED general surgical practice in hospital town; expect thorough introduction; ability to handle good place; full details first letter. Add. 8988 E, % AMA.

WANTED — EYE, EAR, NOSE AND throat practice; state reciprocating with North Dakota, west of Mississippi River; would accept salaried place with industrial company. Add. 8973 E, % AMA.

WANTED — LOCATION, SITUATION OR locum tenens work in Pennsylvania, Ohio or West Virginia; graduate A plus school. 1917; 16 months' hospital experience; aged 25, married. Add. Box 964, Polk, Pa. E

WANTED—LOCATION OR SITUATION IN eastern Pennsylvania or New Jersey; graduate A plus school. 1917; 16 months' hospital experience; aged 25, married. Add. Box 217, Kutztown, Pa. E

WANTED — LOCATION OR PRACTICE for practice of surgery; also do general practice; well trained and experienced in major surgery; give full particulars, price, etc., in first letter; desire same in Indiana, Minnesota, Nebraska or Iowa. Add. 2436, % F. V. Kniest Bee Bldg., Omaha, Neb. E

WANTED — LOCATION OR CONTRACT practice in Chicago or surrounding territory; give full details first letter with investment necessary and terms. Add. Lieut. C. V. Winsett, 53d Inf. Infirmary, Camp Grant, Ill. E

WANTED — SURGEON DESIRES LOCATION with group in western city; must have A1 hospital facilities; 10 years' intensive experience as teacher and staff of 300-bed hospital. Add. 9001 E, % AMA.

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Stamped upon an electrically lighted surgical instrument this name is more than a protection for the Electro Surgical Instrument Company, originators and exclusive manufacturers of most important diagnostic instruments. It is an assurance that the suggestions and ideas of the eminent physician or surgeon for whom the instrument was named have been carried out to his complete satisfaction in the instrument's construction.

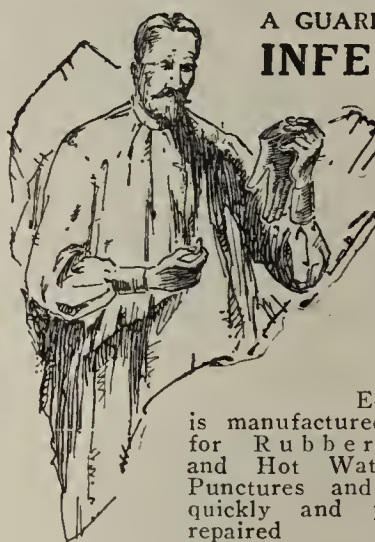
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E-Z PATCH
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Punctures and tears are
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No glue or sticky cement. Just place the PATCH in position and immerse the glove in hot water. Sterilizing in boiling water vulcanizes the PATCH and it will never tear or peel off.

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WANTED — JULY 15—GOOD LOCATION or general practice in Wisconsin by Catholic physician, aged 29; ex-service man; can make small investment; give full particulars. Add. 8968 E, % AMA.

WANTED — TO BUY CONTRACT PRACTICE in West Virginia; one paying not less than \$300 per month; state price, amount of territory and how it is covered in first letter. Add. 8950 E, % AMA.

WANTED—PEDIATRICIAN DESIRES LOCATION in the state of Washington; association (not partnership) with other specialists preferred; just completed eight months' post-graduate work in Chicago; references exchanged. Add. 8927 E, % AMA.

WANTED—LOCATION IN A SOUTHERN or central city with a doctor or group; or to buy practice; internal medicine and pediatrics preferred; best references; available September. Add. 8939 E, % AMA.

WANTED — LOCATION—WELL-TRAINED urologist and syphilologist desires location in west or southwest; prefers association with hospital or group plan; best references given and required. Add. 8898 E, % AMA.

WANTED — BY WOMAN PHYSICIAN, eye, ear, nose and throat location, association or assistantship; states reciprocating with Illinois. Add. 8854 E, % AMA.

LOCUM TENENS WANTED

WANTED — SERVICES OF GRADUATE physician for 3 months or more to assume full charge of my practice during my absence; any one interested please state terms and full details will be given by return mail; good future for the right man. Dr. E. J. Hamborszky, Farrell, Mercer Co., Pa. F

WANTED—COMPETENT YOUNG PHYSICIAN to take charge of country practice during July and August; to consider assistantship on my return. Add. G. C. Stuart, M.D., Eastover, S. C. F

SITUATIONS WANTED

WANTED—POSITION AS ANESTHETIST —Can give full time. Add. 8930 I, % AMA.

WANTED—ASSISTANTSHIP OR LOCUM tenens work in Iowa; experience 30 years; free till November; give town, population, county, nationality, general information, probable salary, time if both are satisfied; will reply in detail. Add. 8974 I, % AMA.

WANTED — POSITIONS BY HOSPITAL superintendents, man and wife; 12 years' experience in hospital administration; wife charge of nursing staff; husband general superintendent; prefer tuberculosis sanatorium; can manage any kind of institution. Add. 8997 I, % AMA.

WANTED — INSTITUTIONAL POSITION by graduate Class A school; 18 months' internship; California license; 3 months' graduate work on eye, New York; 18 months' general practice; married. Add. 8993 I, % AMA.

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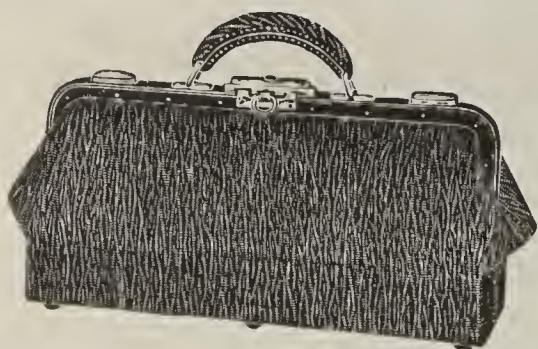
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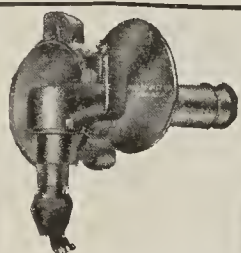


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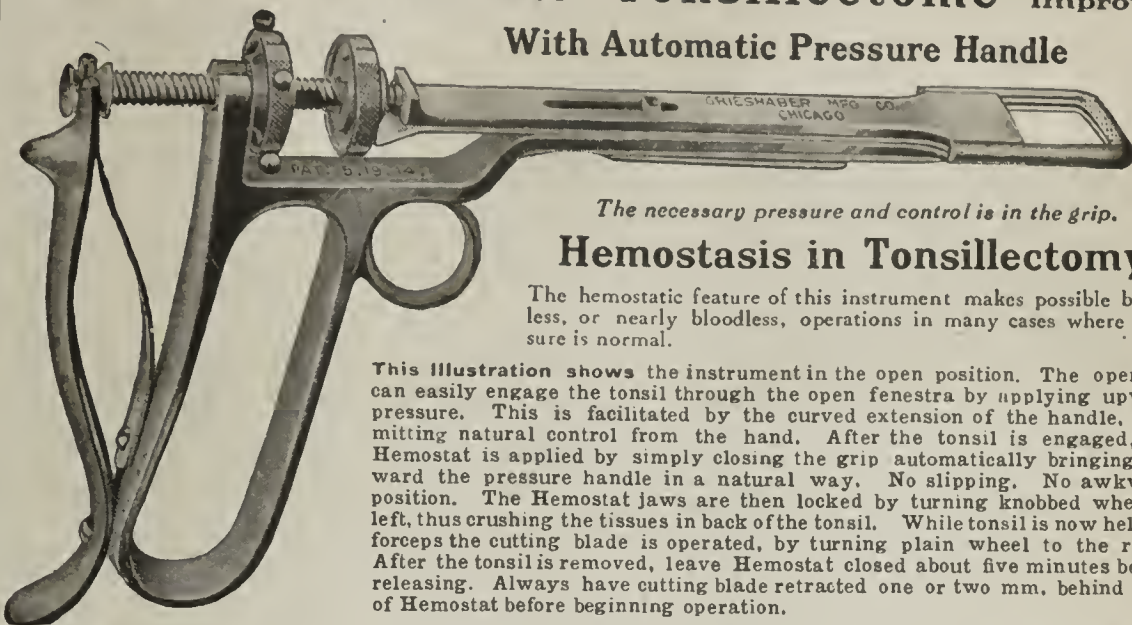
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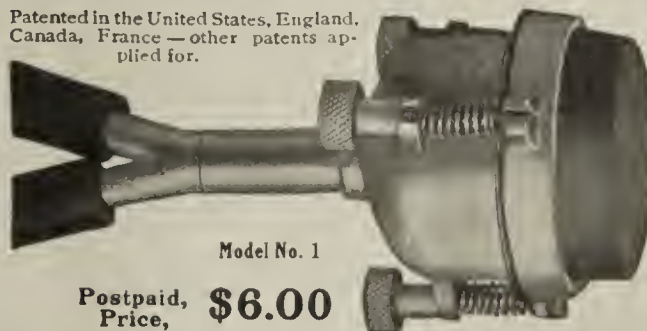
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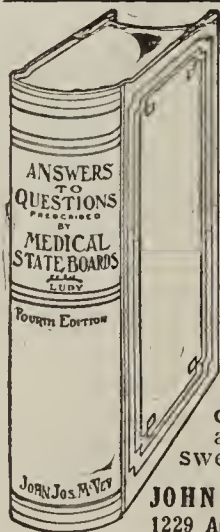
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\$12,000 yearly, for purchase of office equip-
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town, 4,000 population; good schools and
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dwelling, modern in every respect; hard-wood
floors throughout; electric lights, bath, toilet;
\$5,500; the purchasing of dwelling optional.
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(Continued on next page)

Doctor:— Here's Foot Correction As You Will Approve It!



Wedge elevation
at inner side shifts
weight to outer
border. Anterior
Metatarsal eleva-
tion (ball) of vul-
canized rubber be-
tween upper and
lower leathers.

They Make You
Want to Walk

This imprint of
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foot indicates the
only area designed
by Nature to carry
the body's weight.
Only this surface
is employed when
Nature tread
Pads are worn.

We say this because of the high endorsement
many members of the Medical Profession have
given to a new device for correcting foot weak-
nesses in a natural way and along old estab-
lished lines. We refer to

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The Naure Tread Method of foot ailment correction is based
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naturally belongs—namely, the *Heel, Outer-Border* and *Ball*
of the foot. This is accomplished by means of a wedge eleva-
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themselves to a normal and healthy condition. No pressure
whatever is applied at the arch and this delicate region is
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bearing naturally belongs. All other forms of treatment
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"The Nature Tread Pad is O. K." C. H. Ewing, Pres. Kan-
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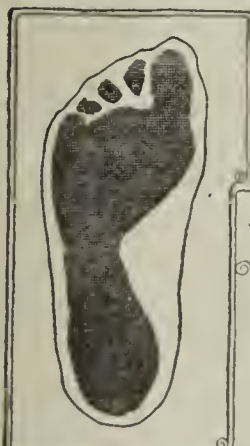
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(Continued from preceding page)

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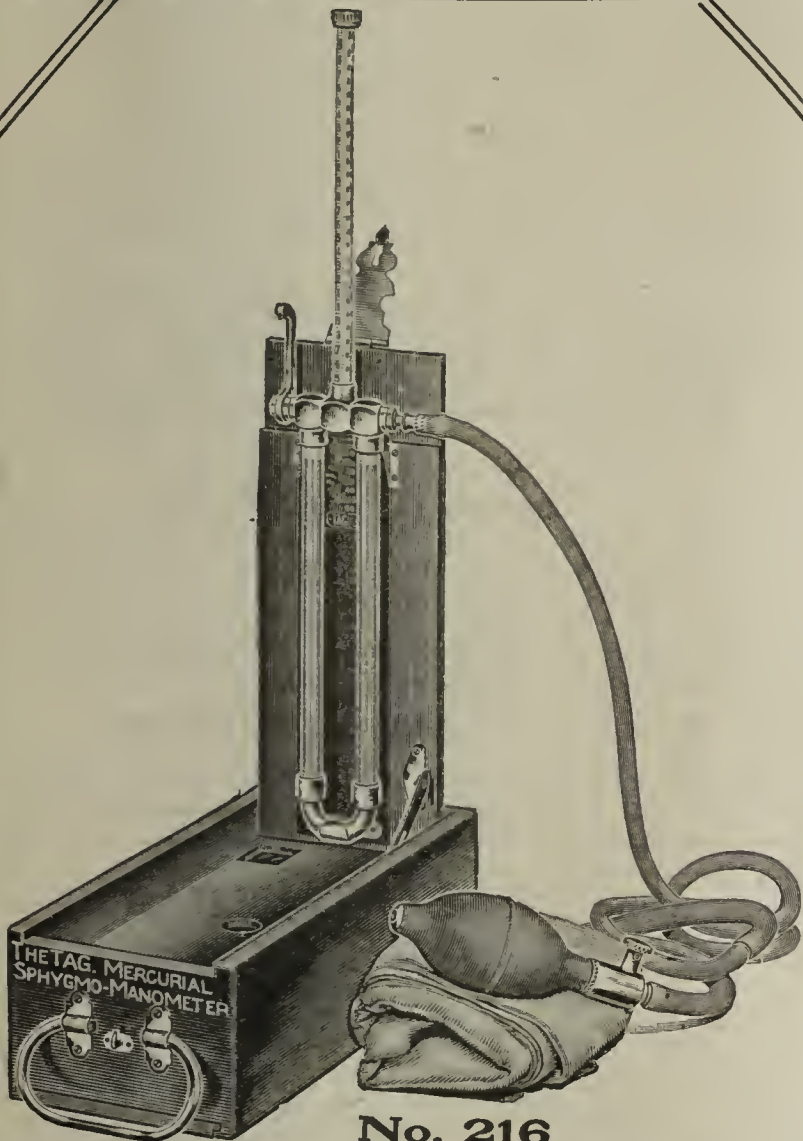
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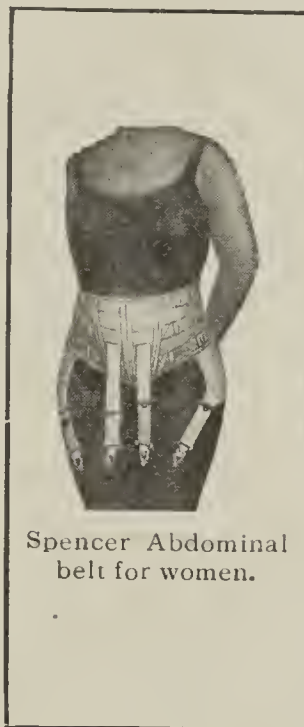
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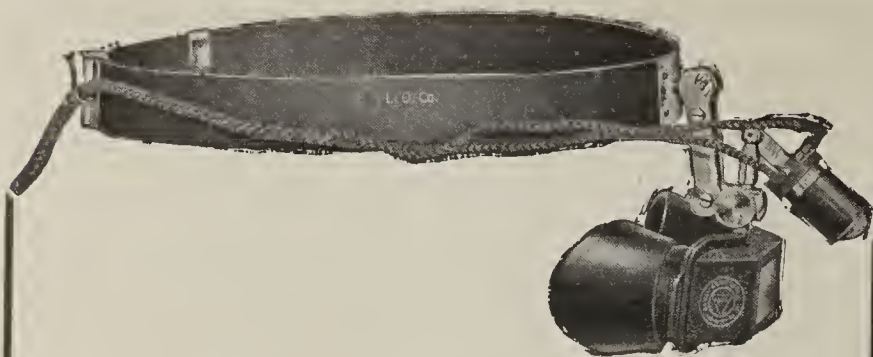
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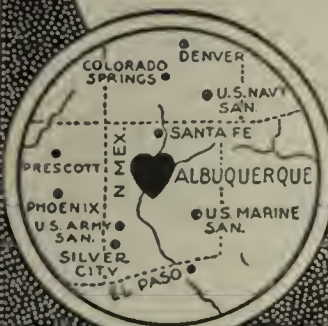
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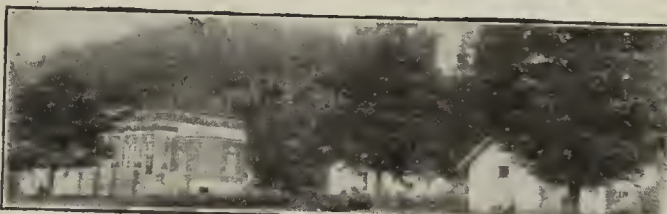
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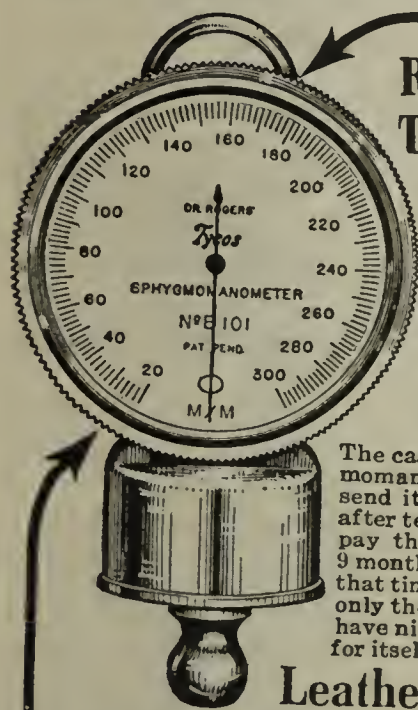
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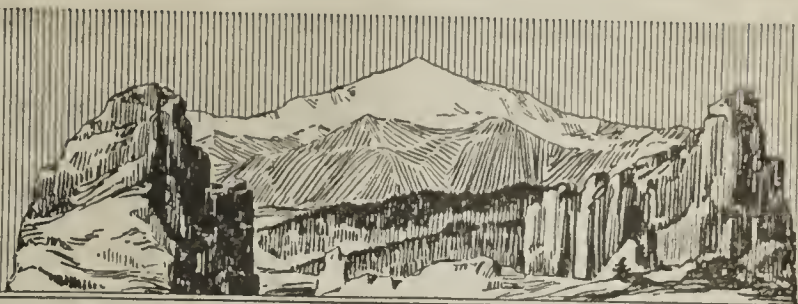
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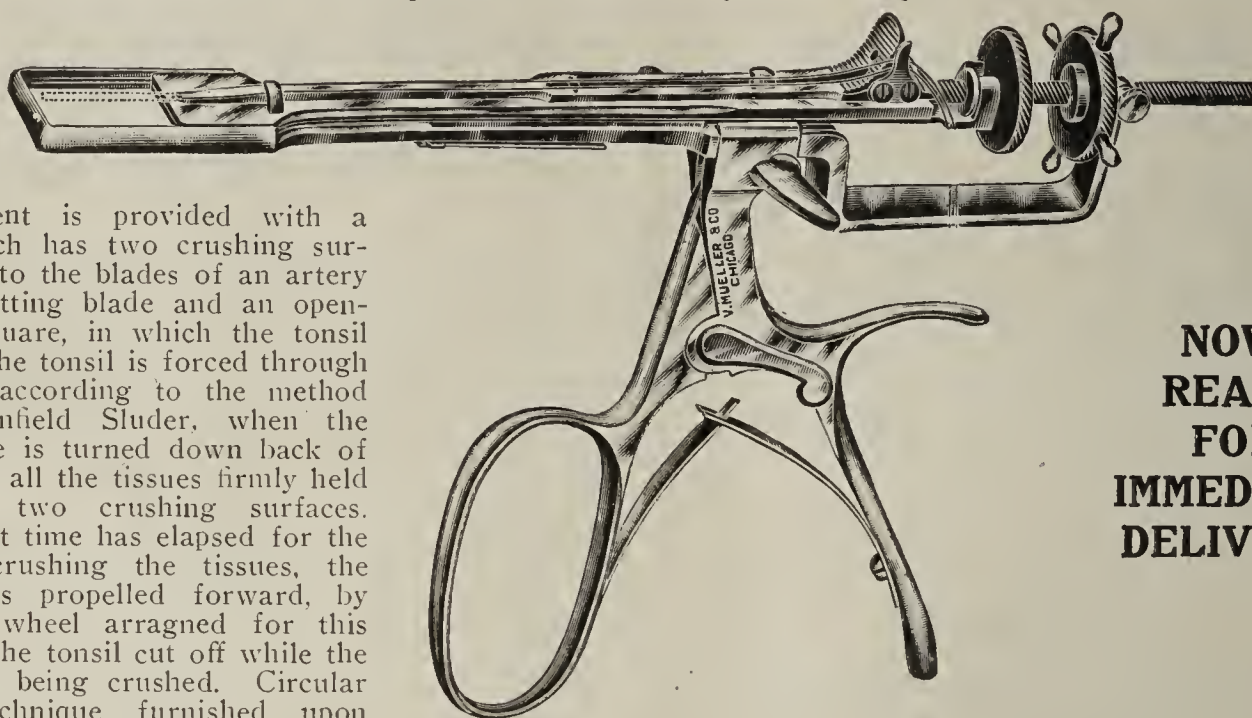
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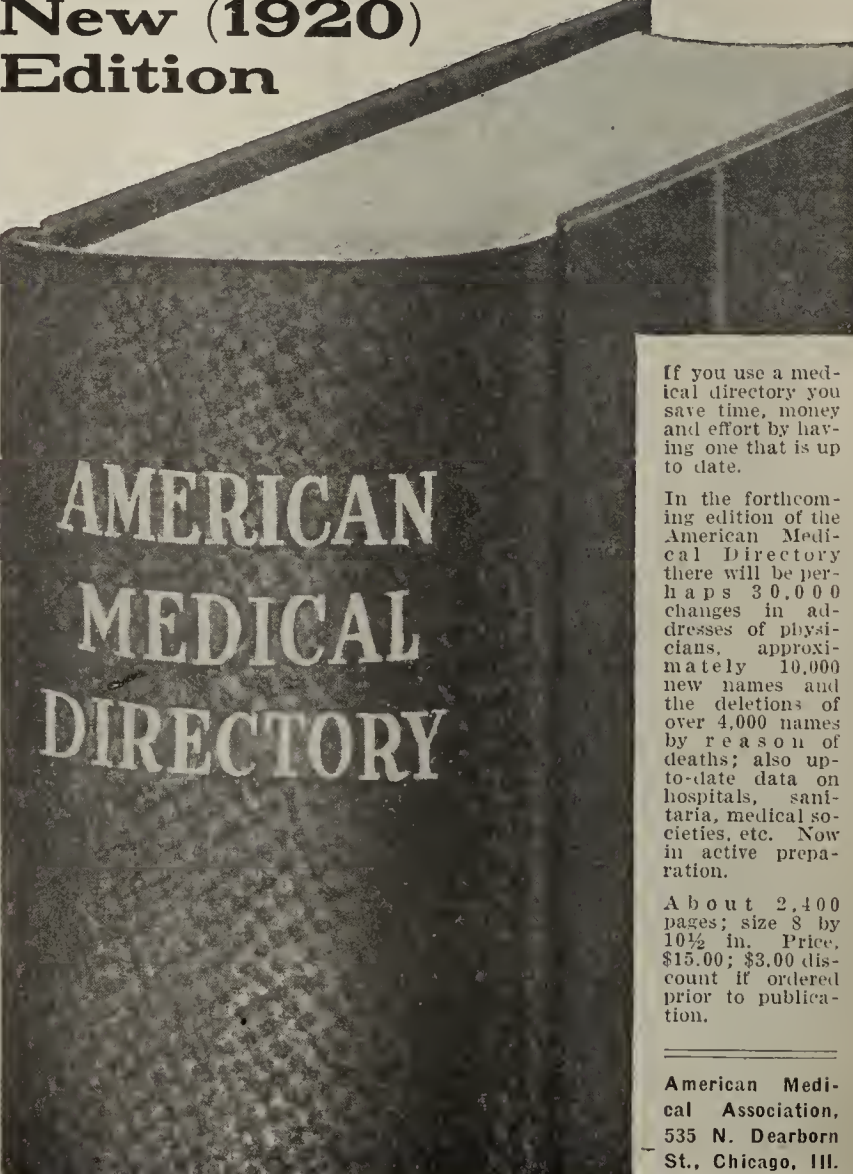
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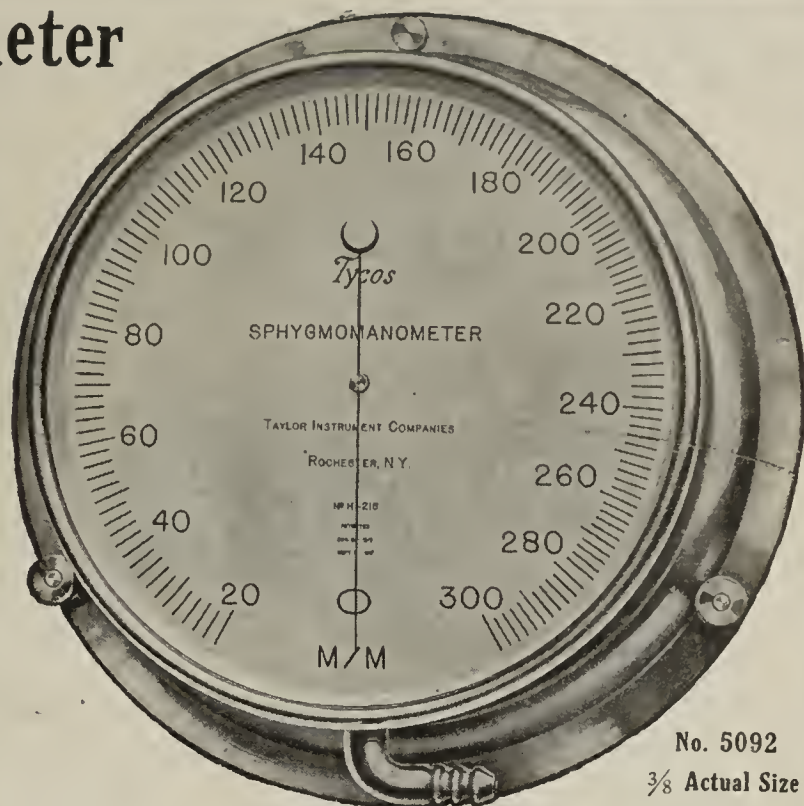
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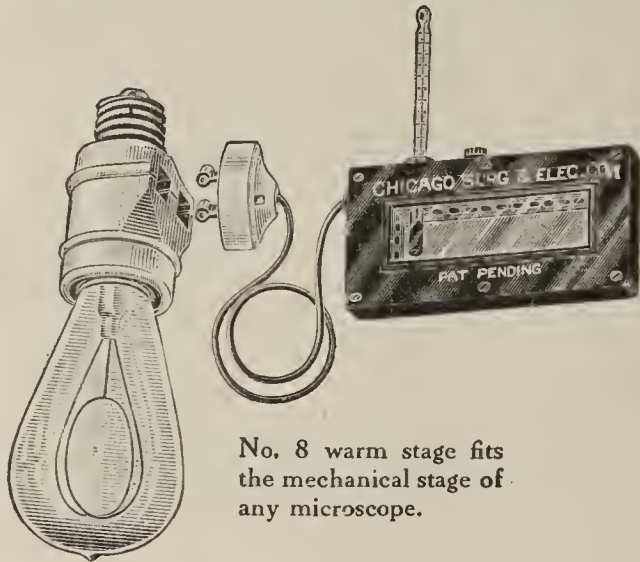
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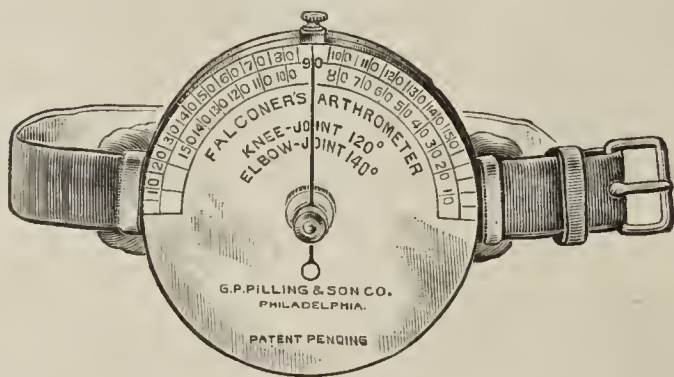
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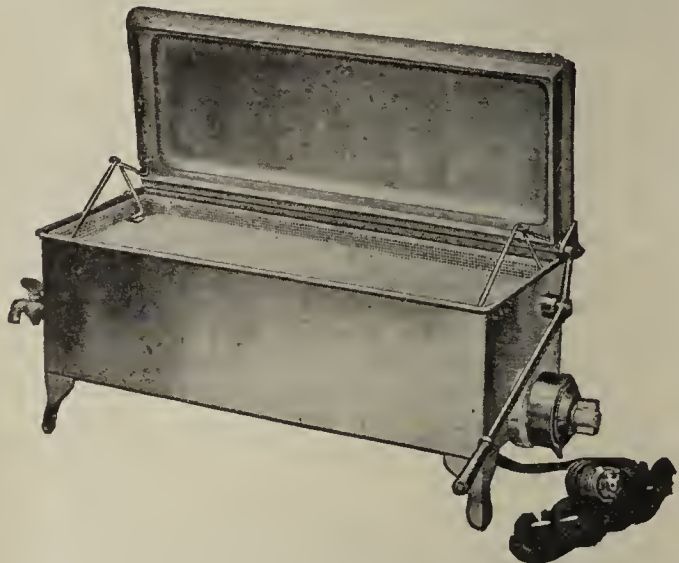
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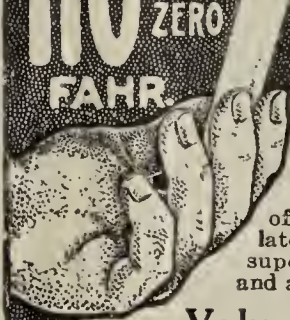
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